



ADIC

Hands-on Guide

for Designing and Developing
Digital Interactive Content



Dr. Abdurrahman Ghaleb Almekhlafi
United Arab Emirates University

ADIC:

Hands-on Guide

for Designing and Developing Digital Interactive Content

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**Hamdan bin Rashid Al Maktoum Foundation
for Distinguished Academic Performance**

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First Edition 2022

ISBN: 978-9948-25-730 -1

Issued by United Arab Emirates Ministry
of Culture and Youth, United Arab Emirates

Number 37060510 – date: 30-11-2020





In the Name of Allah,
the Most Beneficent, the Most Merciful.

﴿اقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ﴾ (1)

Recite! (read) in the name of thy Lord
and Cherisher, Who created-

﴿خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ﴾ (2)

Created man, out of a (mere) clot of congealed blood:

﴿اقْرَأْ وَرَبُّكَ الْأَكْرَمُ﴾ (3)

Recite! And thy Lord is Most Bountiful, -

﴿الَّذِي عَلَّمَ بِالْقَلَمِ﴾ (4)

He Who taught (the use of) the pen, -

﴿عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ﴾ (5)

Taught man that which he knew not.

«سورة العلق»

Foreword

In the past, many people, including those involved in the field of education, viewed e-learning solely as a means to support the educational process. With the incursion of the Covid-19 pandemic in countries across the globe, this perspective has changed due to the closure of schools and universities as well as applying social distancing conditions. E-learning has become an urgent necessity not only to face the challenges of the pandemic, but also for us to discover the great advantages of e-learning.

Undoubtedly, the ability to design eLearning instructional materials has a significant impact on students' learning and achievement. Furthermore, the quality of design has direct, positive effects on the entire educational process. On the other hand, interactive digital content provides students with the opportunity to study anywhere and at any time, whether they choose to do so with their peers or individually. Those opportunities can take place in a traditional environment or other environments such as blended learning or distance education.

In order for the interactive digital content to be effective in the educational process in its various forms, there should be standards of design to ensure the success of the developed digital materials, their use and acceptance by the students. This is in addition to the positive results of such materials when used effectively regardless of the pattern of usage.

This book titled: “ADIC: Hands-on Guide for Designing and Developing Digital Interactive Content” explains in detail and in a practical way how to design and develop interactive digital content for training, teaching, and learning purposes

in accordance with Almekhlafi's (2020) Model for interactive digital content (ADIC).

Instructional material designers, curricula developers, teachers and students can use this model to design and create interactive digital content in a practical way that saves time and effort so that the various learning objectives can be achieved. They include training units, interactive lectures, computing curricula, individual learning programs, multimedia, the flipped classroom, blended learning materials, e-learning, open learning resources, e-learning courses, and general open e-courses (MOOCS).

This Model consists of four main stages: Planning, Design, Production and Evaluation. Every stage includes a number of detailed steps that enable the designer to work effectively.

If you are a teacher, trainer, material designer, curricula developer or student who is interested in developing and designing interactive digital content for the purpose of teaching and learning, this is the book that you are looking for. This book provides an excellent guide to help the designer to make optimal use of the Model.

This book consists of three parts. The first section focuses on the theoretical part to familiarize the designer with the basic concepts of design, while the second part focuses on hands-on activities dealing with the production of the project. The third part focuses on examples of programs, applications and services that can be used in the production of the interactive digital content.

Educational institutions, including universities and schools from kindergarten to high schools, can train students and teachers on using the Model effectively and how to produce effective interactive digital content.

With that in mind, I encourage you to benefit from this useful book that I expect to have a strong impact on the educational field. This book comes to cover an urgently needed skill that many material designers and curriculum developers find themselves lacking. Therefore, I strongly recommend it to readers especially the educational material designers, e-learning program designers, and trainers.

Dr Abdullatif Hussein Haider Al-Hakimi

Retired Professor of Education, Sana'a University, Yemen

Former Minister of Education, Yemen

Former Dean, College of Education, UAE University

August 2021

Acknowledgments

First and foremost, I would like to praise and thank Allah, the Almighty, who has granted countless blessings, continuous help, and consistent support.

Second, I would also like to express my sincere appreciation to several people who helped me directly or indirectly in the preparation of this book. This help could include encouragement and emotional support, formatting, searching for related apps and software, searching for tutorials, editing, translation, and feedback on the content of the book. To name a few:

- Dr. Mohamed Abduh Almekhlafi
- Dr Aziz Saleh Al-Doies
- Dr. Ali Sharaf Al Musawi
- Dr Sherin Mahmoud Saeed Alamassi
- Mrs. Sohani Mehzabin Prova
- Mr. Ibrahim Al-Qratli
- Mr. Wafeeq Al-Mileh
- Ms. Ariane Laurent-Smith

Finally, my words of gratitude and appreciation are extended to every instructional designer, curriculum developer, teacher and trainer who may benefit from this book and share it with colleagues and friends.

Author,

Dr. Abdurrahman Ghaleb Almekhlafi

Dedication

To

The origin of my life and the source of my existence

My Mother and my Father

May Allah protect and bless them, and grant them health

To

My life companion and my partner in all my achievements

My beloved wife

Hayat Mustafa Naji

To

The flowers of life ... Hope for a bright future

My children

Hussam, Salma, Shaima, Tasneem and Hamad



“Design is everywhere. From the dress you’re wearing to the smartphone you’re holding, it’s design.”

Samadara Ginige, Designer and Developer

“If we want users to like our software, we should design it to behave like a likeable person: respectful, generous and helpful.”

Alan Cooper, Software Designer and Programmer

If you think good design is expensive, you should look at the cost of bad design.”

Dr. Ralf Speth, CEO of Jaguar Land Rover from 2010 to 2020



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Introduction

Praise be to the Almighty Allah and prayers and peace be upon our Prophet Mohammed and upon his family, his companions and those who follow suit till the Day of Judgment.

For a long time, the educational process has been based by and large on the direct and speedy mechanisms of communication that takes place between the teacher and their students. This results in immediate and fruitful results. Undoubtedly, the recent developments that have taken place in communication technology have helped the educational process by improving its feasibility and the chances of achieving both short-term and long-term strategic goals and objectives. One such development is the use of the interactive digital technologies which has become very important in our era. They shorten time and distance. They also help to overcome the obstacles and difficulties that prevent us from achieving our teaching and learning objectives in the traditional environment.

The spread of COVID 19 has affected our daily life in this world. The teaching and learning process in particular was completely paralyzed in many countries. Schools closed across the world and teaching moved online or at a distance. This necessitated that several educational authorities in different parts of the world to use e-learning, with the use of interactive digital technologies replacing the face-to-face sessions and achieve the objectives of the educational process.

This situation made it mandatory for people concerned in the field of education to start looking for effective means for delivering education electronically. They started developing programs, applications, and services to deliver interactive educational con-

tent. Thus, they have prepared theoretical and practical guides in designing and developing the educational materials as per the new mechanisms of e-learning.

This book is a fruit of the previous efforts in this field. This book explains Almekhlafi's (2020) model for interactive digital content. It is a model that enables the people in the field of education to use and implement modern technologies optimally. The model also aims to help in the planning, design, implementation and evaluation of interactive digital materials.

To make this book as practical as possible to help the designers of interactive digital content, it is divided into three chapters. The first chapter presents the theoretical framework while the second chapter focuses on the explanation of the model. The third chapter focuses on the practical activities as well as examples of the programs, applications and services that can be used in the production of the educational materials.

In the preparation of the contents of this book, the following steps have been undertaken:

1. Selecting only examples of the useful programs, applications and services that can be used during the different stages of the model. As the scope of the book does not allow the explanation of these programs and application in detail, some recommendations of useful resources have been presented. Those resources are in the form of links that include video clips or educational websites that helps the user learn and use such programs and applications.
2. Focusing on good applications, programs and services that are well-known, have an excellent reputation and gained prestige through serving the field of education.
3. Such programs, applications and services should be stable

and effective technically. They should be free from any technical problems that may render them ineffective and invalid.

4. The photos of the programs, applications and services that were used in the book have been attributed to preserve the rights of their owners. If any photo or image of such programs and applications is not attributed, then that is an unintended mistake and I apologize for that. However, in the case that the images are taken from open uploading apps on the App Store, Google Play or the websites of the companies that own such programs and applications, the author of this book declares that they belong to their owners.

To effectively use this book, the user should:

1. Read the theoretical part and have sufficient information about designing and its different steps and aspects.
2. Plan the project according to the steps of the model. It is worth noting that the model is flexible and sometimes it is not necessary to follow the detailed steps. Some of them can be applied in the case of implementing very large projects such as preparing a curriculum for any educational stage.
3. Select the applications and programs that will be used in the design keeping in mind that it is not necessary that the program or the application is one of those recommended in the book. The criteria for selecting them should include the user's familiarity with such programs and applications as well as the ease of using them and being comfortable in using them.
4. Complete the practical activities included in the book either individually or in groups.
5. Benefit from the various video clips online to learn the usage of the applications, programs and services that will be

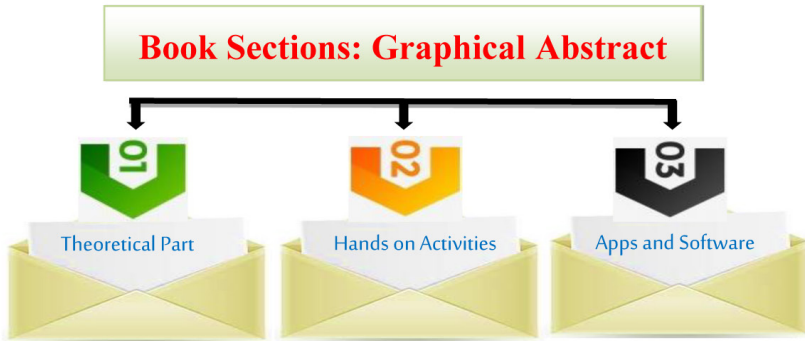
used during the planning, designing or developing stages of the project.

6. Recognize the important fact that the model should be applied in a circular way so that the evaluation and the development should be carried out continuously and repeatedly.

Finally, this work is the nectar of some practical and training experiences as well as efforts that aim at presenting the best in the field. The door is open for any ideas, comments or suggestions that may be used for the improvement and betterment of this work.

Author,

Dr Abdulrahman Ghalib Al-Mekhlafi



Almekhlafi Digital Interactive Content Model - ADIC

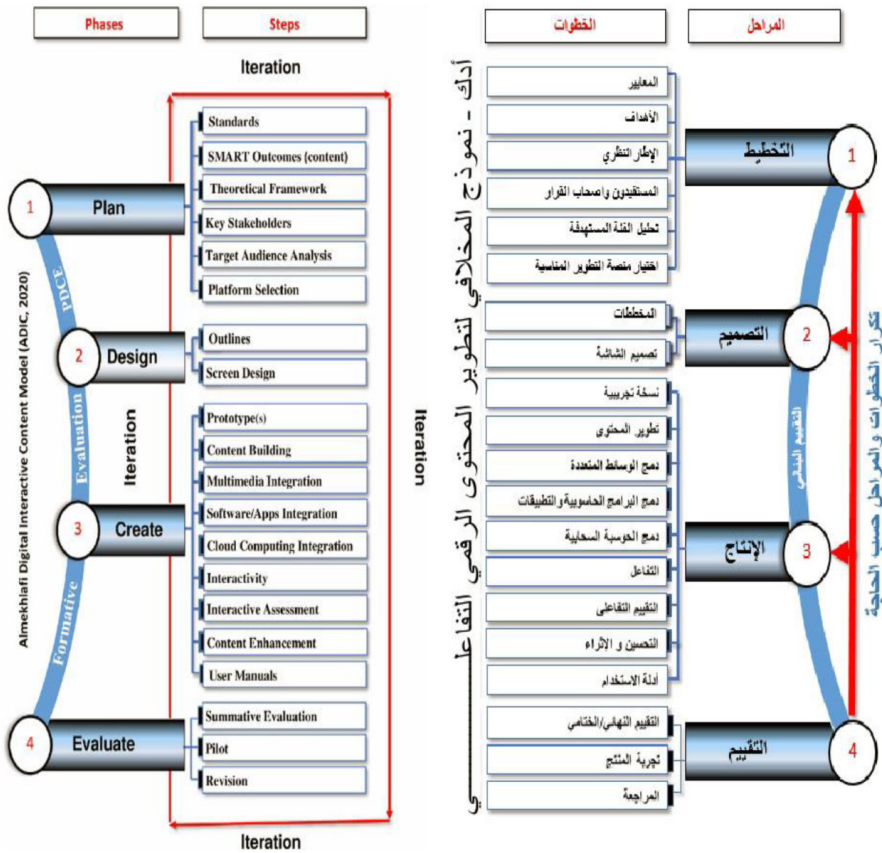


Figure 1 ADIC model

PART ONE

THE THEORY

- **Chapter One:**
The Theoretical Framework
- **Chapter Two:**
ADIC Model



The image features a hand in a blue shirt sleeve typing on a silver laptop keyboard. The background is a blurred office setting with a network of white lines and circles overlaid. A large green vertical bar is on the left side, containing the chapter title. Below the green bar is a dark blue horizontal bar with the subtitle. The page number '25' is centered at the bottom.

CHAPTER ONE

Theoretical Framework

Introduction

The design and creation of digital interactive content for teaching and learning are gaining increasing importance. As this technology advances, the need to cope with everyday demands necessitates that teachers and content developers accommodate their students in this aspect. Interactive digital content provides opportunities for students to study anywhere and at any time, with classmates or independently, and within conventional or blended teaching and learning environments.

Definition of Interactive Digital Content

Herman (2005: as cited in Farahat (2017) defines interactive digital content. He states that it is “Not an entity that includes information only, but an entity that presents a specific educational value. It may include multimedia such as simulations, video clips, sound effects, graphs and animations provided that there is an interaction between the learner and the content of the educational materials. It should allow meaningful communication in which the learner reflects his/her knowledge and past experiences”.

The interactive digital content can also be defined according to the Sharable Content Object Referent Model (SCORM) as “Converting the traditional materials into interactive digital materials that allow the learner to recall the information that he/she has learned and to do the activities, homework and skills through an interactive digital environment through interactive multimedia such as texts, images, animations, sound and video clips, tables, graphs, charts, infographics, etc.”.

In order to make the digital content more effective in the teaching and learning process in its various forms, several criteria as well as the basics of design should be observed. This includes

the successful criteria for integrating technology. Thus, observing these criteria will lead to the success of the developed interactive digital materials as well as their widespread adoption and acceptance by the targeted group. This will lead to positive results regarding effective usage regardless of the pattern of use.

Examples of Instructional Design Models

Instructional developers require instructional design models to produce well-structured content. Thus far, numerous such models have been developed. The most widely used model is that proposed by Dick and Carey (1996), and the successive approximation model (SAM) is the most recent. Other well-known models include ADDIE, ARCS, ASSURE, four-component instructional design (4C-ID), and backward design models. All these models have been used for different contexts and purposes to develop instructional content. These models have been extensively studied, implemented, evaluated, analyzed, and compared against each other.

Instructional design has gained attention worldwide. Pappas (2016) outlined 10 instructional design elements that should be considered when designing eLearning courses.

1. Clear learning goals and objectives
2. Intuitive eLearning Navigation
3. Visual Stimuli
4. Relevant Multimedia
5. Real World eLearning Activities
6. eLearning Assessments
7. Feedback System
8. Supplemental Links to Online Resources
9. Bite-Sized eLearning Content
10. Hands-On Demos

Many researchers have authored books and published research

articles investigating, analyzing, implementing, and explaining these models in detail, including Dick and Reiser (1989); Dick (1996); Dick and Carey (1996); Dick et al. (2001); Chang (2006); Dick et al. (2015); and Rothwell et al. (2015).

Dick-and-Carey Instructional Design Model

Regarding the Dick-and-Carey instructional design model (Figure 2), its first version was developed in 1968 at Florida State University. Dick (1996) indicated that four editions of the model were released (1978, 1985, 1990, and 1996) under the title “The Systematic Design of Instruction.” According to Chang (2006), the Dick-and-Carey model uses the system approach for designing effective instructions.

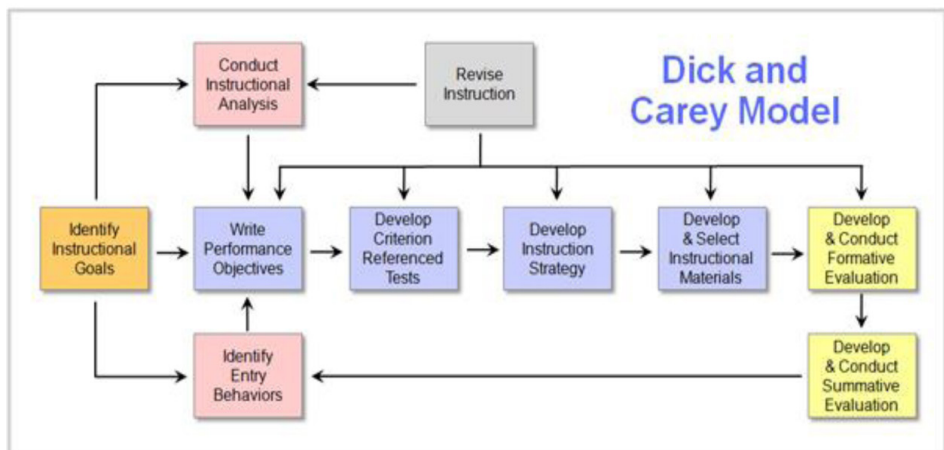


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Figure 2. Representation of the Dick-and-Carey model

ADDIE Model

Another well-documented model is the ADDIE model (Figures 3 and 4), an instructional system design framework that has been used by many designers and course developers. This model comprises five phases that lead to the building of training and development.

Branch (2009) provided an overview of the ADDIE model, stating that the primary rationale for the study was to respond to the need for an instruction design primer that addresses the current proliferation of complex educational development models, particularly nonconventional approaches to learning, multimedia development, and online learning environments.

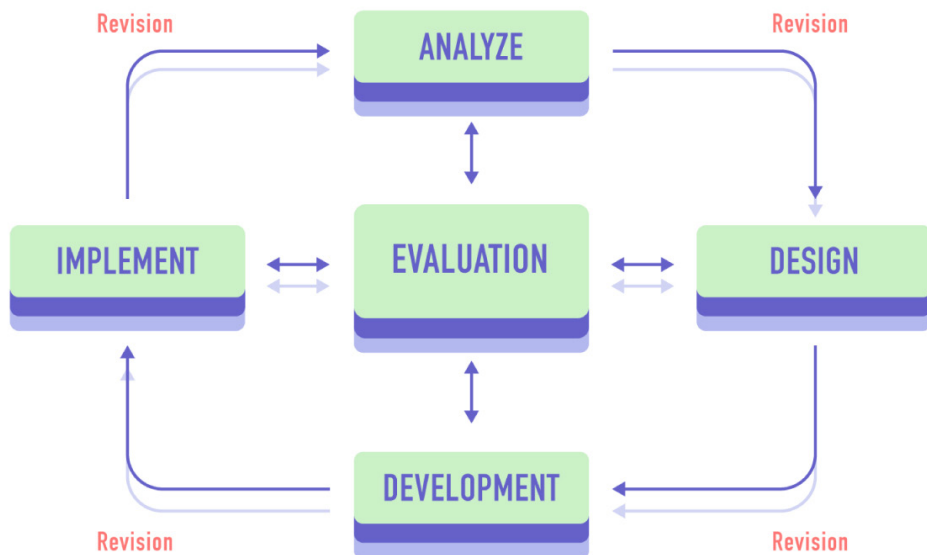


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Figure 3. A Representation of the ADDIE model

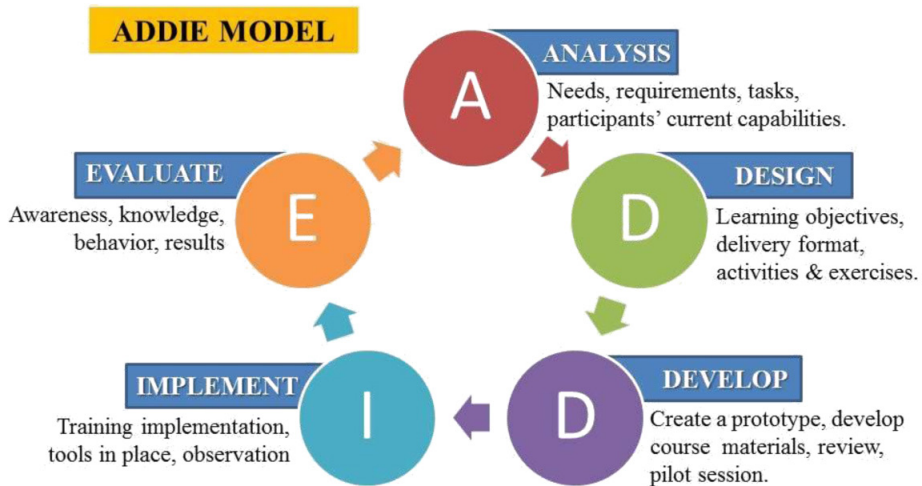


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Figure 4. A Representation of the ADDIE model

ARCS Model

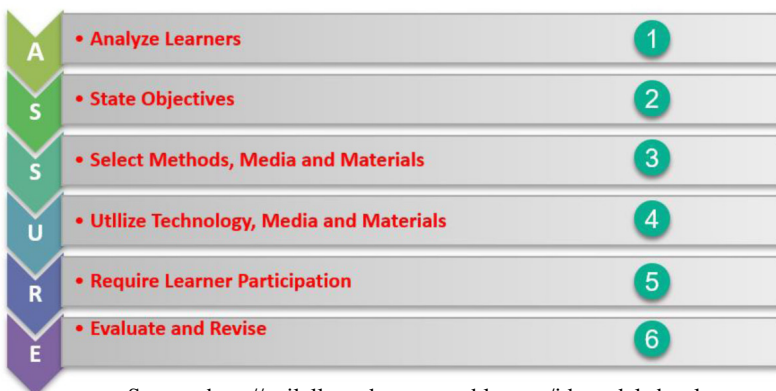
Similarly, the ARCS model (Figure 5) was developed by John Keller and introduced to the public in 1979. The main concept of the model is to break the learner's motivation into four different components – attention, relevance, confidence, and satisfaction – that constitute the model. According to the developer, the model provides strategies for instructors to incorporate into their courses, for encouraging learner motivation. The model has been widely applied and has become the focus of research into learner motivation (Francom and Reeves, 2010).



Figure 5. Representation of the ARCS model

ASSURE Model

The ASSURE model is another instructional design model for developing technology-enhanced lessons (Heinich et al., 1999). Each letter in the acronym ASSURE represents the steps that the model constitutes, as shown in Figure 6. The authors argued that when implementing the ASSURE model, teachers would have a curriculum to teach in the classroom, with specific objectives that will become the focus of individual lessons.

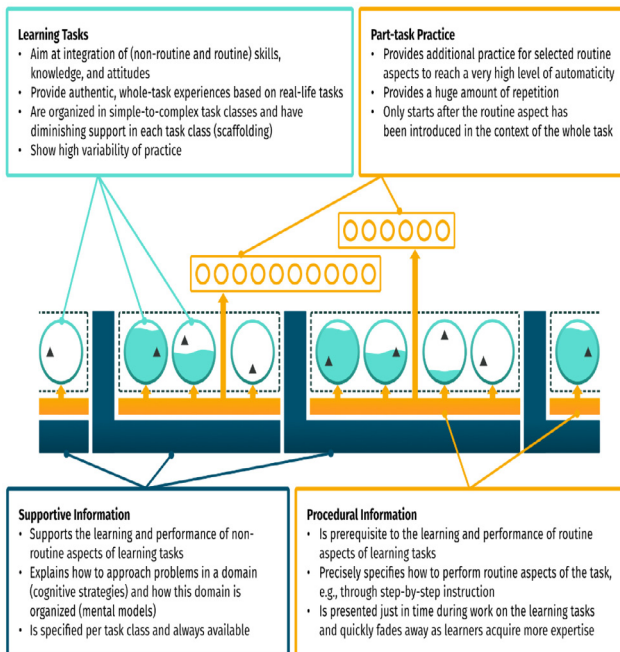


Source: <http://gailalleynebayne.weebly.com/id-models.html>

Figure 6. A Representation of the ASSURE model

4C-ID Model

Following the same path, the 4C-ID model, represented in Figure 7 and developed by Van Merriënboer et al. (2002), focuses on four components: (1) Learning tasks, (2) supportive information, (3) procedural information, and (4) part-task practice. These four tasks are ordered according to their difficulty level. According to Van Merriënboer et al. (2002), the model addresses at least three deficits in the previous instructional design models. The model (1) focuses on the integration and co-ordinated performance of task-specific constituent skills rather than knowledge types, (2) makes a critical distinction between supportive information and just-in-time information, and (3) recommends the use of a mixture of part- or whole-task practice, which is not provided by conventional models (Van Merriënboer, 1997; Merrill, 2002).

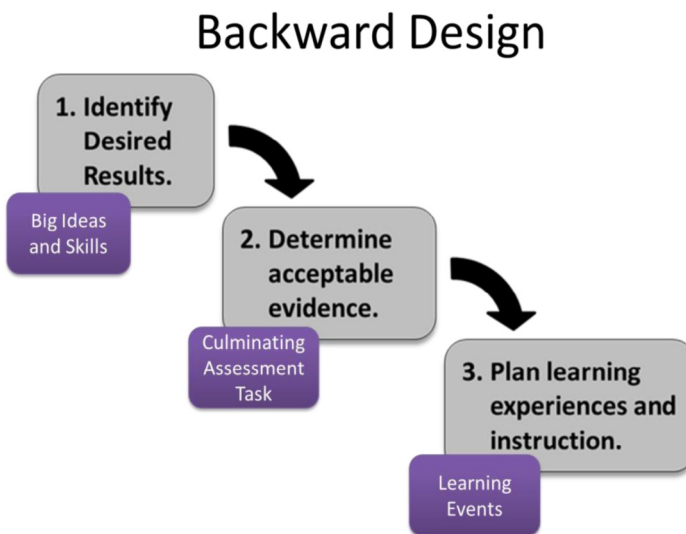


Source: <https://www.4cid.org/>

Figure 7. Representation of the 4C-ID model

The Backward Design Model

The backward design model (Figure 8) is another instructional model that has been used by designers (Wiggins and McTighe, 1998, 2005). The steps and application of this model have been extensively explained in two editions of the book *Understanding by Design*, published in 1998 and 2005.



Wiggins, G. P., & McTighe, J. (2005). *Understanding by design*. Association for Supervision & Curriculum Development.

Figure 8. A Representation of the Backward Design model

Source: Wiggins and McTighe (2005)

Kemp Model

Many other researchers have focused on the use of the Kemp design model (Figure 9), for example, Akbulut (2007), Morrison (2010), and Kurt (2016). This model provides the instructional design of a nonlinear structure and adopts a circular structure rather than a linear structure (Akbulut, 2007).

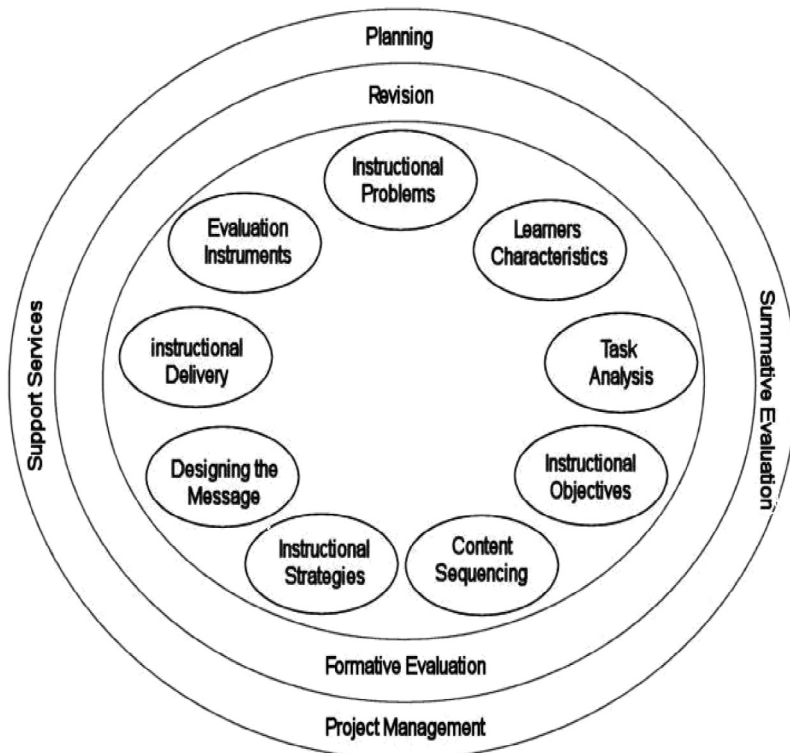
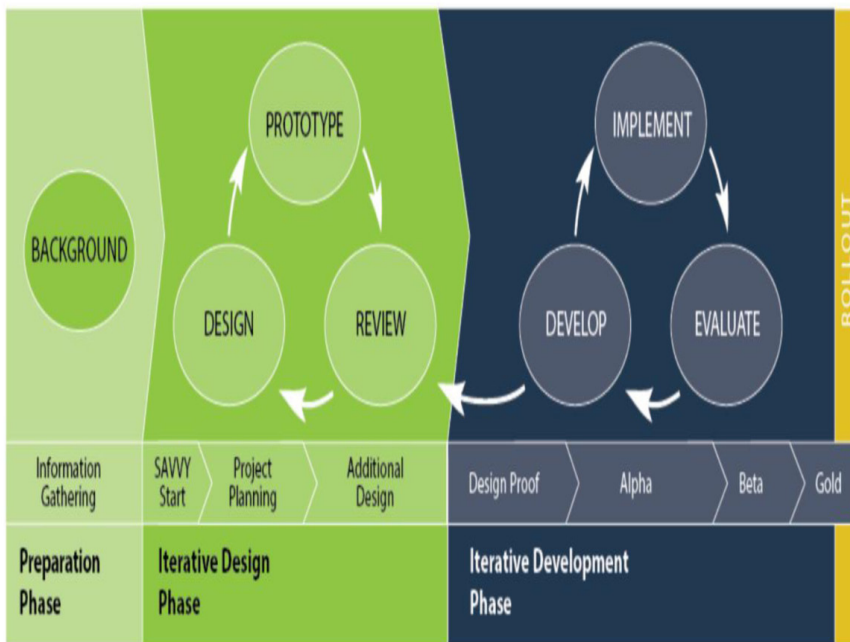


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Figure 9. A Representation of the KEMP model

SAM

SAM is the most recent model to gain the attention of designers and curriculum developers. This model, as represented in Figure 10, was created by Allen Interactions. The model provides designers with an instructional design approach consisting of repeated small steps or iterations intended to address some of the most common instructional design components (Crowe, 2019).



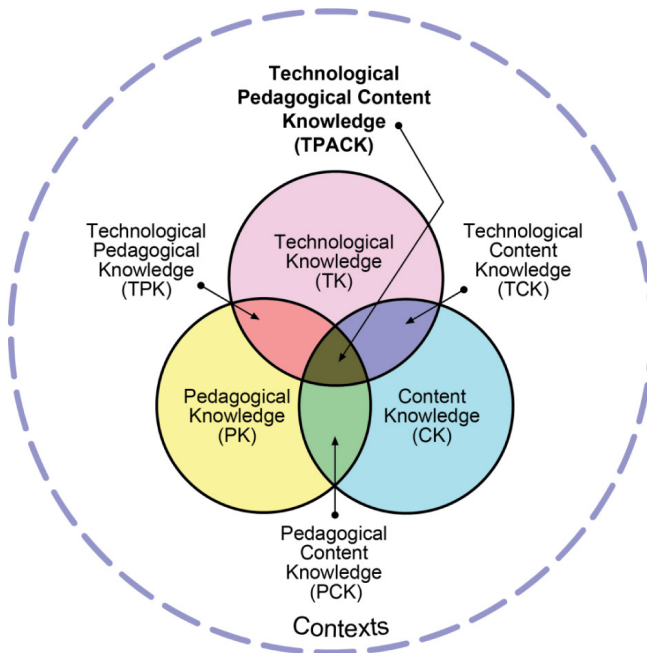
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Source: <https://www.alleninteractions.com/services/custom-learning/sam/elearning-development>

Figure 10. A Representation of the SAM model

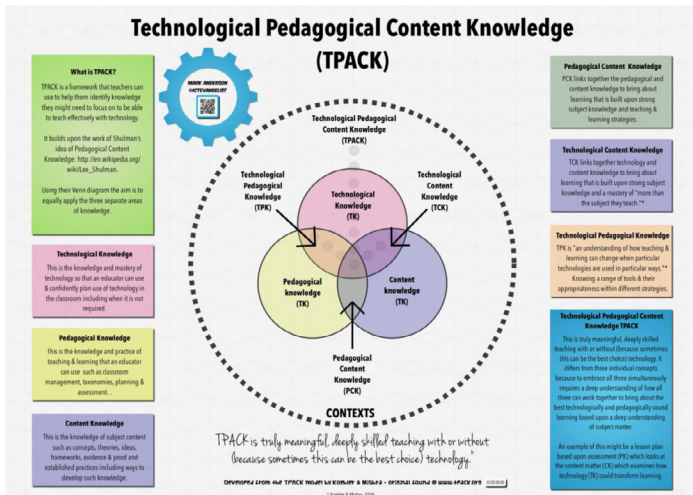
The TPACK Model

The TPACK model is a theoretical framework for teaching and technological knowledge that the teacher must have so that they can be successful in blending technology into their work. Figure (11) below illustrates the three factors that need to be possessed by the teachers and the faculty members at universities. These three factors include knowledge of the material content that will be taught, knowledge of the suitable methods of teaching, and knowledge of the technologies that will ease and facilitate the teaching of the materials and lead to achieve the planned objectives. These factors form the required conceptual framework to blend technologies into the learning process. Figure (12) illustrates that.



This image is courtesy of <http://tpack.org> with Creative Commons license.

Figure 11. A Representation of the TPACK model



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Figure 12. A Representation of the TPACK model

SMAR Model

SMAR model was presented by Ruben Puentedura (2015). It is a model that can be used by the teacher to evaluate blending the teaching and learning technologies in or out of their classes by knowing the stage that the teacher is going through. The Model presents the four progressive stages as shown in the figure 13 and 14 below.

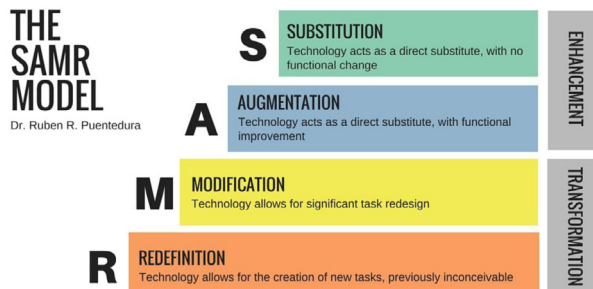


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Figure 13. A Representation of the SMAR model

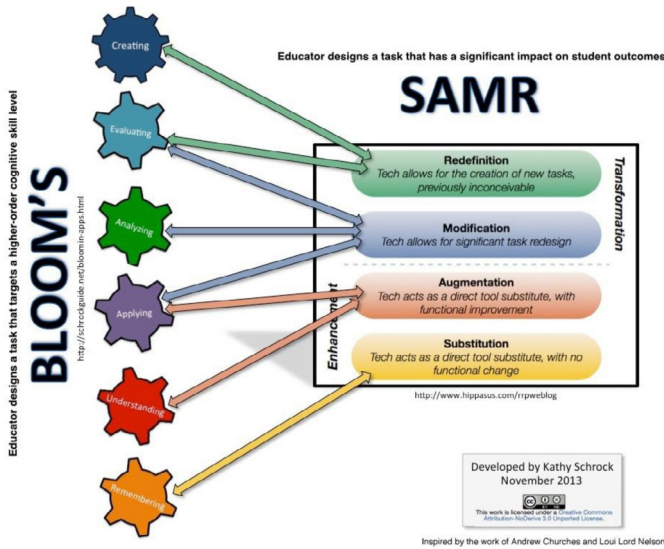


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Figure 14. A representation of SMAR model

It might be worth noting that there are other models related to the design of educational materials which are not mentioned in this book as the general goal of the book is to focus on the ADIC model for designing interactive digital content. The model is considered one of the newest and most innovative models for digital learning. The following chapter will present the model in more detail.

“
Design is not just what it looks like
& feels like. Design is how it works.
steve jobs
”

Requirements for the Successful and Effective Integration of Technology into Education

In order to achieve the successful integration of technologies either inside or outside the class, during the process of developing digital materials to be used in self-learning, blended learning or distance education, there are some requirements that should be taken into consideration when integrating technology. Therefore, the International Society for Technology in Education (ISTE) has introduced several basic conditions that should be fulfilled to achieve the successful integration of technology into education. These conditions are available online through the following link: <http://www.iste.org/standards/essential-conditions>

ISTE introduced 14 essential conditions for technology integration:

1. **Shared Vision** -Proactive leadership in developing a shared vision for educational technology among all education stakeholders, including teachers and support staff, school and district administrators, teacher educators, students, parents and the community. - Proactive leadership in developing a shared vision for educational technology among all education stakeholders, including teachers and support staff, school and district administrators, teacher educators, students, parents and the community.

2. [Empowered Leaders](#) - Stakeholders at every level empowered to be leaders in effecting change.
3. [Implementation Planning](#) -A systematic plan with a shared vision for school effectiveness and student learning through the infusion of information and communication technology (ICT) and digital learning resources. - A systematic plan with a shared vision for school effectiveness and student learning through the infusion of information and communication technology (IT) and digital learning resources.
4. [Consistent and Adequate Funding](#) - Ongoing funding to support technology infrastructure, personnel, digital resources and staff development.
5. [Equitable Access](#) -Robust and reliable connectivity and access to current and emerging technologies and digital resources, with connectivity for all students, including those with special needs, teachers, staff and school leaders. - Robust and reliable connectivity and access to current and emerging technologies and digital resources, with connectivity for all students, including those with special needs, teachers, staff and school leaders.
6. [Skilled Personnel](#) - Educators, support staff and other leaders skilled in the selection and effective use of appropriate ICT resources. - Educators, support staff and other leaders skilled in the selection and effective use of appropriate IT resources.
7. [Ongoing Professional Learning](#) - Technology-related professional learning plans and opportunities with dedicated time to practice and share ideas.
8. [Technical Support](#) - Consistent and reliable assistance for maintaining, renewing and using ICT and digital learning resources.
9. [Curriculum Framework](#) - Content standards and related digital curriculum resources that are aligned with and support digital age learning and work

10. [Student-Centered Learning](#) - Planning, teaching and assessment centers around the needs and abilities of students
11. [Assessment and Evaluation](#) - Continuous assessment of teaching, learning and leadership and evaluation of the use of ICT and digital resources - Continuous assessment of teaching, learning and leadership and evaluation of the use of IT and digital resources
12. [Engaged Communities](#) - Partnerships and collaboration within communities to support and fund the use of ICT and digital learning resources - Partnerships and collaboration within communities to support and fund the use of IT and digital learning resources
13. [Support Policies](#) - Policies, financial plans, accountability measures and incentive structures to support the use of ICT and other digital resources for learning and district/school operations - Policies, financial plans, accountability measures and incentive structures to support the use of IT and other digital resources for learning and district/school operations
14. [Supportive External Context](#) - Policies and initiatives at the national, regional, and local levels support schools and teacher preparation programs in the effective implementation of technology for achieving curriculum and learning technology standards - Policies and initiatives at the national, regional and local levels to support schools and teacher preparation programs in the effective implementation of technology for achieving curriculum and learning technology standards

You may use the following rubrics available from <https://electronicportfolios.org/reflect/EssenCondRubric.pdf> to evaluate the application of the essential conditions in your context. For any possible broken hyperlinks, the rubrics are attached as an appendix. Please keep in mind that the copyright of these rubrics is attributed to the creator of these rubrics.



CHAPTER TWO

ADIC Model for Digital Interactive Content Development

Introduction

Almekhlafi's (2020) model (ADIC) for digital interactive content design and development is considered as a guide that can be used in the production of interactive content for any subject. It is also considered as a framework for developing content.

The model consists of four main stages: planning, design, production and evaluation. Each stage includes steps to follow. The validity and reliability of the model have been tested in real situations. It was also successfully piloted with a sample of 28 faculty members and 81 university students.

The results of the pilot study supported the use of the model in designing and creating interactive digital content. The research paper related to the model that was published in the International Journal of Science Education has recommended that the educational institutions and schools (from nursery till high school) should train students, teachers and faculty members how to use the model effectively in order to produce useful and trusted interactive digital educational materials.

For more details about the model's research paper, you can use the following links:

- <http://www.icaseonline.net/journal/index.php/sei/article/view/187>

- <https://doi.org/10.33828/sei.v31.i2.1>

In this chapter, the four stages of the model and the steps of every stage will be presented as they appear in Almekhlafi's (2020) research paper, which can be read using the above link. For practicing the model, a number of activities have been prepared. They are included in the coming sections.

ADIC Model – Description and Definition

ADIC is a guide for designing and developing digital interactive content for training, teaching, and learning purposes. Instructional designers, curriculum developers, teachers, and

students can use the model to design and create interactive digital content for different purposes, including content for K-12 schools, universities, and training institutions.

“
Design is not just what it looks like & feels like. Design is how it works.
Steve Jobs
”

Model Uses

The model is generic and sufficiently flexible to be adapted for designing and developing a variety of digital interactive content such as training modules, interactive lectures, computerized curriculum, independent learning/tutorials, interactive multimedia, flipped classroom, blended learning materials, educational websites, open educational resources, eLearning courses, and massive open online courses (MOOCs). Depending on the type of project to be developed, some steps might be excluded and skipped without jeopardizing the product quality.

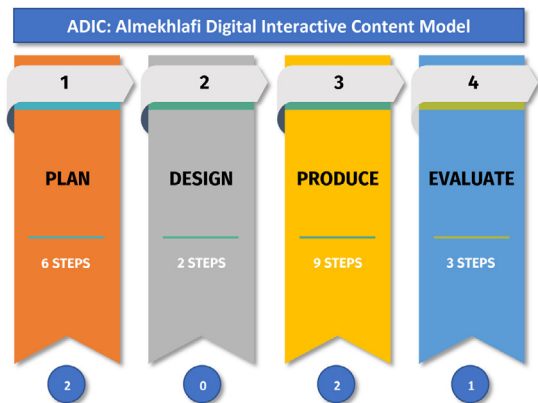


Figure 15. ADIC Phases and Steps

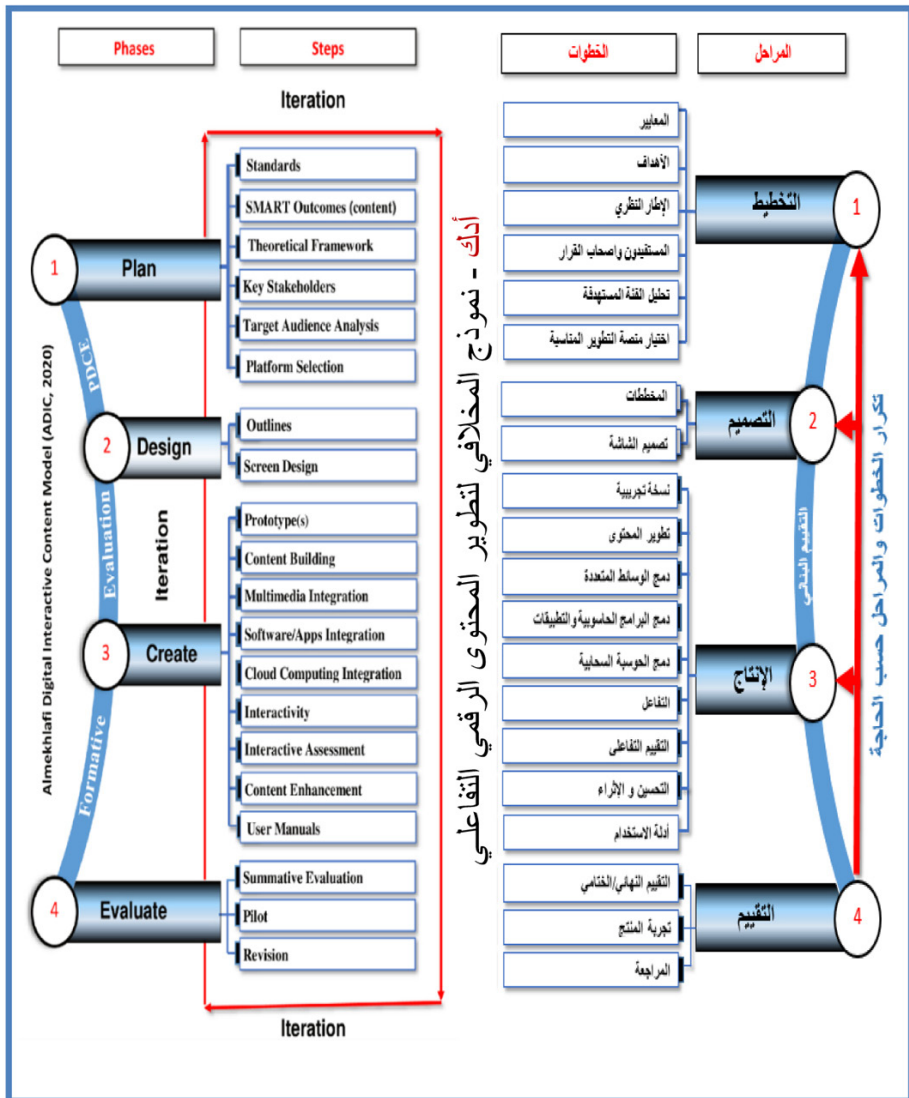


Figure 16. A Representation of ADIC model components.

Planning Phase

Planning is crucial for the success of any project. If planning is performed inappropriately, i.e., if adequate time and effort are not expended during the planning phase, the quality of the resulting outcome will be subpar. This phase yields the steps required to achieve an effective, feasible, and worthwhile project. Figure 17 presents the steps of the planning phase for the ADIC model.

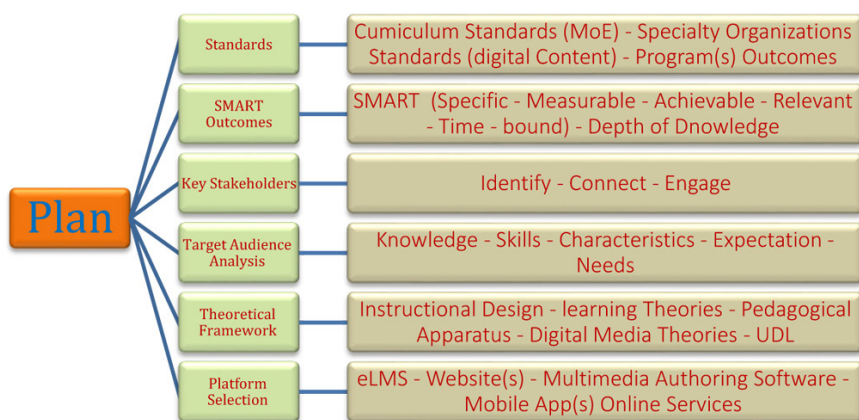


Figure 17. A Representation of ADIC model Planning Phase

Each stage of planning in the ADIC model consists of several steps. These steps will be explained according to their order in the model. It is worth noting that before planning for the project, there should be a clear vision for the product that will be developed and more specifically in the following two points:

1. The title of the project must be clear.
2. Clarity in the content of the project. For example, computing curricula, training unit, interactive lecture, school project, interactive website, interactive material for the flipped classroom, educational course for distance education, etc.



Our goals can only be reached through a vehicle of a plan, in which we must fervently believe, and upon which we must vigorously act. There is no other route to success.

Pablo Picasso



First: Standards

According to the ADIC model, planning starts with aligning the standards with the project to be developed. However, this alignment is more applicable to big projects, such as computerized curriculum, in which a connection to the Ministry of Education/Department of Education and specialty organization standards are necessary. The developer should start investigating the standards in the field of content and draw project outcomes based on these standards.

Standards usually constitute the first steps for planning any traditional curriculum or digital content. These standards are very important as they constitute the first step that leads to the planned objectives of the developed materials. Some of these standards are issued by Curricula Development Units in the Ministries of Education and some are issued by specialized organizations such as the organizations of technologies, science, mathematics, etc. In addition to these organizations, there are several specific programs that usually create their own standards which must be taken into consideration when selecting or designing curriculum.

You can find links to some important professional organizations in the field of education below.

- <https://jobstars.com/education-professional-associations-organizations/>
- [National Association for the Education of Young Children \(NAEYC\)](#)
- [National Council of Teachers of Mathematics \(NCTM\)](#)
- [Association for Educational Communications and Technology \(AECT\)](#)
- [International Society for Technology in Education](#)

Some of these organizations are connected to technology, such as the [International Society for Technology in Education](#), which is important for the scope of this book. The standards they produce are related to the technical content whether they refer to interactive digital content or other technical topics that can be blended into the educational process. The designer must consider such standards when planning and designing any interactive digital content. This organization oversees issuing technology standards for the educational sector for students, teachers, and officials.

It is worth noting that the National Center for E-learning (2020) in Saudi Arabia has developed some useful standards. The center has also developed standards for higher education and general education as well as training. For more detail about these standards, visit the NELC website [Online Learning Standards - nelc.gov.sa](https://www.nelc.gov.sa)

Activity 1:

Planning – Project Standards



A goal without a plan is only
a desire.

Pablo Picasso



Second: Smart Outcomes

Writing worthwhile measurable outcomes leads to a well-designed and worthwhile project. The developer should initialize the project with the outcomes they plan to achieve. These outcomes should contain five features (SMART) that lead to the success of the project: (1) Specific addressing of the exact issue that must be achieved, (2) measurable and assessable, (3) achievable at a reasonable effort and time, (4) relevant to the field they address, and (5) time-bound to ensure that they can be achieved at a specified time. You may refer to the interactive pedagogy wheel for designing outcomes.

<https://designingoutcomes.com/english-speaking-world-v5-0/>

<http://communities.nasponline.org/blogs/dan-pezzulo/2015/06/04/the-pedagogy-wheel>

Activity 2:

Planning – Objectives

Third: Theoretical Framework

The selection of a framework before developing the project is highly important to ensure the success of the project as it enables the developer to select appropriate learning strategies and activities. This framework could be a learning theory, an instructional design model, a teaching pedagogy, and/or a digital media theory.



Figure 18. Implications of learning theories on Instructional Design

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Activity 3: Planning – A Project Framework

Fourth: Key Stakeholders

Forming a connection with key stakeholders is crucial for the success of the project. As stakeholders include individuals, organizations, and institutions that can be affected by the outcomes of the project, it is important to cooperate with them and engage them in the process whenever possible. Furthermore, ensuring the satisfaction of stakeholders and their willingness to collaborate and participate in the project is essential. This makes it possible to proceed with the project with confidence and certainty.

Activity 4:

Planning – Stakeholders

Fifth: Target Audience Analysis

The developer of any digital curriculum or content must analyze the target audience who will benefit from the product. The target audience could include students, teachers, trainees, or any other educators. Nevertheless, for all cases, knowing different characteristics of the target audience are considerably critical to ensure that the project is well-received.

Al Musawi (2011) pointed out that designers should investigate the learners' characteristics and needs. According to researchers, designers need to do an analysis of their audience to know several characteristics such as demographic information, prior knowledge of the topic, and anxiety level. In addition, designers need to identify the ethical issues involved in the delivery processes such as equal opportunity, cultural diversity, and accessibility.

Activity 5:

Planning – Characteristics of the Target Group

Sixth: Platform Selection

The final step in this phase is selecting the platform that will be used to develop the interactive content. This platform could be a multimedia authoring software, mobile application, eLearning management system, or internet services.

Activity 6:

Planning – Development Platforms

Designing Phase

The second phase in this model is the design phase. After completing all the steps of the planning phase, we initiate the design phase, which consists of two steps (Figure 19): outlining and screen design.

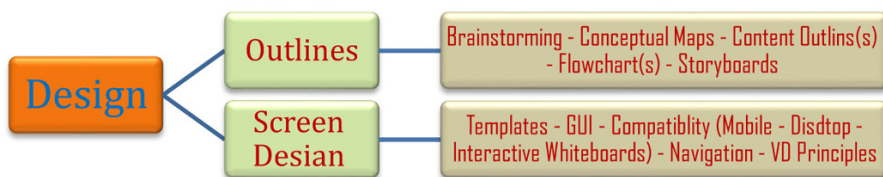


Figure 19. A Representation of ADIC Design Phase

First: Outlines

The first step involves preparing an outline of the project, starting with brainstorming, which helps to generate ideas that enrich content. This is followed by concept mapping, content outline, flowcharting, and finally ending with storyboards.

A well-known fact is that the first step in planning for any project starts with the process of brainstorming which is cultivating ideas related to the project without any restrictions. These initial

ideas help to create conceptual maps that, in turn, help in the real planning for the content to be developed. Brainstorming is considered an ideal way to elicit ideas about the subject when planning in the case that the designer later reaches suffers from a scarcity of ideas which will lead to developing the project in an effective way. After brainstorming, planners can draw conceptual maps, plan content, prepare flowcharts and finally build story charts.

The following website contains several effective technologies to use in brainstorming whether individually or in groups. It also indicates the strengths and weaknesses of each method. It helps to link the technologies with each other so that the reader will find the method that suits them.

- <https://business.tutsplus.com/series/the-ultimate-guide-to-better-brainstorming-techniques--cms-1076>

Activity 7:

Design – Brainstorming and Conceptual Maps

Activity 8:

Design – Flowcharts

Activity 9:

Design – Content Planning

Activity 10:

Design – Storyboards

Second: Screen Design / User Interface

The second step in the design phase is screen design. In this step, the developer must consider a number of issues related to screen design, such as the compatibility of the developed product with different devices. In addition, a navigation system should be designed to make it easier to use and navigate the product.

The application of visual design principles should be considered at this step. Al Musawi (2011) suggested that designers should make sure of the usability of interface design to facilitate the learner's interactivity through the user interface. Designers should make sure the interface can support and ease navigation during the learning process.

To sum up, there are important elements that should be considered when designing the user interface:

1. The icons and symbols should be clear and meaningful to the user.
2. The used colors should be meaningful and help the user understand them clearly and properly.
3. The used fonts including the shapes of letters, size and color should convey clear meaning to the user as planned by the designer.

Activity 11:

Design – Ready-made Templates

Activity 12:

Design – Designing the User Interface

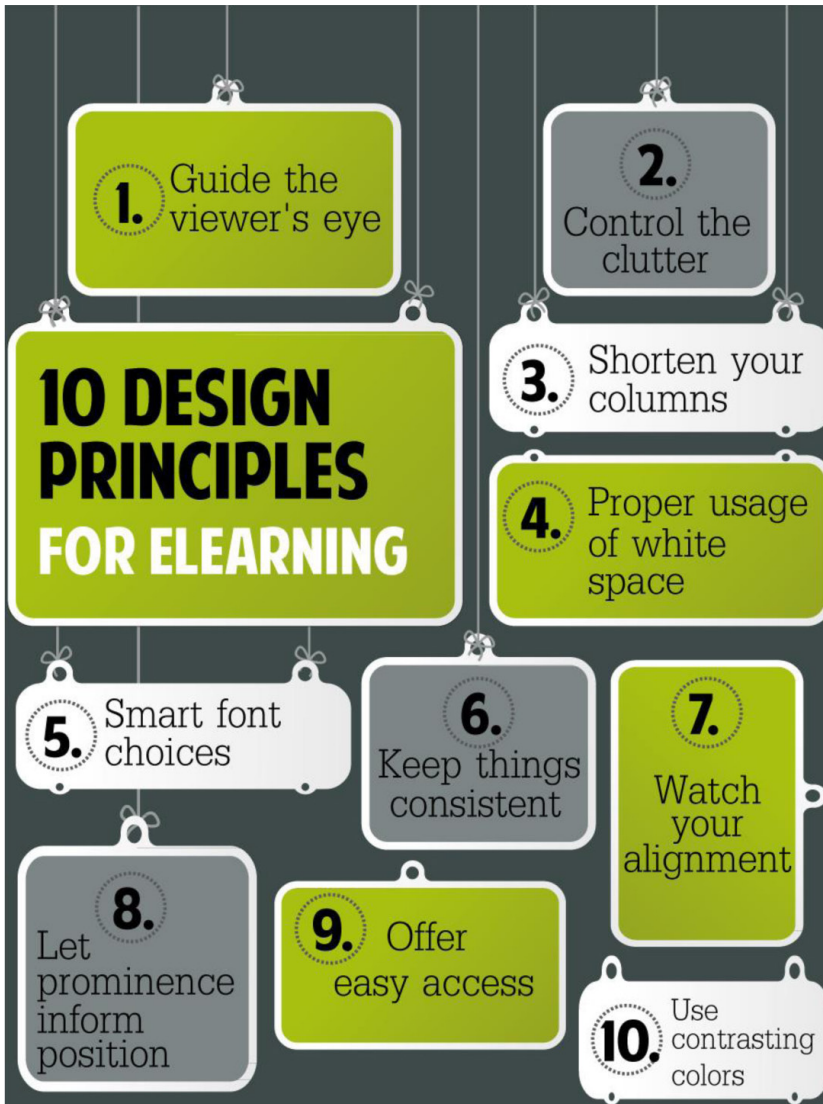


Figure Source: Microsoft Bing. Licensed under Creative Commons as free to use and share.

Figure 20. A Representation of eLearning Design-Principles that can be implemented for

principles of visual Design and User Interface

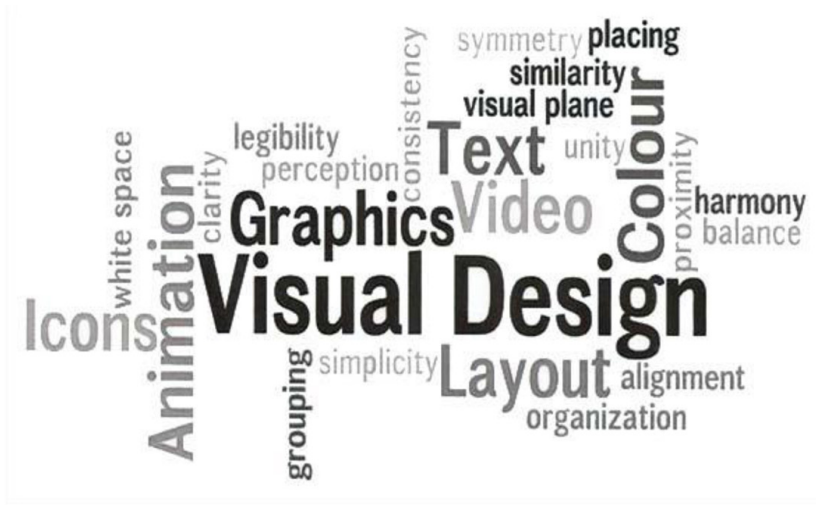


Figure 21. A Representation of the Elements of Design

Al-Mekhlafi (2004) states several principles that should be considered when designing any digital materials or traditional materials. They are as follows:

1. Delivering information quickly and with less effort.
2. Achieving readability.
3. Reducing the effort of the learner and helping them to reach information quickly and effortlessly.
4. Increasing the interaction between the learner and the materials.
5. Drawing the learner's attention to the important elements of the materials.
6. Achieving suspense in order to motivate the learner.
7. Observing the cognitive principles for learning which include:
 - The perception of human beings is relative and not absolute. That is, they perceive things by comparing them with other things such as the comparison of a known thing with an unknown one.

- Human perception is selective. Therefore, details that distract attention from the main idea should be eliminated.
- Human perception is organized. Therefore, the designer should pay attention to:
 - a. Numbering the steps in a sequence that helps perception and remembering.
 - b. Presenting the steps of any complex process in a logical sequence.

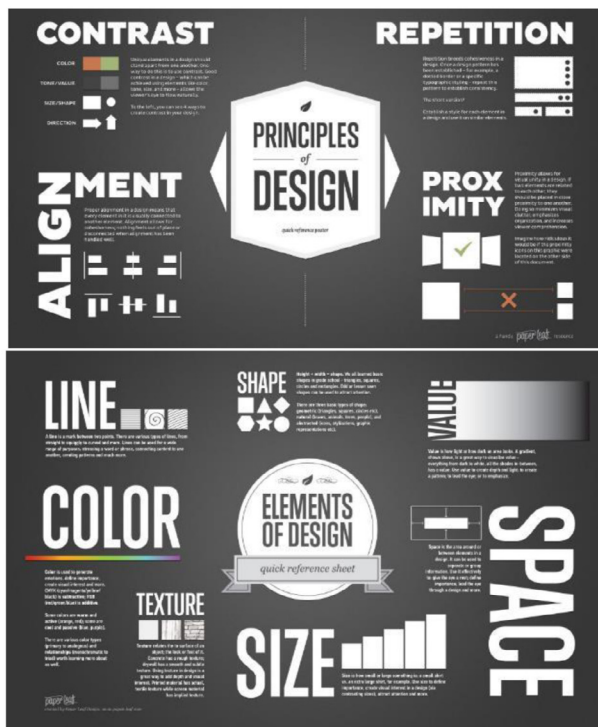


Figure 22. A Representation of the Elements of Good Design

Image Courtesy of Paper Leaf Design www.paper-leaf.com

The following are the principles of design that can be taken into consideration when designing digital materials as well as traditional ones:

“
Simplicity is the ultimate sophistication
Leonardo Da Vinci
”

Simplicity

To achieve this principle, the designers must not use colors excessively. They can use a small number of colors. They should avoid making the design overcrowded. They should also avoid the elaborate decorations or things that attract the attention or distract the mind. The reader should refer to the color theory to get information about how to use colors effectively (<https://www.creativelive.com/blog/color-theory-fundamentals>).

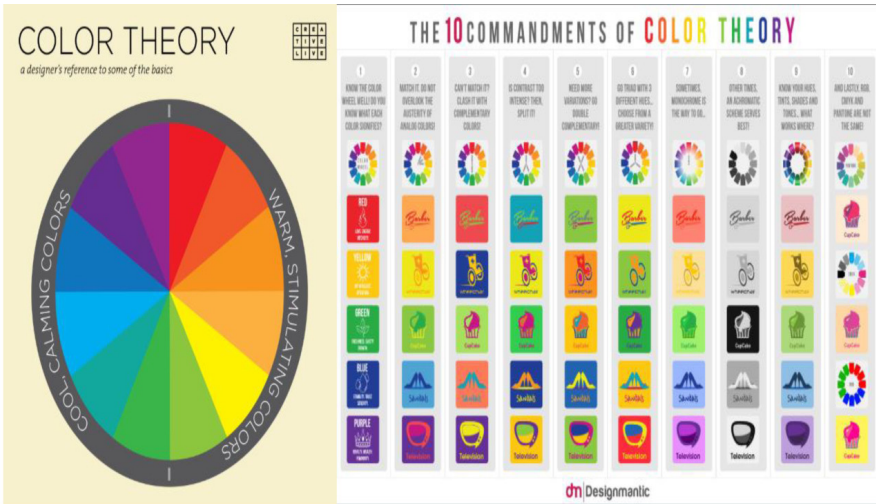


Image is a courtesy of DesignMantic.com

Figure 23. A Representation of Color Theory

Harmony

To achieve this principle, the designer must focus on a unified design through the background, colors, and fonts that are used as well as the navigation buttons in the program if any.

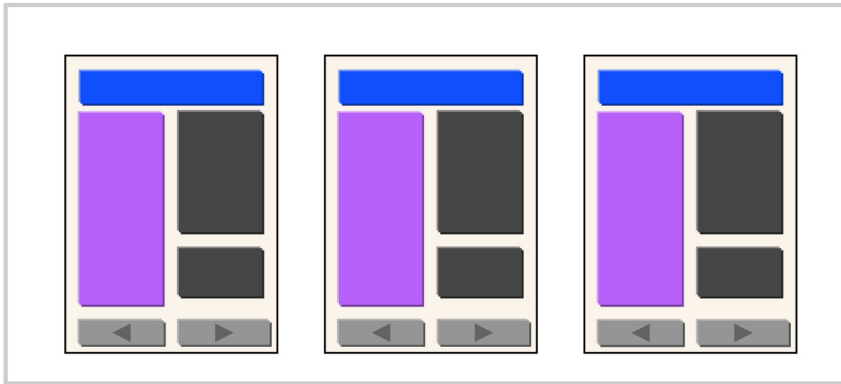


Figure 24. A Representation of Harmony Principle

Sequence

The designer can show the ideas, photos and drawings in a stimulating way that guarantees achieving their goals. They can guide the eye clearly to perceive the message through using the principle of sequence. It has been found that the eye is attracted to:

1. Clear things more than unclear ones.
2. Isolated things more than grouped ones.
3. Photos more than text.
4. Saturated colors more than unsaturated ones.
5. Big things more than small ones.
6. Strange graphs more than familiar ones.

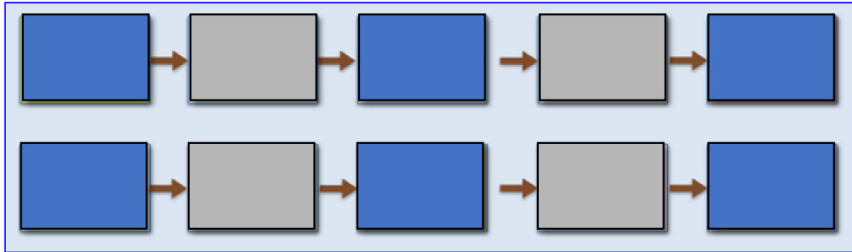


Figure 25. A Representation of Sequence Principle

Balance

This principle can be achieved through the even distribution of the used figures in the design stage which include photos and drawings, etc.

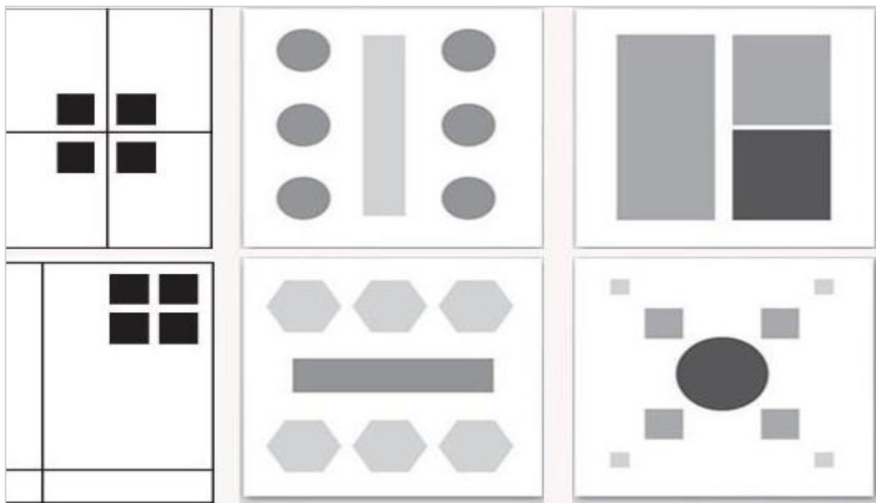


Image is a courtesy of Pluralsight LLC

<https://www.pluralsight.com/blog/film-games/understanding-balance-graphic-design>

Figure 26. A Representation of Balance Principle

Alignment

Every element in the design must be aligned to the other objects (Right, Middle and Left).

Compare the two figures: The second one is aligned.

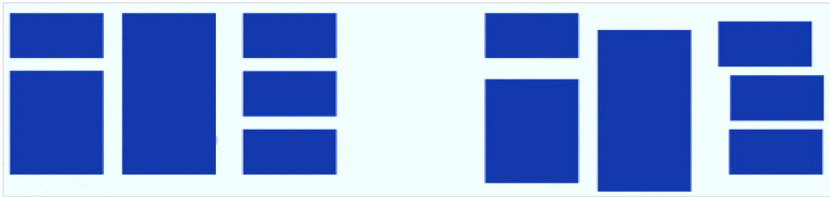


Figure 27. A Representation of Alignment Principle

Repetition

To achieve unity of design, repeat some of the elements such as fonts, colors, pictures, drawings or backgrounds.

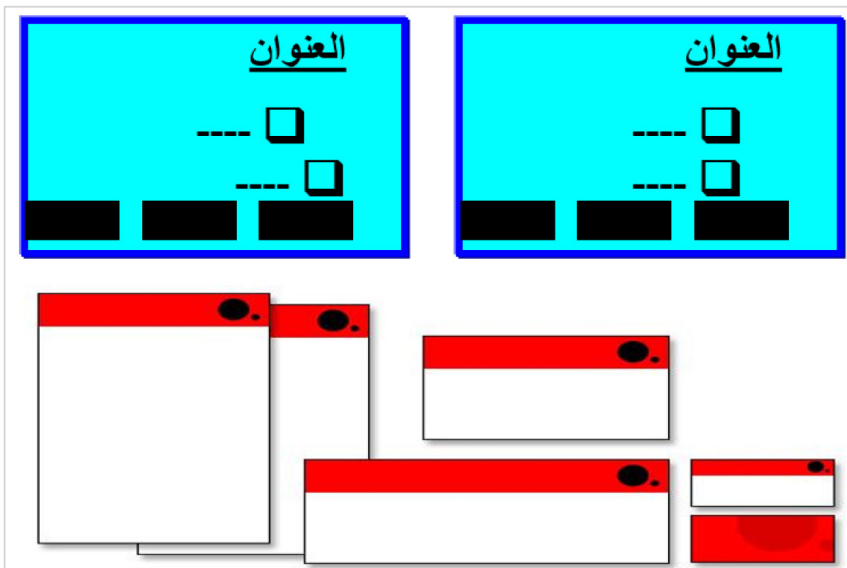


Figure 28. A Representation of Repetition Principle

Proximity

Proximity means that the objects that have a direct relationship are put together. For example, phone number and fax number in a card.

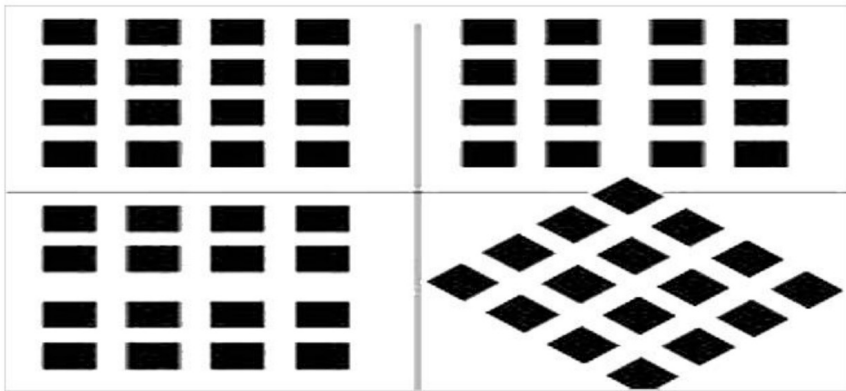


Figure 29. A Representation of Proximity Principle.

Contrast

There should be contrast in order to achieve readability. The contrast should include:

1. Background
2. Titles and texts
3. Colors
4. Fonts and size

See Figure (27 and 28)



Figure 30. A Representation of Contrast Principle

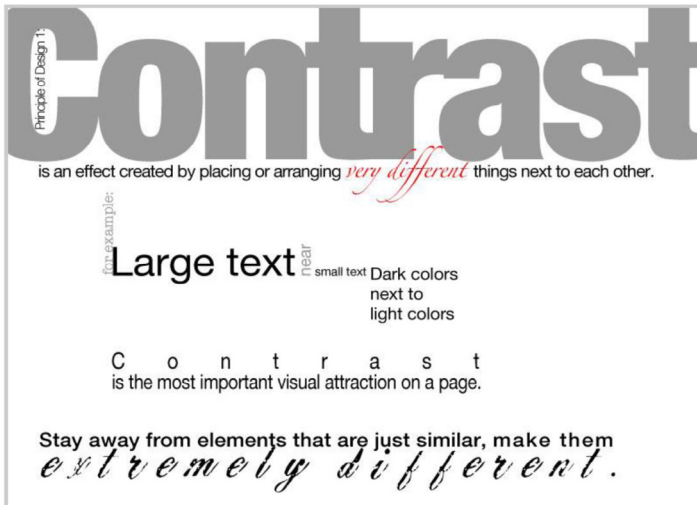


Figure 31. A Representation of the Contrast Principle.

Source: <https://munromedia.wordpress.com/web-design-910/unit-1-design-principles>

Prediction

The designer should put things in the expected place such as navigation buttons. They can be used in a visible location to help the user to predict what comes next. There should be fixed areas for pictures, drawings, navigation buttons and texts, among others.

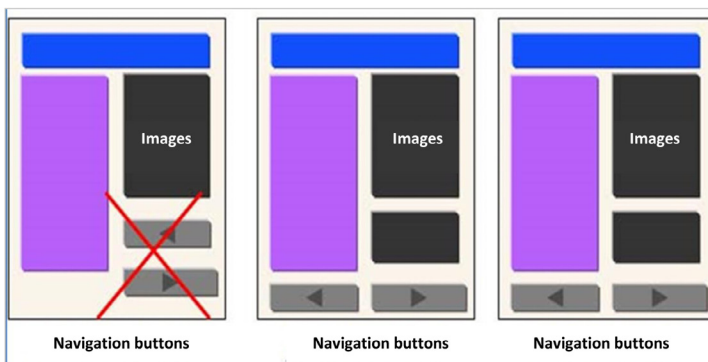


Figure 32. A Representation of the Prediction Principle

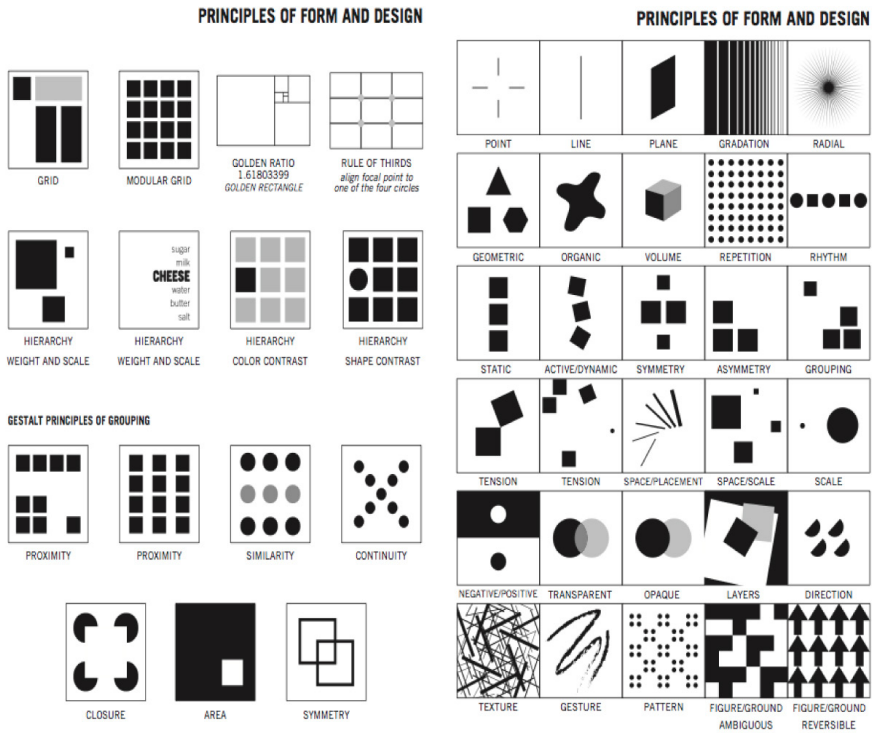
In addition to the general principles mentioned above, there are some special principles for titles, texts, and photos. For example, when we select a title, we should make sure of the following:

1. Using a short and clear title.
2. Avoid unnecessary words in the title.
3. Avoid using acronyms in titles.
4. The title should express the content of the screen.
5. The title should not exceed 2 lines.
6. Leave space between the title and the text.
7. The size and font of the title should be larger than that of the text.

The aesthetic aspects of design can be achieved by font size, font type and color as well as using multimedia such as sounds, drawings, animations and video clips. They should serve the topic. That means if you want to select a photo as background, the photo should express the topic and indicate its content.

For more detail about the principles of design, there are many resources that you can visit using the following links:

<http://teaching.ellenmueller.com/drawing-i/resources/elements-principles-of-2d-design>



Licensed under a Creative Commons Attribution ShareAlike 4.0 International

Source: [Elements & Principles of 2D Design | Drawing I \(ellenmueller.com\)](http://ellenmueller.com)

Figure 33. A Representation of Design Elements

Activity 13:
Design – Principles of Designing Visuals

Production Phase

“
 It is not important to know what you will do but do what you know.
Tony Robbins
 ”

The production phase is the most important phase of the model. Its success depends on the planning and design phases and the effort expended on such phases so that it positively affects this phase. The production phase consists of 9 steps. It might be worth noting that these steps should not be followed in a sequence.

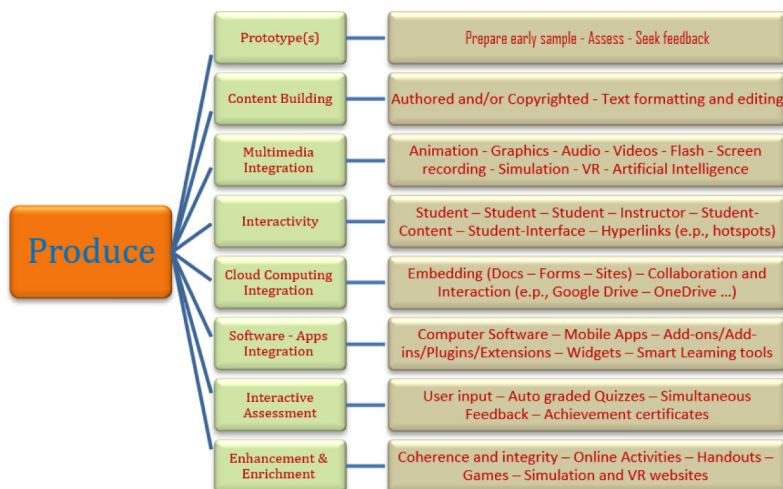


Figure 34. A Representation of ADIC Production Phase

Prototype(s)

The first step is to build a sample of the project and obtain feedback from users. If the feedback received for the prototype is positive, the project will continue with the same design. If the users noted observations in their feedback, the project should be revised accordingly.

Activity 14:

Production Phase – The Experimental Copy

Content Building

The developer needs to add the content either themselves or by obtaining it from different sources, simultaneously retaining the copyright property. Once the content is added to the project, the work should focus on editing and formatting, and the design should be considered.

A summary of a useful lecture titled, “Electronic Publishing: A General View”, presented by Dr Adel Khalifah (2014) and organized by The Arabic Association of E-Publishing can be seen in figure 35 below.

The figure indicates that any project starts with selecting the material content from educational institutions, such as the Ministry of Education, and ends with the final product.

Between the selecting the materials and the production stage, other phases including the selection of the design team and the team preparing the e-content and implementation.

Activity 15:

Production – Developing Content

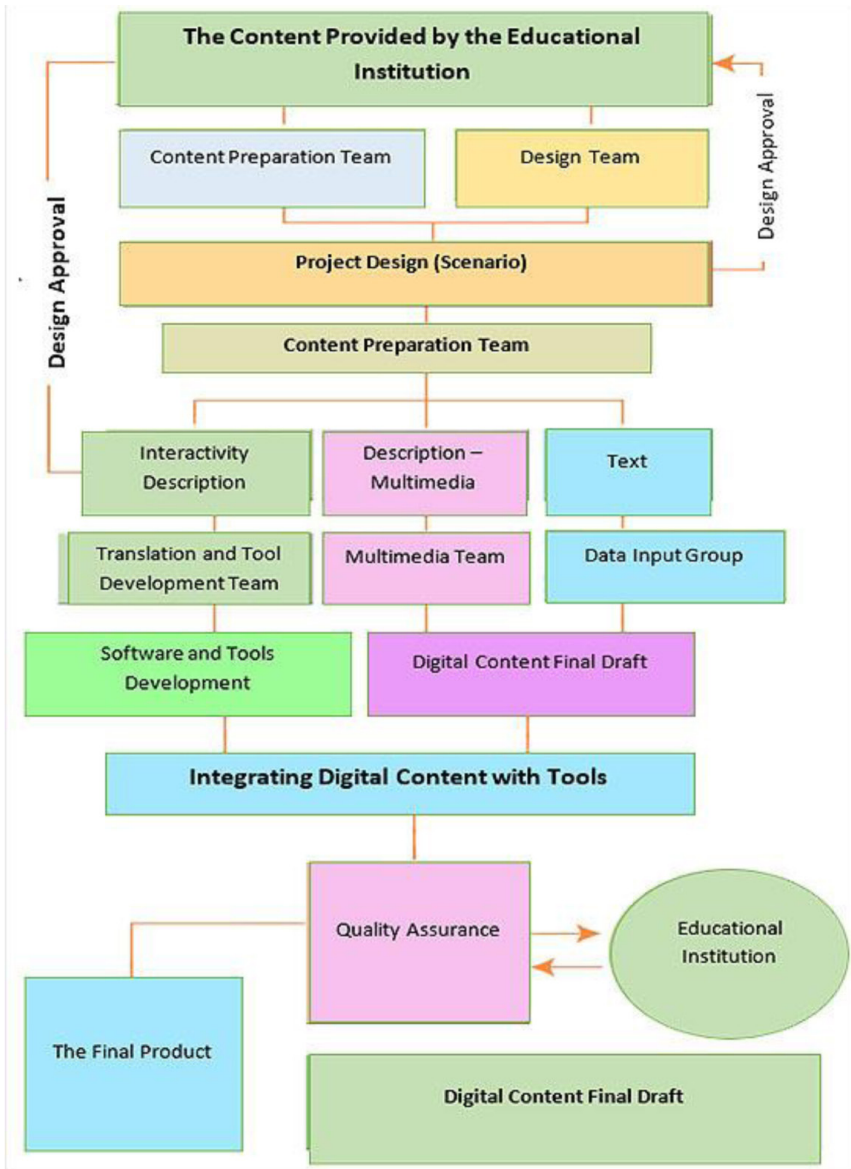


Figure 35. A Representation of Educational Content Components

Multimedia Integration

Multimedia is one of the key elements for creating any interactive digital content, regardless of its intended use and context. Thus, once the content is developed, the developer should start integrating multimedia elements into the project. Any integrated multimedia elements (such as animation, graphics, videos, and simulation) should be feasible and contribute to the achievement of the project outcomes.

Activity 16:

Production – Multimedia Integration

Software and App Integration

Similar to Cloud computing, the integration of different types of software, apps, plug-ins, and widgets will definitely enhance the project and make it more interactive and engaging. Some of the software and apps can imbue life to the project and enhance its content; they can help the audience become submerged into the content and motivate them to learn the content.

Activity 17:

Production – Integration

Cloud Computing Integration

The integration of Cloud computing services in digital interactive content is very important to make the project interactive, appealing to the audience, and rich in content. Cloud computing services could include the integration of various files such as PDF files, images, videos, handouts, quizzes, and online collaboration activities.

Activity 18:
Production – Cloud Integration

Interactivity

As the content is expected to attract and engage the target audience, a major emphasis should put on interaction. This interaction should cover all or some of the four well-known types of interaction: student-student interaction, student-instructor interaction, student-interface interaction, and student-content interaction. There are many different strategies and techniques that could lead to effective interaction, such as the use of hyperlinks, hotspot hyperlinks, and navigation menus and submenus. See figures 36 and 37 representing Jyura scale of interactivity (both figures were translated from Adel Khalifah (2014) lecture).

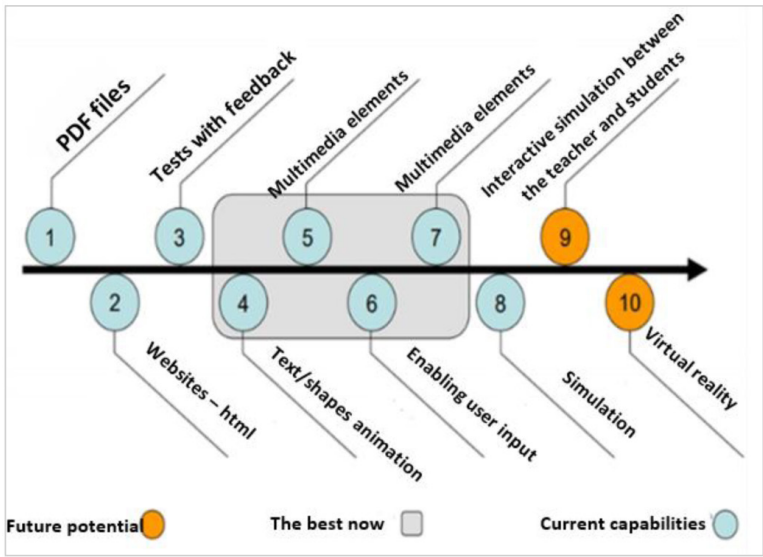


Figure 37. Jyura Scale for Interactivity

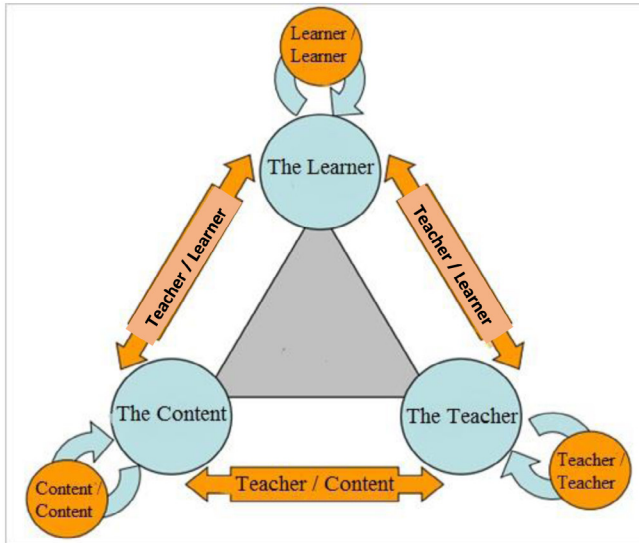


Figure 36. Jyura Scale for Interactivity

Activity 19:

Production Phase – Interactivity – Hands-on

Interactive Assessment

Assessment is a considerably important component of any educational content. As the goal is to create interactive content, the assessment must also be interactive. In addition, the assessment should include simultaneous feedback to the user. The developer can achieve this type of assessment using different techniques such as test makers, quiz applications, and internet services.

Activity 20:

Production – Interactive Evaluation

Enhancement and Enrichment

The final step in the production phase is to enhance and enrich the product. The developer should enhance the project using on-line handouts, games, virtual reality, and simulation sites.

Activity 21:

Production – Enhancement and Enrichment

User Manuals

Activity 22:

Production – User Manuals



Production is not by a chance, but the result of commitment to excellence, smart planning and focused efforts.

Paul Mir



Evaluation Phase

“
We all need someone to provide us with feedback Through which we can progress.
Bill Gates
”

The final phase in the model is the evaluation phase, which consists of three steps, as shown in Figure 38.

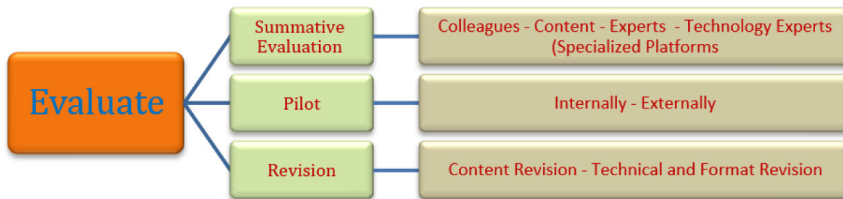


Figure 38. A Representation of ADIC Evaluation Phase

Summative Evaluation

Once the digital content is developed, a summative evaluation for the project must be conducted. This evaluation could involve presenting the project to colleagues and requesting them to review it. Similarly, the project should be evaluated by content and technology experts.

Activity 23:

Evaluation – Final Evaluation of the Project

Pilot

Once the summative evaluation is completed, the project must be piloted with a sample of users similar to the target audience. This could be conducted internally and externally, and the feedback from the users should be collected.

Activity 24:

Evaluation – Piloting the Product

Revision

The project should be revised based on the feedback received from the summative evaluation and pilot. The following three issues should be revised: content, technical features, and format.

Activity 25:

Evaluation – Review

Validity and Reliability of the Model

The reliability and validity of the model were tested in a research study that was published in the International Educational Journal of Science Education. For more details of the research study, visit the following two links:

- <http://www.icasonline.net/journal/index.php/sei/article/view/187>

- <https://doi.org/10.33828/sei.v31.i2.1>

What follows are some sections of the research study.

METHODS

Participants

Among the participants in the pilot implementation of the ADIC model, 28 university faculty members were involved in the piloting of the model, and 81 university students were involved in the application and validation of the model. The university faculty members developed an interactive presentation following the ADIC model during a 3-day workshop, whereas the students developed two projects, each within 2 months, during the 2018 fall semester.

VALIDATION AND EVALUATION

ADIC: Content Validity

Initially, the ADIC model was developed in three main phases, each consisting of numerous steps: planning and design, production and refinement, and evaluation and revision. To validate the model's content, it was sent to more than 50 experts from different specializations including educational technology, general education, curriculum, instructional design, engineering, computer science, humanities, and IT. The experts included school-teachers, university faculty members, technology experts, and

K-12 educators from different countries such as the USA, Britain, China, Japan, Yemen, United Arab Emirates, Saudi Arabia, Egypt, Jordan, Oman, and Sudan.

In addition, the model was presented to 31 university faculty members during a 1hr workshop. Participants were requested to provide their feedback on the model through a survey.

Based on the feedback received from the experts and workshop attendees, the model was revised, and few alterations, such as changes in the number of phases and order of steps, were implemented. In addition, a few steps were deleted, whereas others were added. **Figure 14** presents the initially developed ADIC model.

Model Reliability

For reliability, the model was applied in two contexts: with university faculty members and with pre-service teachers (students studying at the College of Education, United Arab Emirates University [UAEU]).

Faculty Members

The first use and application of the model were conducted by 28 local university faculty members as part of their professional development activities. During a 3-day workshop, participants were trained to design and create a digital interactive lecture based on the ADIC model. Once the participants completed the project, they were requested to fill in a questionnaire. The data collected were used as a pilot for the model and as validation for the survey.

Students

As part of the model implementation and evaluation, students from a technology course developed two interactive digital con-

tent projects based on the model. The students spent an entire semester designing and creating these two projects. The first project was designed during the first half of the 2018 fall semester, and the second project was developed and created during the second half of the semester.

Two instruments were used to evaluate the utility and feasibility of the ADIC model: an implementation checklist and perception survey. After completing the projects, students were requested to fill in the survey and checklists.

INSTRUMENT VALIDITY AND RELIABILITY

Two instruments were developed and used for evaluating the ADIC model.

Questionnaire

A questionnaire based on the 5-point Likert scale was prepared to investigate the participants' perceptions of the utility and feasibility of the ADIC model. The survey consisted of 20 items, with ratings of (1) strongly disagree, (2) disagree, (3) undecided, (4) agree, and (5) strongly agree. A panel of university professors from different specializations, including technology, curriculum, statistics, and IT, validated the survey.

Based on the feedback received from the panel of experts, a few changes were implemented, including rephrasing some of the questionnaire items. Once the questionnaire was completed, it was piloted with 28 university faculty members at a local university. After conducting a workshop on the model, participants were requested to fill in the survey. Cronbach's alpha was 0.977, which indicates the high reliability of the questionnaire.

Checklist

A checklist was created based on the validated question-

naire. However, instead of the 5-point Likert scale, three levels of measurements were used: not applicable, yes, and no. The checklist aimed at checking the implementation of the students' projects developed based on the ADIC model for triangulating data collected through the questionnaire. Similar to the survey, the checklist was validated by several university professors.

MODEL IMPLEMENTATION

As previously mentioned, the model was implemented to be used by pre-service teachers studying at the college of education. The students applied the model while developing two projects during a technology course.

Project 1: Designing and Creating Interactive Digital Content

In this project, students were expected to design and create an interactive digital content project, covering at least a lesson from the K-12 school curriculum in their area of specialization. In this lesson, the student must integrate several technologies that can be used to teach this lesson. The student is required to create the project using any multimedia authoring software, such as MS PowerPoint, ActivePresenter, Articulate Storyline, or any software the student feels comfortable with. The ADIC model was used as the framework for planning, producing, and evaluating the project. Figure 39 shows a screenshot of one of the created projects as a sample; the student's consent was obtained to use these screenshots for academic purposes.

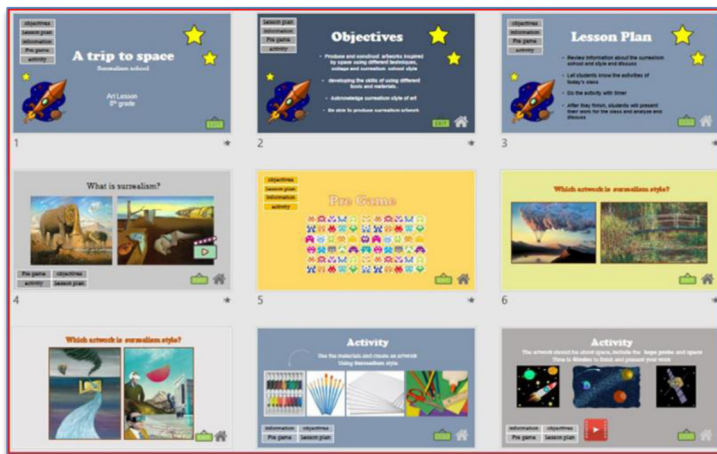


Figure 39. A Screenshot for the Digital Interactive Content Project Design

Project 2: Designing and Creating an Electronic Portfolio

For this task, students were expected to create an electronic portfolio organized around the 9 elements of the UAEU College of Education: mission, vision, and conceptual framework.

The portfolio was developed as a website in the form of a collection of the works previously completed in this class and/or other classes attended by the student. This portfolio will be the starting point for the required portfolio that students must submit to the college at different stages in the program, including the capstone and field experience courses. Students can use any web-authoring software, apps, Cloud computing services, or a combination of some of these programs or applications to create this portfolio. Moreover, like Project 1, the ADIC model is used as the framework for this project. Figure 40 shows a screenshot of a sample e-Portfolio.

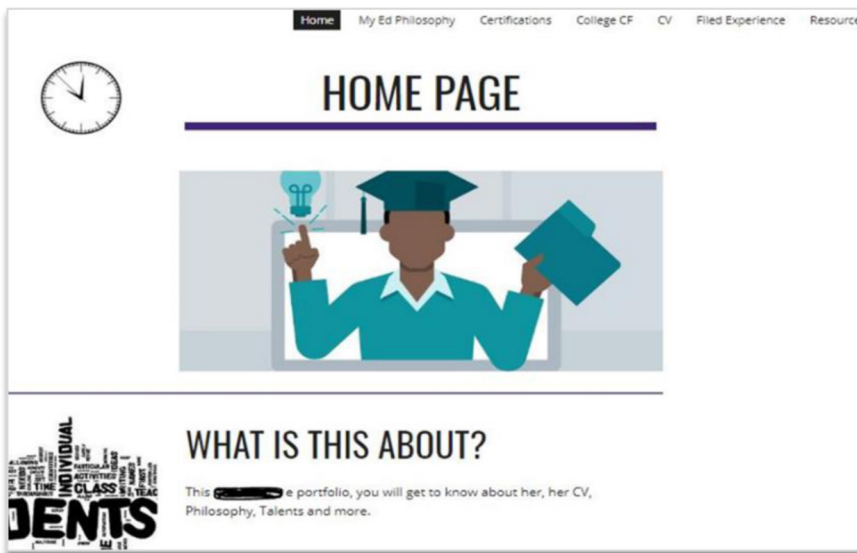


Figure 40. A Screenshot of the ePortfolio Project Interface

RESULTS AND DISCUSSION

To answer the first question, the mean scores of participants ranged from 3.95 to 4.33 on a 5-point Likert score. Participants had a very positive perception toward all the five phases of the model. In the planning phase, the mean scores of the participants ranged from 4.0 to 4.3. Similarly, their perceptions in the design phase ranged from 4.2 and 4.3. Further, the main scores of the production phase ranged from 4.0 to 4.3 on the 5-point Likert scale. Similar to this phase, the main scores of participants for the last phase of the model ranged from 4.1 to 4.3. As shown in Table 1, all items received high positive scores indicating high self-perceptions of the model utility.

Table 1

Students' and faculty members' perceptions of the utility of the ADIC model for designing and developing interactive digital content

ADIC Model Steps		Students	
		M	SD
Planning Phase			
	The model helped me connect my project to the standards.	4.3	0.7
	The model helped me create <u>SMART Objectives</u> for the content I developed.	4.3	0.7
	The model helped me identify key stakeholders for my project.	4.0	.7
	The model helped me analyze the target audience for my project.	4.3	0.7
	The model helped me think and use the right theoretical framework for my project.	4.1	0.7
	The model helped me select the right platform for my project	4.11	0.7
Design Phase			
	The model helped me plan well for the project I developed using planning tools such as flowcharts.	4.3	0.7
	The model helped me create a nice screen for my project.	4.2	0.8

ADIC Model Steps		Students	
		M	SD
Production Phase			
	The model helped me prepare a prototype for my project.	4.0	0.8
	The model helped me build the content for my project.	4.2	0.7
	The model helped me integrate different multimedia elements into my project.	4.3	0.6
	The model helped me plan for interactivity I used in my project.	4.1	0.7
	The model helped me integrate different Cloud computing services into my project.	4.0	0.8
	The model helped me integrate different computer software into my project.	4.2	0.7
	The model helped me use interactive assessment in my project.	4.3	0.7
	The model helped me enhance my project with a number of enrichment resources.	4.2	0.7
Evaluation Phase			
	The model helped me do the summative evaluation.	4.3	0.7
	The model helped me pilot the project.	4.1	0.7
	The model helped me revise my project.	4.2	0.6

Regarding Question 2, the results showed that students found the implementation of the model very beneficial for their projects (Table 2). It is worth mentioning that the students' projects are not large-scale like computerized curriculum or training modules. This implies that some of the model's steps, such as standards and stakeholders, will not be needed in the planning phase. Similarly, some details within the steps are not needed for the effectiveness of the projects.

The results show that the participants' implementation of the first phase of the model was clear for the items related to their projects. The model implementation for the SMART outcomes was 100% and 87% for Projects 1 and 2, respectively. The anal-

ysis of the target audience achieved 92% and 74% for Projects 1 and 2, respectively. Similarly, Platform Selection achieved 92.1% and 72.9% for Projects 1 and 2, respectively.

The results of Phase 2 showed percentages of 91% and 83.9% for the outlining, and 87.8 and 87.1 for the screen design for Projects 1 and 2, respectively. Thus, the implementation of this phase of the model was very effective for the two projects. Moreover, the implementation of most of Phase 3’s steps was clear.

Table 2.

Extent to which participants applied the phases and steps of the ADIC model when developing their digital interactive projects.

ADIC Model Steps		%					
		Project 1			Project 2		
		NA	No	Yes	NA	No	Yes
Planning Phase							
	Standards	70.0	2.2	27.8	83.9	1.6	14.5
	SMART outcomes	0.00	0.0	100	9.7	3.2	87.1
	Key Stakeholders	64.4	3.3	32.2	87.1	4.8	8.1
	Target Audience Analysis	7.8	0.0	92.2	16.1	9.7	74.2
	Theoretical Framework	2.2	4.4	93.3	85.5	1.6	12.9
	Platform Selection	0.0	8.9	92.1	14.5	12.9	72.6
Design Phase							
	Outlines	7.8	1.1	91.1	11.3	4.8	83.9
	Screen Design	3.3	8.9	87.8	4.8	8.1	87.1
Production Phase							

Prototype Preparation	34.4	15.6	50.0	11.3	14.5	74.2
Content building	14.4	7.8	77.8	11.3	16.1	72.6
Multimedia Integration	2.2		97.8	6.5	9.7	83.9
Interactivity	3.3	1.1	95.5	4.8	4.8	88.7
Cloud Computing Integration	7.8	22.2	70.0	8.1	24.2	67.7
Software/Apps Integration	5.6	13.3	81.1	8.1	17.7	74.2
Interactive Assessment	12.2	7.8	80.0	74.2	3.2	22.6
Enhancement and Enrichment	8.9	1.1	90.0	14.5	22.6	62.9
Evaluation Phase						
Summative Evaluation	27.8	16.7	55.6	79.0	6.5	14.5
Pilot	56.7	10.0	33.4	19.4	29.0	51.6
Revision	14.4	8.9	76.7	6.5	24.2	69.4

To answer question 3, both students and faculty members indicated that they intend to use the model or recommend it to colleagues. The mean scores of students and faculty members were 7.5. and 7.8, respectively, based on the net promoter score ranging from 0 (Not at all likely) to 10 (Extremely likely), as shown in Table 3.

Table 3

Participants' subjective norm (intent to recommend the model to others)

	n	mean	SD
Students	81	7.5	1.5
Faculty members	28	7.8	2.6

Conclusion

The study results showed that the proposed ADIC model is an effective tool for designing and creating digital interactive content. This was evident from the results of the two projects developed by students employing the model as the framework. The students assigned high scores to the utility of the model in helping them systematically develop their projects. Their perceptions regarding the use of the model were positive, and they were likely to recommend the model to other users in the future. Similar to students, faculty members had a highly positive attitude toward the model and intended to recommend it to their colleagues.

Based on these results, K-12 schools, higher education institutions, and other educational entities may benefit from this model for the development of any instructional digital material. Curriculum developers, instructional designers, teachers, and trainers will benefit in one way or another from this generic flexible model.

However, to generalize the model across various fields, further detailed investigations of the model are required. Research should be conducted on the implementation of the model under different contexts in K-12 schools and higher education institutions. In addition, additional time should be allocated for the implementation of the model, to improve the validity and accuracy of the results. Similarly, the model should be implemented with respect to large-scale projects such as computerized curriculum, materials for online and blended learning courses, and training modules/units.



SUMMARY

Considering the results of applying the model in different educational environments, it can be recommended that both higher education institutions and K-12 schools take advantage of this model in developing interactive digital materials. Curriculum designers, teachers, students, and trainers will also benefit from the flexibility and inclusiveness of this model.





PART TWO

HANDS-ON ACTIVITIES

- **Chapter Three:**
Hands-on activities – Planning Stage
- **Chapter Four:**
Hands-on activities – Design Stage
- **Chapter Five:**
Hands-on activities – Production Stage
- **Chapter Six:**
Hands-on activities – Evaluation Stage



CHAPTER THREE

Hands-on Activities (Planning Stage)

Summary of ADIC Phases

The following table can be used to summarize the ADIC model phases used to develop the digital interactive content.

Stage	Step	What has been done/ What will be done
Planning	Standards	
	Objectives	
	Theoretical framework	
	Stakeholders and decision-makers	
	Analyzing the targeted group	
	Choosing the suitable website	
Design	Graphs	
	Screen design	
Production	Experimental copy	
	Content development	
	Multimedia integration	
	Computer program and application integration	
	Cloud computing integration	
	Interaction	
	Interactive assessment	
	Development and enrichment	
User guide		
Evaluation	Final evaluation	
	Trial of the product	
	Review	
Notes		

Activity 1: Planning – Project Related Standards

Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Define the criteria/standards that will guide you in developing the project and mention the sources.

Standard		Source and number
1		
2		
3		
4		
5		
<p>Notes: These standards may include those of the Ministry of Education curricula, specific programs, and relevant professional organizations.</p>		

Activity 2: Planning – Objectives

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Write down the objectives to be achieved and link them to the standards (if applicable).

Objective	Standards
1	
2	
3	
4	
5	

Notes:

The characteristics of smart objectives must be available in each objective (specific – measurable – achievable – linked to the content – time-bound)

Activity 3: Planning – Theoretical Framework

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: What learning theory(s) will be used when defining and developing the practical materials. For instance, Constructivism Theory, Digital Multimedia Theory, etc.

	Theory and its basic principles	Reasons for selection
1		
2		
3		
4		
5		

Notes:

When designing the project, it is advisable to rely on the principles of the learning theories that can help increase the learner’s interaction with the materials in addition to the general principles of effective teaching that should be considered when designing the interactive digital content.

Activity 4: Planning – Communication with Stakeholders and Decision-Makers

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Indicate the people and the institutions that will be contacted including those who can play a role in the success of the project.

Person / Institution to be contacted	How to contact them and the expected help for the project

Notes:
Communicating with the different parties and decision-makers is crucial to getting the necessary support to complete the project. It also helps in its interim and final evaluation and distribution. Therefore, communication depends on the type of the project to be developed. In some projects, the developer or the designer does not need to communicate with anyone.

Activity 5: Planning – Characteristics of the Target Group

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Indicate the cognitive and psychological characteristics as well as the skills and previous experience of the target group.

Characteristics of the target group	
Cognitive characteristics	
Psychological characteristics	
Expected skills	
Previous experience	
Required technological knowledge	
Physical characteristics	
Age	
<p>Notes: There are many features and criteria that you may need to study in detail. This depends on the type of project you are developing as well as the target audience.</p>	

Activity 6: Planning – Development Platforms

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Indicate the development platform that you are planning to use. Then, indicate the advantages of each platform and the reasons for selecting them.

Platform	Advantages and reasons for selection

Notes:

There are several types of platforms: paid and open access. There are also platforms that are limited for free use, and you are required to pay later so you should study the selected platform well and read reviews from other users.

The background of the page is a light blue and white abstract design featuring a network of circles and lines, resembling a data visualization or a digital interface. A hand is shown typing on a laptop keyboard, which is partially visible in the lower half of the image. The top half of the page is dominated by a large green vertical rectangle on the left side, which contains the chapter title. Below this green rectangle is a dark blue horizontal rectangle containing the subtitle. The overall aesthetic is clean, modern, and tech-oriented.

CHAPTER FOUR

Hands-on Activities (Design Stage)

Activity 7: Design – Brainstorming and Concept Maps

Project Title:

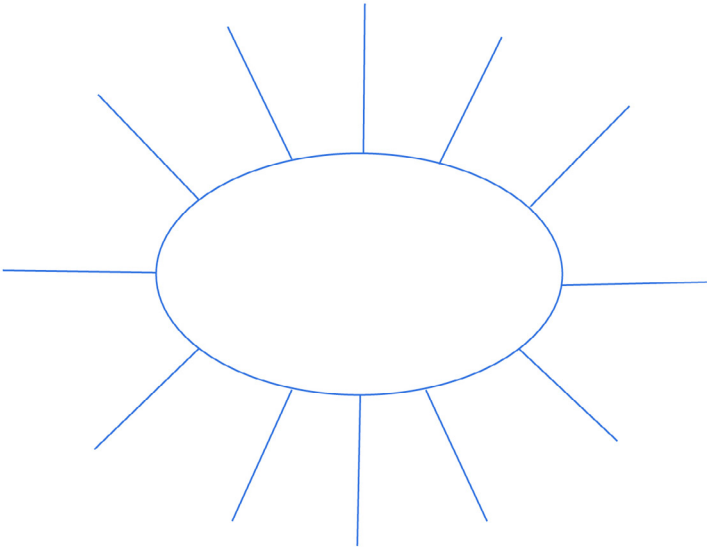
Field /Specialization:

Type of Activity: Individual – Group

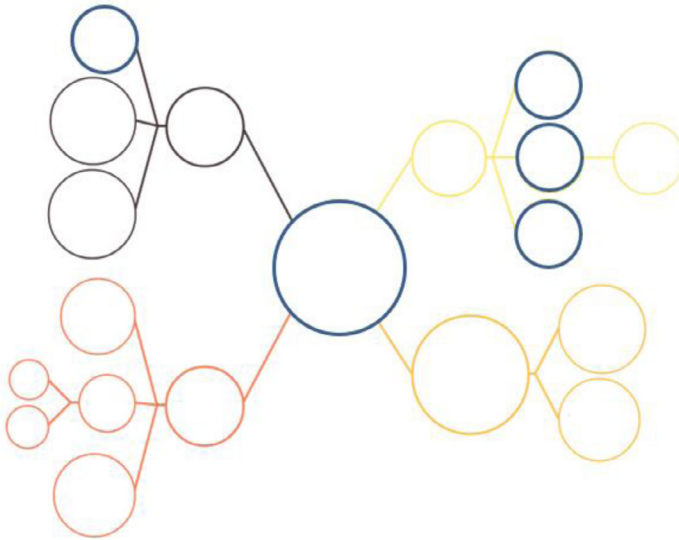
Time: As needed

Instructions: Alone or with your team members try to generate and elicit the ideas related to the project as the first step for planning. You can use the following models or others you find useful. Several programs and websites can be used for brainstorming sessions and concept maps. You can also review the practical section in the book. Free ready-made templates can be found on the following site:

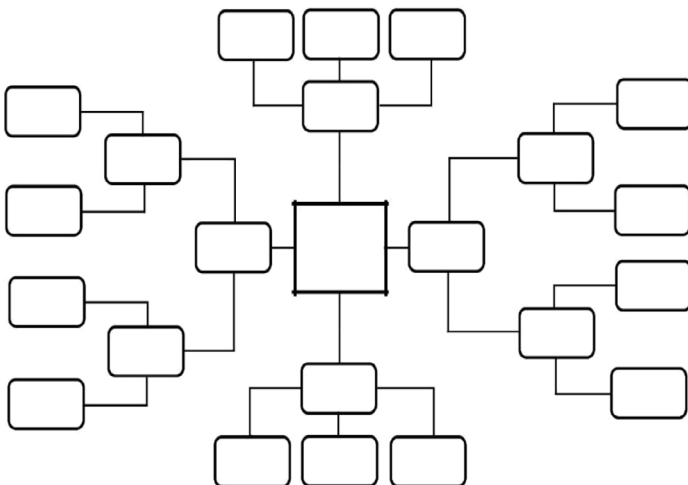
<https://infograph.venngage.com/register>



Another Model for Brainstorming and Concept Maps



A Third Model for Brainstorming and Concept Maps



Activity 8: Design – Charts

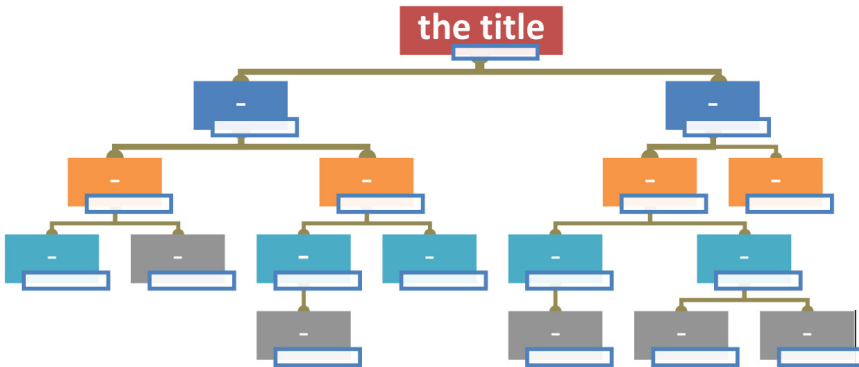
Project Title:

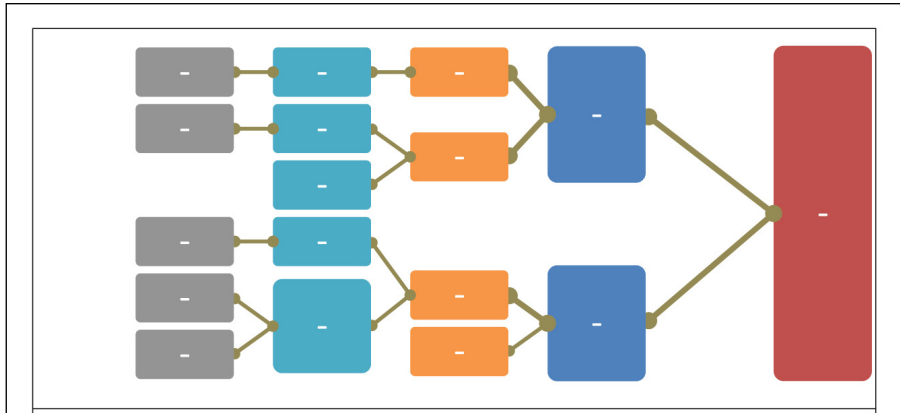
Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Alone or with your team members design a flow-chart for the project. You can use the following models or others that you find useful. There are several programs and websites that can be used for building the charts. You can also refer to the practical section in this book.

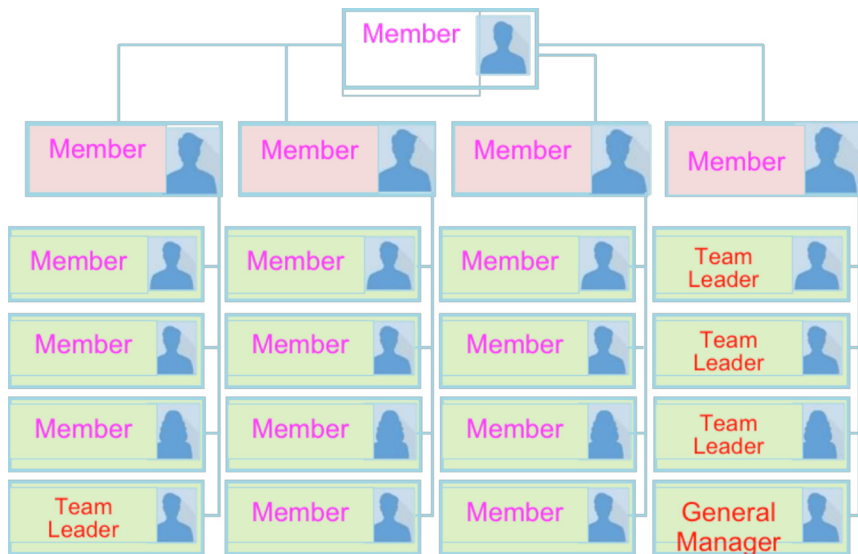




Notes: The following site contains many templates that can be used for creating different types of flowcharts.

<https://www.lucidchart.com/pages/flowchart-template-for-word>

Another model that can be used as a chart of the different project committees:



Activity 9: Design – Content Planning

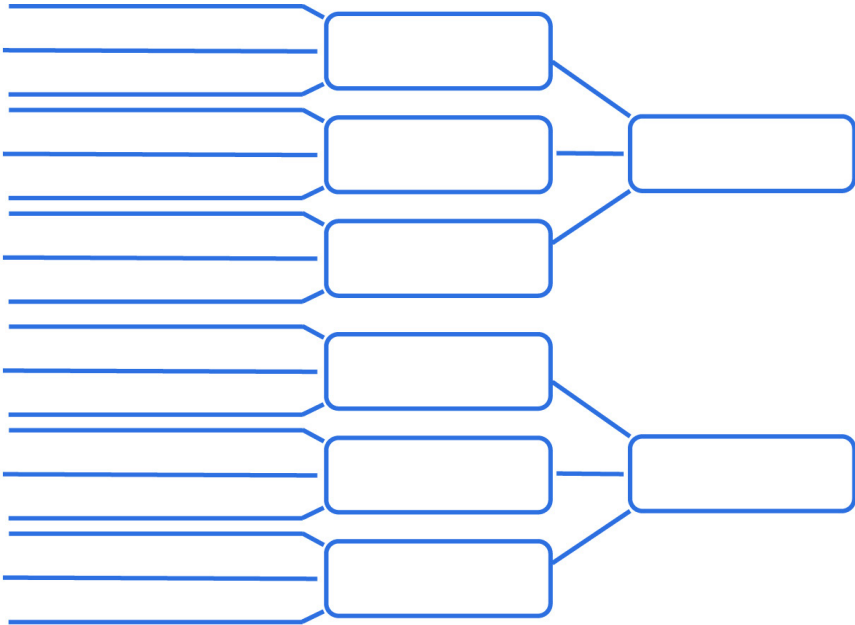
Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Alone or with your team members design the content of the project. You can use the following models or other models you find useful. There are several programs and websites that can be used for this purpose. You can also refer to the practical section of this book.



Activity 10: Design – Storyboards

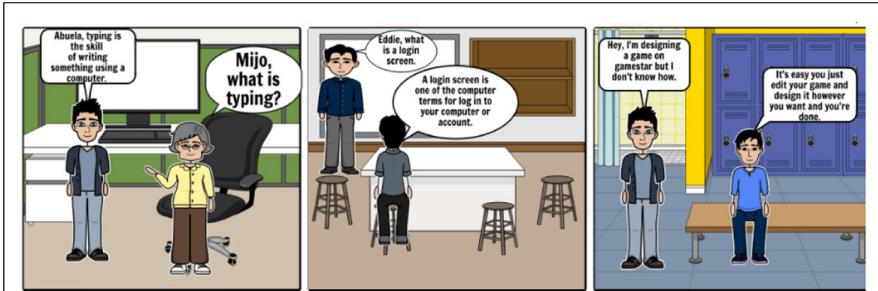
Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed








Instructions: Alone or with your team members design the project’s storyboards that can be implemented later using the programs you choose.



A screenshot of StoryBoardthat site Interface 2021. Courtesy of Clever Prototypes, LLC

<https://www.storyboardthat.com/storyboards/184e6c76/computer-class>

		
_____	_____	_____
_____	_____	_____
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<hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/>	<hr/> <hr/> <hr/> <hr/>

You can use the following site to create suitable storyboards for the project: studiobinder.com

Activity 11: Design – Templates

Project Title:

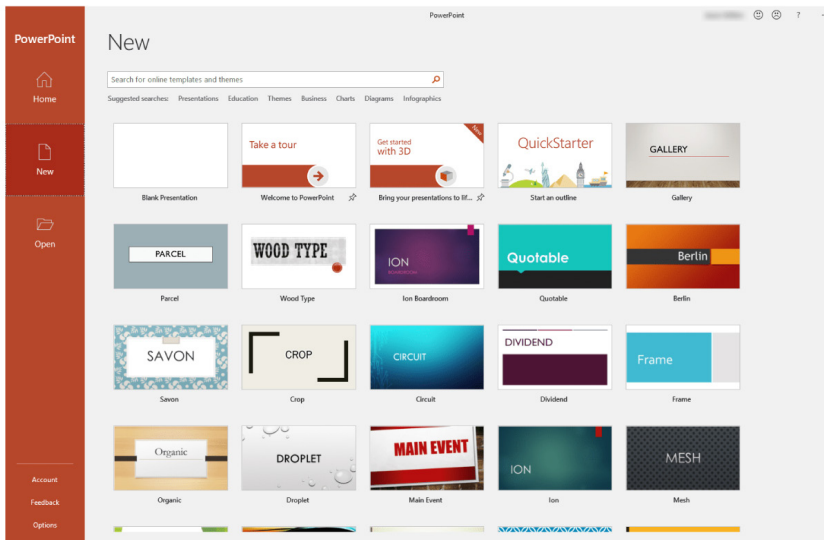
Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: After selecting the desired program, choose a suitable ready-made template. Then, modify it Open. Using ready-made templates saves time and effort. Most programs, applications, and platforms offer ready-made templates that can be used and modified Open to fit your needs and requirements. The following are some examples of the ready-made templates available on PowerPoint and iBook.

PowerPoint Templates that can be used by opening a new file



PowerPoint Templates that can be used by opening a new file

Activity 12: Design – User Interface Design

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Alone or with your team members, define the texts and multimedia that will be used for designing the user interface

Welcome

--

--

Screen number	Title	Multimedia
0.1	Text	
0.2		
0.3		
Notes		

Activity 13: Design – Principles of Visual Design

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Go back to any of the previously developed digital projects. Try to evaluate their application of the designing principles that were discussed in the first section of this book. You can also use the following table to complete the activity:

Principle	Application
1. Simplicity	
2. Contrast	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

Notes:

Figure 38 below is a summary of the visual designing principles discussed earlier in this book. You may use them as a guide to complete this activity.

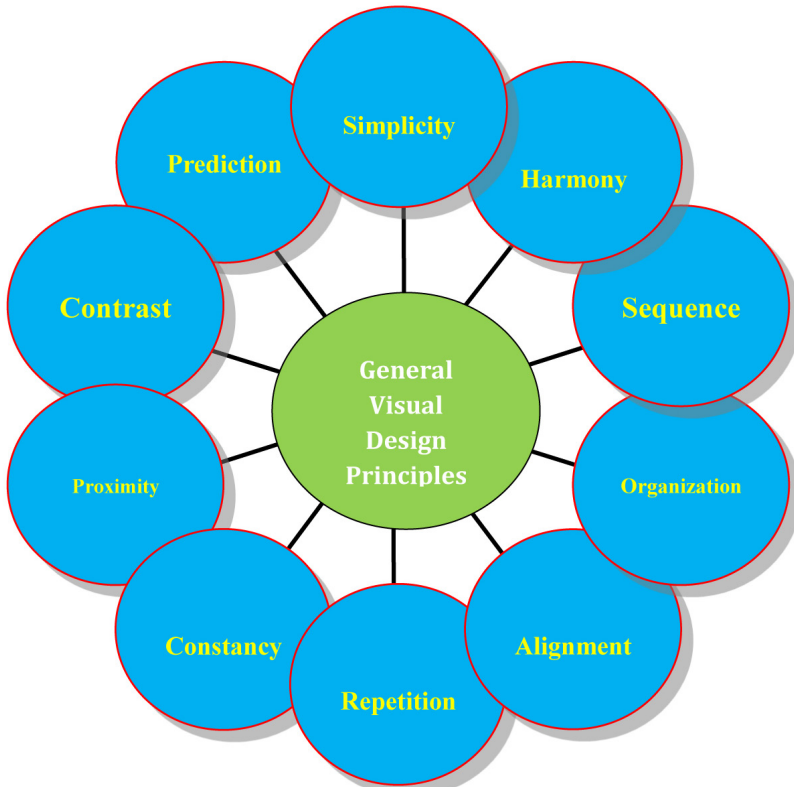


Figure 41. A Summary of the Visual Design Principles

The image features a hand in a blue shirt sleeve typing on a silver laptop keyboard. The background is a blurred office scene with a network of white lines and circles overlaid. A large green vertical bar is on the left side. The text 'CHAPTER FIVE' is in bold black serif font on the green bar. Below it, a dark blue bar contains the text 'Hands-on Activities (Production Stage)' in white serif font. At the bottom center, the page number '108' is in a white box with horizontal lines extending to the left and right.

CHAPTER FIVE

Hands-on Activities (Production Stage)

Activity 14: Production – The Experimental Copy


Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Based on the platform or program that will be used in developing the project, develop a prototype model of the project so that it can be used for developing the entire project after validation and collecting feedback. The following table is an example of what to do with the selected sample.

	<p>Login screen</p>
	<p>Multimedia library</p>
<p>Notes: It is possible to develop the prototype version's content so you can get feedback.</p>	

Activity 15: Production – Developing the Content

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the sources of the materials that will be used in developing the project using the following form. After that you should add the material to the project under development using the selected development programs.

Source	Details
• Writing the materials	
• Ready-made curricula	
• Open sources and Internet sites	
• Libraries and Learning Resource Centers	
•	
•	
•	
Notes	

Activity 16: Production – Multimedia Integration

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the multimedia that will be integrated in the project. Then, add them to the project using the selected program, application, or platform.

Item		Description and source	Purpose
1	Pictures		
2	Sound files		
3	Video files		
4	Diagrams and infographics		
5			
6			
7			

Notes:

Identifying the items and their sources saves time and effort that can be spent on building and developing the project.

Activity 17: Production – The Integration of Computer Programs and Applications

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the programs, applications and services that will be integrated into the main project. Implement the integration process so that these programs and applications are part of the main project.

1	Program, Application or Service	Purpose of integration	What will be integrated
2			
3			
4			
5			

Notes:

The programs or applications in this step enable to increase the interaction due to the programs. They will also provide greater enrichment through using different types of training and activities.

Activity 18: Production – Cloud Integration

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the Cloud Services that will be integrated into the project whether for storage, sharing or collaborative work. Apply what is specified in the following table to the main project.

Service	Purpose of Integration	What will be integrated
1		
2		
3		

Notes:
The following are examples of useful Cloud services: Microsoft, One Drive, Google Drive, Dropbox, etc.

Activity 19: Production – Interaction

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the methods and strategies for achieving integration in the project. Apply what is specified in the following table in the main project whether by using programs, applications, internet services or others.

Type of Interaction		Strategies or Applications	What will be implemented
1	Learner with Materials		
2	Learner with other Learners		
3	Learner with the User Interface		
4	Learner with Teacher or Trainer		
5			

Notes:

There are several programs and internet services that can be used to achieve the aforementioned types of interaction. You can review the practical section — related to the programs, applications, and internet services.

Activity 20: Production – Interactive Evaluation

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the methods and strategies for the interactive evaluation that will be used in the project. Apply what is specified in the following table in the main project whether you are using programs, applications, or internet services.

Type of Interactive Evaluation		Resources Used (programs, internet services, etc.)	What will be implemented
1	Interactive training along with feedback		
2	Self-corrected exams		
3	Activities and exercises		
4	Other		

Notes:

There are many free programs and internet services through which an interactive evaluation of the project can be done. You can also review the practical section — related to the programs, applications, and internet services.

Activity 21: Production – Enhancement and Enrichment

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the enrichment resources that will be used in the project. Apply what is specified in the following table to the main project whether you are using programs, applications, or internet services, etc.

Source		Activity Description	What will be implemented
1			
2			
3			
4			
5			
6			
7			
8			

Notes:

There are many free internet sites with activities and enrichment educational games that can elevate the project.

Activity 22: Production – Guides for Users

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Determine the guides that will be developed to introduce the project and how it is used by the target groups.

Guide		Contents
1		
2		
3		
4		

Notes:

The User Guide may be part of the project or independent. It can take various forms such as texts, videos, internet sites, or others.

The image features a hand in a blue shirt sleeve typing on a silver laptop keyboard. The background is a soft-focus office scene with a network of white lines and circles overlaid. A large green vertical bar is on the left side. The text 'CHAPTER SIX' is centered in the green bar, and 'Hands-on Activities (Evaluation Stage)' is centered in a dark blue bar below it. The page number '118' is at the bottom center.

CHAPTER SIX

Hands-on Activities (Evaluation Stage)

Activity 23: Evaluation – Final Evaluation of the Project

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: Using the following standards that appear in Almekhlafi’s (2004) booklet titled Teaching and Learning Resources, published by the United Arab Emirates University. Evaluate your digital interactive project quantitatively and qualitatively. Then, based on the results of the evaluation, modify the project. This form was partially adapted from Pierson and Bitter (1999).

Project Title:	
Reviewer’s Name:	
Evaluation/Review Date:	
GRADE LEVELS the project is developed for:	
If other:	
SUBJECT (S) covered:	
If other:	
Insert a screenshot of the project interface.	
PROJECT DESCRIPTION and Objectives:	

Briefly describe the content and context of the project (Digital Interactive Content...):

List the objectives of the software:

Evaluation Sections

Instructions:

Once the digital interactive project is finalized, use the evaluation criteria below. Select the number/assessment criteria that corresponds to your point of view. At the end of each section, select the number/assessment criteria that summarizes your overall evaluation of the items in that section.

5=EXCELLENT, 4=VERY GOOD, 3=GOOD, 2=POOR, 1=NOT AVAILABLE

DOCUMENTATION & SUPPLEMENTARY MATERIALS:

Necessary technical documentation is included.	Excellent (5)
Objectives are clearly stated.	
Materials for enrichment and remedial activities are provided.	
Learning activities that facilitate integration into curriculum are suggested.	
Section Summary:	

PROGRAM CONTENT:	
Instruction matches stated objectives.	
Instructional strategies are based on current research.	
Instruction addresses various learning styles and levels of intelligence.	
Information is current and accurate.	
Program is free of stereotypes and bias.	
Section Summary:	
PRESENTATION:	
Information is presented in a developmentally appropriate and logical way.	
Illustrations and examples are relevant.	
There is appropriate variety in screen displays.	
Text is clear and printed in type suitable for target audience.	
Spelling, punctuation, and grammar are correct.	
Section Summary:	
EFFECTIVENESS:	
Students can recall/use information presented following program use.	
Program prepares students for future real-world experiences.	
Students develop further interest in topic from using program.	
This is an appropriate use of instructional software.	
Section Summary:	

AUDIENCE APPEAL & SUITABILITY:	
Program matches interest level of indicated audience.	
Reading level is appropriate for indicated audience.	
Examples and illustrations are suitable for indicated audience.	
Required input is appropriate for indicated audience.	
Necessary completion time is compatible with student attention.	
Program supplies remediation or enrichment when appropriate.	
Section Summary:	
PRACTICE/ASSESSMENT/FEEDBACK:	
Practice is provided to accomplish objectives.	
Practice is appropriate for topic and audience.	
Feedback corresponds to student responses.	
Feedback is immediate.	
Feedback is varied.	
Feedback gives remediation and reinforcement.	
Remediation and reinforcement are positive and dignified.	
Assessment is aligned with objectives.	
Open-ended responses and/or portfolio opportunities are promoted.	
Collaborative learning experiences are provided.	
Section Summary:	

EASE OF USE:	
User can navigate through program without difficulty.	
Screen directions are consistent and easy to follow.	
Help options are comprehensive and readily available.	
Program responds to input as indicated by directions.	
Title sequence is brief and can be bypassed.	
User can control pace and sequence.	
User can exit from any screen.	
Only one input is registered when key is held down.	
Section Summary:	
USER INTERFACE AND MEDIA QUALITY:	
Interface provides user with an appropriate environment.	
Graphics, audio, video, and/or animations enhance instruction.	
Graphics, audio, video, and/or animations stimulate student interest.	
Graphics, audio, video, and/or animations are of high quality.	
Section Summary:	

SECTION SUMMARIES:							
Documenta- tion	Content	Presenta- tion	Effec- tive- ness	Appeal/ Suitabil- ity	Practice/ Assess- ment	Ease of Use	Interface/ Quality
OVERALL EVALUATION COMMENTS							
What did you like most about the software?							
What did you like least about the software?							

Project Overall Evaluation Summary.

Make sure to write your qualitative evaluation here focusing on different aspects of the evaluation: (1) Interface/Quality, (2) Ease of Use, (3) Practice/Assessment, (4) Appeal/Suitability, (5) Effectiveness, (6) Presentation, (7) Content, and (8) Documentation.

Conclusion and recommendations:

Activity 24 – Evaluation – Trial of the Product

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: The following table can be used to document the feedback obtained from the target group at the trial stage. It can be distributed along with the project. You can request the users complete it for the purpose of developing the project.

Part	Problem	Suggested Solution
1		
2		
3		
4		
5		
<p>Notes: The feedback obtained is for guidance and is in no way binding.</p>		

Activity 25– Evaluation – Evaluation – Review

Project Title:

Field /Specialization:

Type of Activity: Individual – Group

Time: As needed

Instructions: After collecting feedback from the target group, you along with your team should modify the project as required.

Changes		Things to be changed
Content		
Coordi- nation		
Tech- nical quality		
Notes:		



PART THREE

PROGRAMS AND APPLICATIONS

- **Chapter Seven:**
Suggested Programs and Applications
- **Chapter Eight:**
Additional Suggested Programs for the Planning Stage
- **Chapter Nine:**
Additional Suggested Applications for the Production Stage
- **Chapter Ten:**
Some Screenshots of Completed Projects and Educational Resources

The background of the page is a light blue gradient with various digital icons and network diagrams. A hand is shown typing on a laptop keyboard in the lower half of the image. A solid green vertical bar is on the left side. A dark blue horizontal bar is positioned below the green bar, containing the chapter title. The page number '129' is centered at the bottom.

CHAPTER SEVEN

Suggested Applications and Programs for the Digital Interactive Content

Introduction

In this section of the book, the author would like to draw the reader's attention to the following:

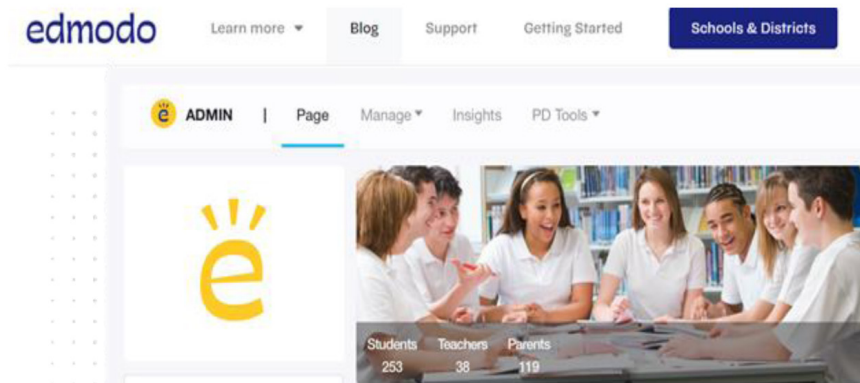
- The suggested applications and programs are only examples of the programs that can be used in developing your project. This means that the reader may prefer using different programs and applications. The program or the application is not a goal, but a tool that can be used for developing the project. Therefore, you can use the programs that you are already good at or other reliable ones.
- These programs and applications have been classified according to their possible use in the different stages of the ADIC model. Some programs and applications can be used in more than one stage of the model.
- The selected programs and applications are well-known and have proven their effectiveness. They can survive for a long period of time without a change, only improvements in their performance and quality.
- As a developer or designer, you are the only one who can decide the sort of programs and applications that are suitable for your project. Therefore, you should trust your selection and experience.
- There are many sources that can be consulted to help you know how to use such programs and applications. There are many such videos on YouTube in different languages including Arabic.
- Since the number of programs, applications and services that can be used in developing the digital content is huge, between two to seven applications have been selected as references for each stage of the ADIC model to avoid the developers getting lost in a crowd of applications and programs. Moreover, other programs and applications have been mentioned in each stage with more detail in separate chapters.

Suggested Programs and Applications for the Planning Stage

The following are the programs and applications that can be used in the planning stage. Some of them can be used when determining the standards and research. Some others can be used as a platform to display the developed digital material in the case it is not designed to be independent.

Edmodo

<https://new.edmodo.com/>



Screenshot of site Interface 2021. Courtesy of Edmodo.

Brief Description

Edmodo is an eponymous application that enables the designer to create virtual classes through which they can upload materials, assignments, files to be shared with the students, discussions, and tests, thus increasing classroom and non-classroom interaction. To put it differently, this service can be viewed as an e-learning Management System with limited features. It helps parents to follow their children.

Advantages:

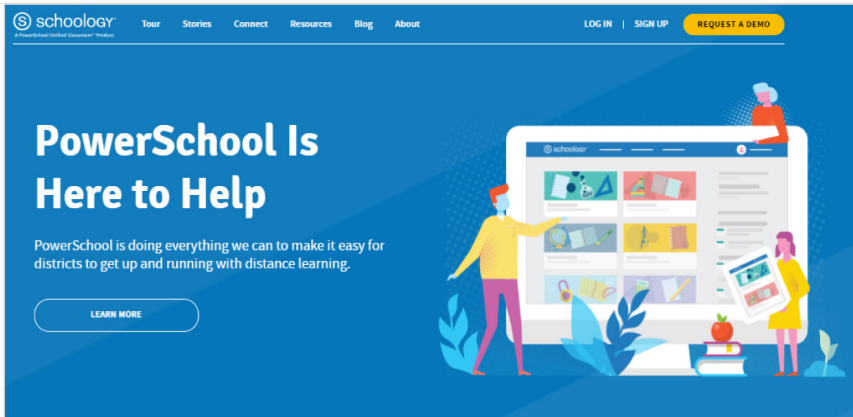
- It is a channel of communication between the school and home. Therefore, the students and their families are able to communicate with the teacher and they are aware and can keep track of assignments and homework.
- It allows the teacher to share a variety of educational resources with the students such as websites and YouTube videos.
- It allows the teacher to respond immediately to their students' inquiries and questions.
- It is a secure learning environment so that the teacher is able to control who can join the platform and who cannot.
- It enables the teacher to prepare short quizzes and questionnaires for the students.
- It has a special feature that enables the teacher to send notices and alerts to the students.
- It has a Gradebook that enables the students and their parents to view their own marks.

Recommended Learning Resources

- [Introduction to teaching online with Edmodo #edmodo #teachonline - YouTube](#)
- [Edmodo - YouTube](#)
- [Edmodo Blog](#)
- [Webinars and Video Tutorials – Edmodo Help Center](#)
- [Teacher's Lounge - YouTube](#)
- [5-Edmodo Modules 2016.pdf \(seameo.org\)](#)

Schoology

<https://www.schoology.com/>



Screenshot of site Interface 2021. Courtesy of Schoology.

Brief Description

Schoology is an e-learning management system. It enables the teachers to manage their classrooms, hold seminars, and prepare and conduct exams. This service is developed by Schoology Inc. It enables the teacher to perform many activities such as creating working groups, increasing the classroom interaction through conducting purposeful seminars in addition to involving parents in providing support and following up with their children.

Advantages:

- It provides the students with a unique learning experience.
- It allows the students to view the school materials and resources at any time.
- It provides the students with the ability to participate in the assignments and discussions through the internet in an interesting way.

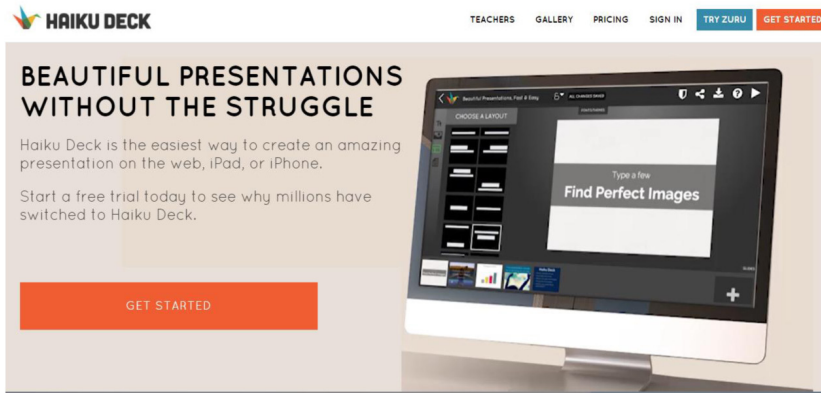
- It is easily accessible with a friendly user interface. It also provides easy-to-use mobile applications.
- Teachers find it simple to use and it enables them to cooperate and share materials with other teachers.
- It is a good record to collect data about the students and their performance.

Recommended Learning Resources

- [New to Schoology? Learn the Basics for Online Learning](#)
- [Schoology - YouTube](#)
- [How to get started with Schoology and key features that make it one of the best LMS to use - YouTube](#)
- [Top Ten Schoology Teacher Tips \(Part 1\) -- Master Schoology 10 Tips at a Time!](#)
- [A Beginner's Guide to Using Schoology | Schoology](#)
- [Teacher-Guide-to-Using-Schoology.pdf \(uconn.edu\)](#)

Haiku Deck

<https://www.haikudeck.com/>



Screenshot of site Interface 2021. Courtesy of Haiku Deck.

Brief Description

Haiku Deck allows the user to create lesson and story presentations in an easy and smooth way. It also allows the user to share them through iOS devices. It was developed by the Haiku Deck company.

Advantages:

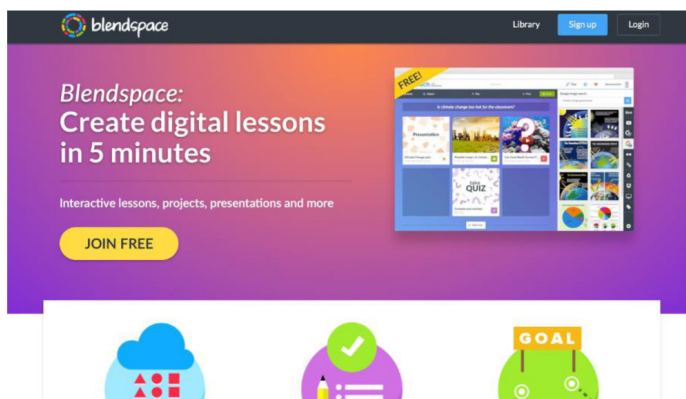
- It is a free application that makes presentations easy, beautiful and fun.
- It enables the user to create and share a public presentation that can be displayed on any device connected to the internet.
- It is an easy application to use to make beautiful presentations.
- It provides the user with a variety of design and picture options.

Recommended Learning Resources

- [Haiku Deck - YouTube](#)
- [Haiku Deck User Guide \(zendesk.com\)](#)
- [Haiku Deck Teachers Guide](#)

Blendspace

<https://www.blendspace.com/lessons>



Screenshot of site Interface 2021. Courtesy of Blendspace.

Brief Description

Blendspace is a digital learning platform that allows teachers to access and create a variety of interactive lessons, presentations, and projects. It allows the integration of technology into the classroom with the use of digital content. This software saves students and teachers time as it collects all the digital content in one place so that there is no need to switch between several applications. You can use Blendspace to search, create and edit interactive lessons that can be easily accessed by and shared with students. It is a free software application.

Advantages:

- You can manage, access, and add digital content easily from YouTube clips, photos, PDF files, Google Drive, and PowerPoints.
- The library has ready-made presentations that you can search,

view and edit.

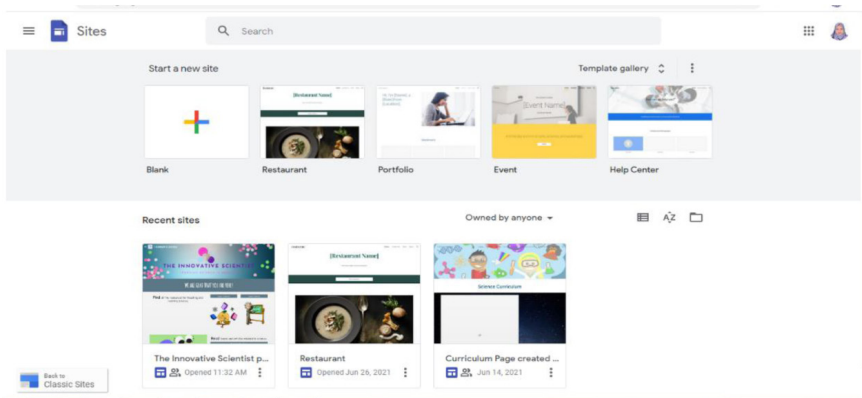
- The quizzes and discussions integrated by Blendspace allow the teachers to monitor and assess students' understanding.
- This software application does not only have everything organized in one place but also allows students to work independently as teachers can create tasks for students to complete on their own.
- A more engaging way to communicate and collaborate with students.

Recommended Learning Resources

- [Blendspace Tutorial](#)
- [Blendspace Tutorial – Richard Rule](#)
- [How to Create Digital Lessons with Blendspace](#)
- [How to use Blendspace to create Interactive Task Cards](#)

Google Site

<https://sites.google.com>



Screenshot of site Interface 2021. Courtesy of Google.

Brief Description

Anyone can create their website using Google sites without needing to learn to code. This application is extremely useful in education and can be used for sharing curriculum pages, curriculum vitae, educational games and videos, books, worksheets, simulations, and blogs. Moreover, there are few ready-made templates.

Advantages:

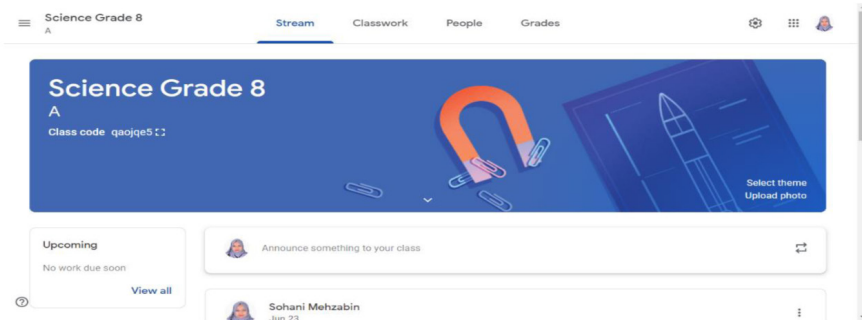
- Simple, standard, and easy to use.
- Runs smoothly without any lagging.
- Users can design without knowing any code.
- Integration of other applications such as Google Maps, Google Forms, YouTube, etc.

Recommended Learning Resources

- [Get started with Google Sites](#)
- [How to use Google Sites - Sites Help](#)
- [20 Google Sites Tips and Tricks](#)
- [Google Sites Tutorial](#)
- [Google Sites home](#)
- [How to Use Google Sites - Tutorial for Beginners](#)

Google Site

<https://classroom.google.com>



Screenshot of site Interface 2021. Courtesy of Google.

Brief Description

One of the easiest applications for class organization and management is Google Classroom. It can be used for communication between students and teachers. Teachers can create different classes and sections where they can post worksheets, videos, slides, assignments and can assign deadlines as well. Moreover, students can communicate by posting in the stream or by commenting on teachers' posts. Furthermore, teachers can conduct online classes by sharing the Google Meet link inside Google Classroom.

Most importantly, it is free for all users.

Advantages:

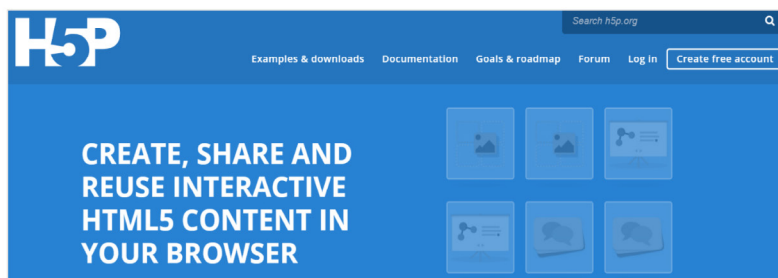
- Teachers and students can communicate effectively.
- Smooth and friendly user interface.
- Provides the option to integrate other applications such as Google Meet, YouTube, Google Docs, and Google forms.

Recommended Learning Resources

- [Teachers' Essential Guide to Google Classroom](#)
- [Google Classroom Quick Start Guide](#)
- [How to Use Google Classroom 2020 - Tutorial for Beginners](#)
- [The NEW Google Classroom - Full Tutorial](#)

H5P

<https://h5p.org/>



Screenshot of site Interface 2021. Courtesy of H5P Joubel.

Brief Description

H5P is a content development site that depends on the html5 system. It offers many possibilities for developing interactive educational activities that can be used directly through the web. They can also be integrated with any learning system such as edX or BP. This service is suitable for developing interactive digital content for open courses that are taught through the internet (MOOC).

Advantages

- It is free and open.
- It is used to create, edit and publish content in a standard browser.
- There is no need for local software installation or end-user components.
- The content is HTML5 so it is compatible with mobile devices.
- The content is packaged in a single file.
- It can be easily managed and transferred through websites.
- You can update all its functions with only one update.
- It enables the user to adapt the licensed multimedia content.

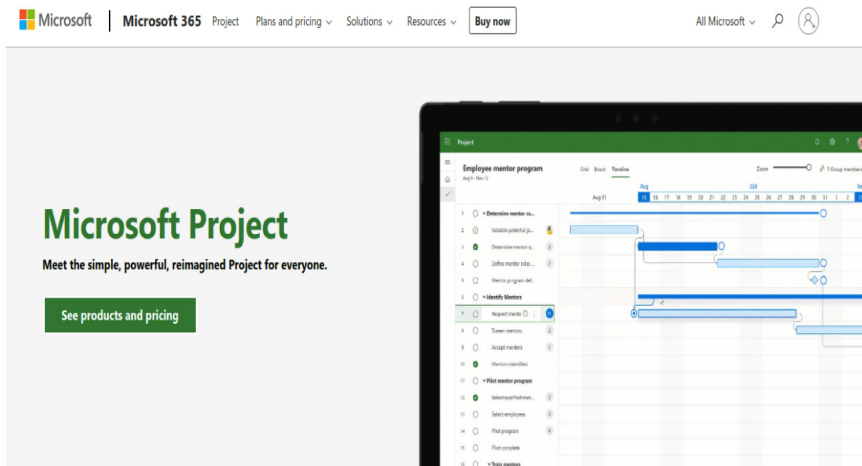
- It enables the user to expand and create their own custom content applications.
- There is a community of users who can share knowledge ...
- It provides many types of content available today.

Recommended Learning Resources

- [H5P Tutorial - Create Interactives for Your LMS or Website - YouTube](#)
- [Creating Interactive Content with H5P - YouTube](#)
- [Content author guide | H5P](#)
- [Tutorial: Creating Course Content with H5P for the Open edX® platform](#)

Microsoft Project

<https://www.microsoft.com/en-ww/microsoft-365/project/project-management-software?market=ae>



Screenshot of site Interface 2021. Courtesy of Microsoft.

Brief Description

Microsoft Project is an application for managing projects, developed by Microsoft. It was designed to help project managers plan, allocate resources, track progress, manage budgets, and analyze workloads.

Advantages

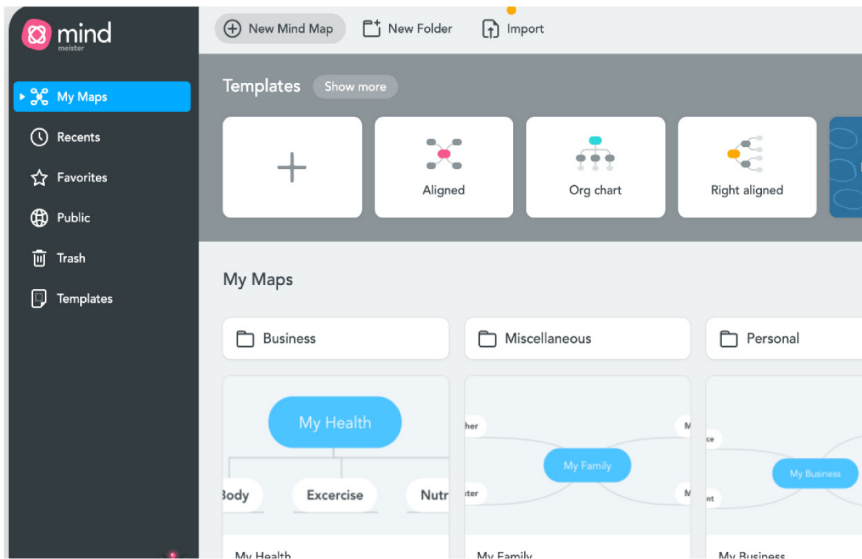
- This software is used to enter tasks, resources, and time periods.
- It enables the user to draw and represent their working plan.
- It enables the user to allocate and organize the resources for each activity.
- It enables the user to follow the progress of the project.
- It enables the user to manage the budget and analyze the workload.

Recommended Learning Resources

- [# 1 MS Project 2019 • Basics in 20 Minutes • Easy](#)
- [Learn Microsoft Project in 15 Minutes - YouTube](#)
- [Microsoft Project and Dynamics 365 Project Operations!](#)
- [Project Blog - Microsoft Tech Community](#)
- [Project help - Office Support \(microsoft.com\)](#)
- [Microsoft Project for the web QuickStart and demo - YouTube](#)

Mind Meister

<https://www.mindmeister.com/>



Screenshot of site Interface 2021. Courtesy of Mindmeister.

Brief Description

MindMeister is a brainstorming website that can be used individually or in groups. It enables easy collaboration, sharing, and presentations by users wherever they are in the world. There are many available templates to be used when starting a new map.

Advantages

- It allows the user to share maps with others using different devices.
- It enables the user to convert maps into PDF, Word, or PowerPoint.
- It enables the user to save maps as images.

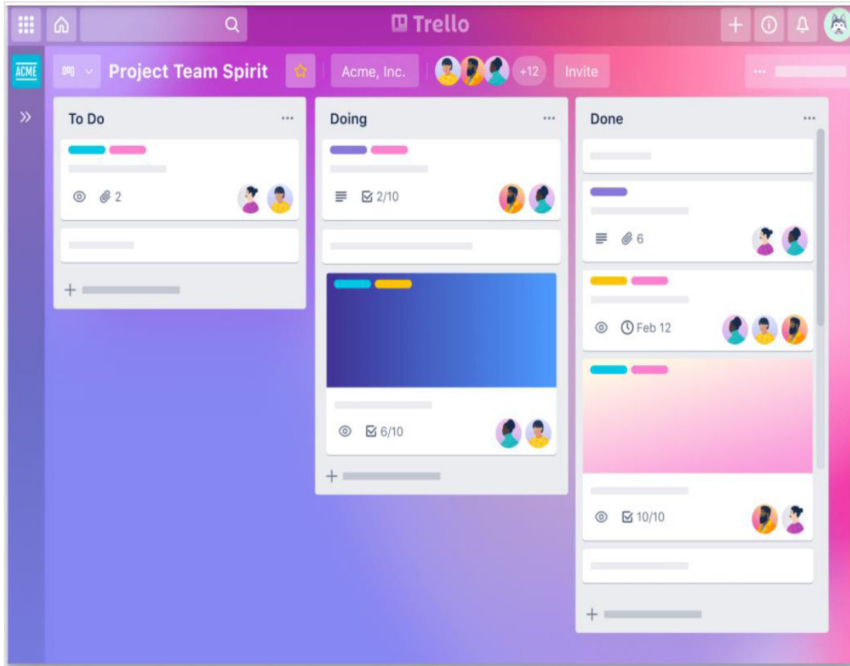
- It can be used on iOS devices.
- It allows the user to synchronize maps with the free account on its website.
- It allows the user to add all types of multimedia and external links to maps.

Recommended Learning Resources

- [MindMeister - YouTube](#)
- [MindMeister Tutorial Videos - YouTube](#)
- [Mind Mapping for Teachers: Tips, Tools, and Lesson Plans \(mindmeister.com\)](#)
- [How to use Mindmeister | Mindmeister TUTORIAL - YouTube](#)
- [Mindmeister | Online Tools for Teaching & Learning \(umass.edu\)](#)

Trello

<https://trello.com/en>



Screenshot of site Interface 2021. Courtesy of Trello.

Brief Description

Trello is an application that was developed by Fog Creek Software corporation in 2010. It manages projects, working plans, and notes. It also organizes timetables for all an individual's tasks. It also supports the individual to work with others. It enables them to participate in writing timetables, notes, and plans for more than one person at the same time.

Advantages

- Fog Creek Software uploaded has created iOS and Android applications so users can use it on iOS and Android devices. You can also view it on various web browsers.
- This application is free within certain limits. It requires payment for certain features.
- All the team members can use one application that enables them to distribute tasks among themselves, to record data and notes in one draft so that all the team members can see each other's work.

Recommended Learning Resources

- [Trello - YouTube](#)
- [Trello Tips & Tricks - YouTube](#)
- [Trello - 5 Fantastic Tips for Teachers - YouTube](#)
- [How To Use Trello in the classroom to save prep time - YouTube](#)
- [Trello Guides: Help Getting Started With Trello](#)
- [Trello Tutorial | Trello](#)
- [Trello Tutorial 2021: A Beginner's Guide to Project Management Basics \(cloudwards.net\)](#)

It might be worth noting here that there are other programs and applications that can be used other than the aforementioned ones. For example:

- [Mindjet](#).
- [Mind Node](#).
- [Simple Mind](#).
- [Idea Sketch](#).

You can refer back to Chapter Eight for more details about these programs and applications.

Suggested Programs and Applications for the Design Stage

There are many programs, applications and services that can be used at the design stage either for designing charts or screens. It might be worth noting that all the applications that were recommended for the planning stage can also be used in this stage. The following are some applications and programs suggested for the design stage. They also include the applications mentioned above and in the Appendices.



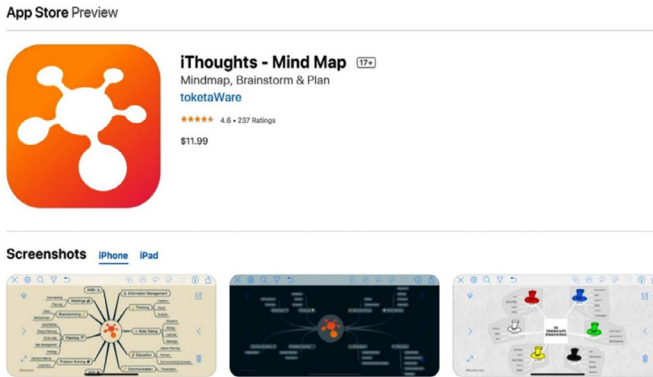
“A designer knows he has achieved perfection not when there is nothing left to add, but when there is nothing left to take away.”

Antoine de Saint-Exupéry,
Writer and Poet



iThoughts

<https://apps.apple.com/us/app/ithoughts-mind-map/id866786833>



Screenshot of site Interface 2021. Courtesy of iThoughts.

Brief Description

iThoughts can be used for drawing brainstorming maps for different projects. It was produced by toketaWare limited. It operates on iOS devices.

Advantages

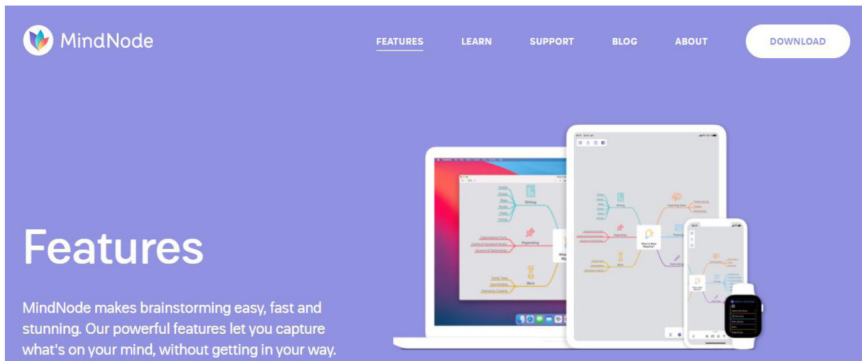
- The use of many colors that helps the users to exchange ideas, set objectives and take meeting notes.
- It can be used on devices such as iPads and iPhones.

Recommended Learning Resources

- [HowTo: Get Started — toketaWare](#)
- [iThoughts Tutorials - YouTube](#)
- [Download Free Mind Map Templates and Examples](#)
- [toketaWare - YouTube](#)
- [HowTo: Video tutorials \(iOS\) — toketaWare](#)
- [iThoughts X \(iOS\) - YouTube](#)
- [iThoughts - YouTube](#)

Mind Node

<https://apps.apple.com/us/app/ithoughts-mind-map/id866786833>



Screenshot of site Interface 2021. Courtesy of MindNode.

Brief Description

Mind Node is an application produced by Ideas On Canvas corporation. It can be used for drawing mind maps, which are useful for visualizing and developing different kinds of projects. The application works using the iOS operating system. This application can be used collaboratively so that you can plan and create mind maps with all the members of the project development team or students. After creating maps, the user can export them in different formats such as images, PDFs, etc. It is characterized by ease of use.

Advantages

- Creating multiple mind maps.
- Creating links between unrelated topics.
- Maintaining complex mind maps automatically so that they can be organized using smart planning.
- Using different colors and fonts.

- You can access all your mind maps on your iPhone, iPad, or Mac using iCloud.
- Sharing interactive documents through the internet using My-MindNode.
- Importing mind maps from other programs.
- Exporting mind maps in PDF and other formats.

Recommended Learning Resources

- [MindNode - YouTube](#)
- [MindNode Review 2021 Mind Mapping Software for Mac - YouTube](#)
- [MindNode Tutorials - YouTube](#)
- [Mindnode Tips and Tricks | Mindnode Tutorial - YouTube](#)
- <https://www.mindnode.com/learn>

Simple Mind

<https://simplemind.eu/>



Screenshot of site Interface 2021. Courtesy of Simple Mind.

Brief Description

Simple Mind is an application specialized in designing mind maps that depend on the Cloud. It was developed by xpt Software & Consulting B.V. It works on almost all types of operating systems including Windows, Android, and iOS.

Advantages

- Preparing multiple mind maps on one page.
- Vertical, horizontal, top-down layout – ideal for idea exchange.
- It's possible to add photos.

- It's possible to add video recordings to the topics. It is available on tablets and mobile phones.
- It's possible to add recording sounds.

Recommended Learning Resources

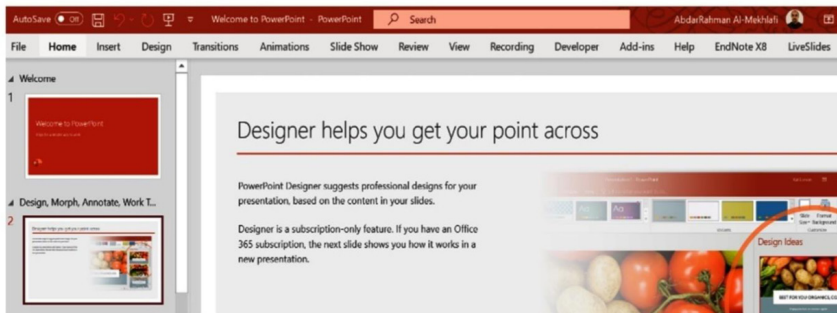
- <https://simplemind.eu/how-to-mind-map/>
- <https://www.youtube.com/channel/UCTzveTwDcAb2G-f0VfKaNLg>
- <https://www.biggerplate.com/mindmap-library/15/SimpleMind>
- <https://www.simpleapps.eu/simplemind/desktop/osx/help>
- <https://simplemind.eu/support/>
- https://www.youtube.com/watch?v=Hn6SI3_AyiM
- <https://www.youtube.com/watch?v=Icyp4gO7uC4&t=0s>

Suggested Programs and Applications for the Production Stage

There are a number of great programs that can be used for developing and creating interactive digital content according to the ADIC model. The following applications are some of the ones we recommend. There are also some other useful applications in Chapter Nine.

PowerPoint

<https://www.microsoft.com/en-us/download/office.aspx>



Brief Description

PowerPoint is a program that was developed by Microsoft. It is part of the Office Package that includes famous applications such as Word and Excel. This product allows the user to create both simple and advanced presentations based on the experience the user has with the program. This program can be used to create and develop interactive digital content if the advanced features of the program are used such as the developer's box, Macros, add-on features that increase the capabilities of the program that are many. They were developed either by Microsoft or

by other companies. The program is flexible and multifunctional with both simple presentations and interactive multimedia.

Advantages

Almekhlafi (2004) mentioned that everybody knows the essentials of PowerPoint. However, but it has advanced features that many people do not know about. Such features make the program one of the sophisticated programs available if used properly. The advanced features of the program can be used to create interactive lectures. The user can also benefit from the following classrooms that can add to the capabilities of the program. Many of these classrooms can be reached using the Microsoft website: <https://appsources.microsoft.com/en-US>

Others can be reached through a direct internet search or through developers such as:

- <https://visualbee.en.softonic.com>
- <https://authorstream.com/>
- <https://www.polleverywhere.com/>
- <https://www.ispringsolutions.com/ispring-free>

The following are some guidelines that designers can benefit from when creating interactive content using PowerPoint.

First: in the interactive digital material, the following should be achieved:

- The principle of non-linear education should be followed so that the learner can move from one place to another within the content without order or sequence.
- Active learning through the interaction of the learner with the content.
- Easy to navigate and move through the content.

- It provides more than one way to access information.
- It provides automatic reinforcement to the learner.

Second: using different types of multimedia:

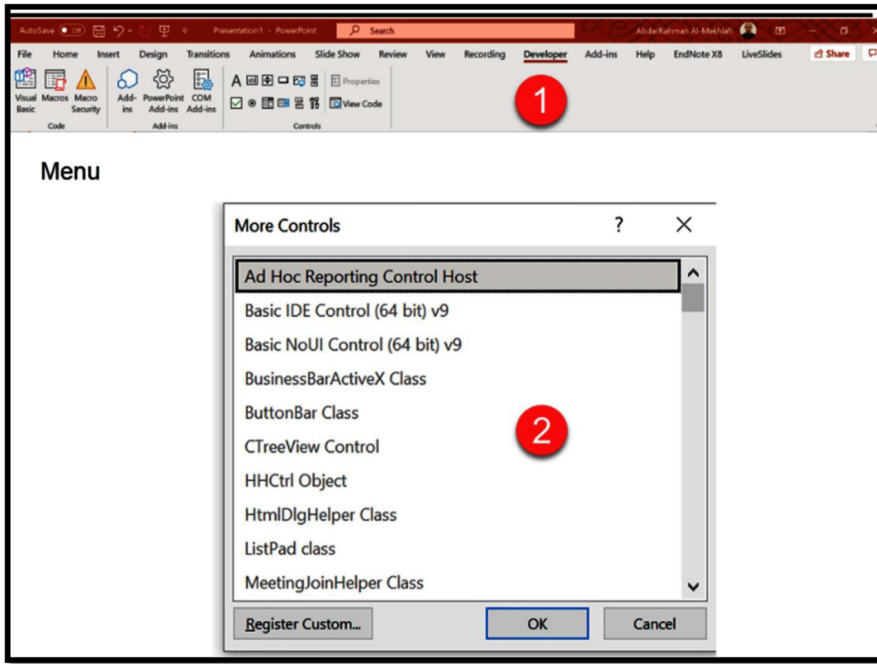
- Texts
- Images and animated pictures
- Sound files
- Animation
- Smart Art
- Videos
- Virtual Reality
- Simulation

Third, using the following strategies to create interactive digital materials with PowerPoint:

- Action Buttons (Menu)
- Hyperlinks (Hotspots, MS files, Internet...)
- Autofeedback (assessment)
- Triggers and Screen tips
- Animation
- Optical Illusions
- Visual Clues
- Smart Art
- Elements Application
- Dropdown Menus
- Auxiliary software

Fourth, using the Developer's Menu:

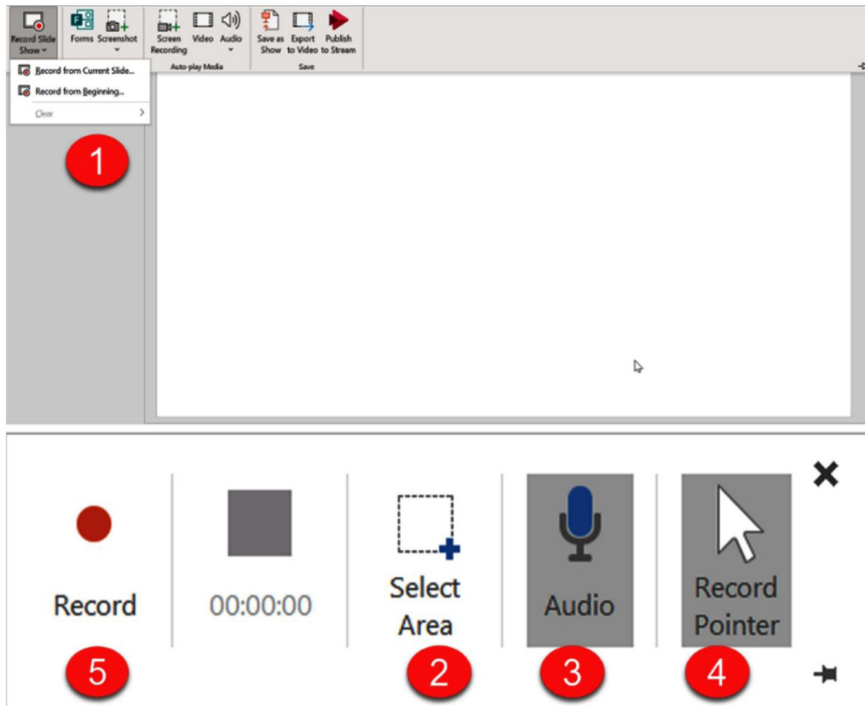
The Developer's Menu enables the designer to create interactive elements smoothly and easily. It might be worth drawing attention to the fact that it can be accessed from File – Options – Customize - Developer.



Developer Menu Screenshot

Fifth, Using the Menu of Recording to record the screen and the content

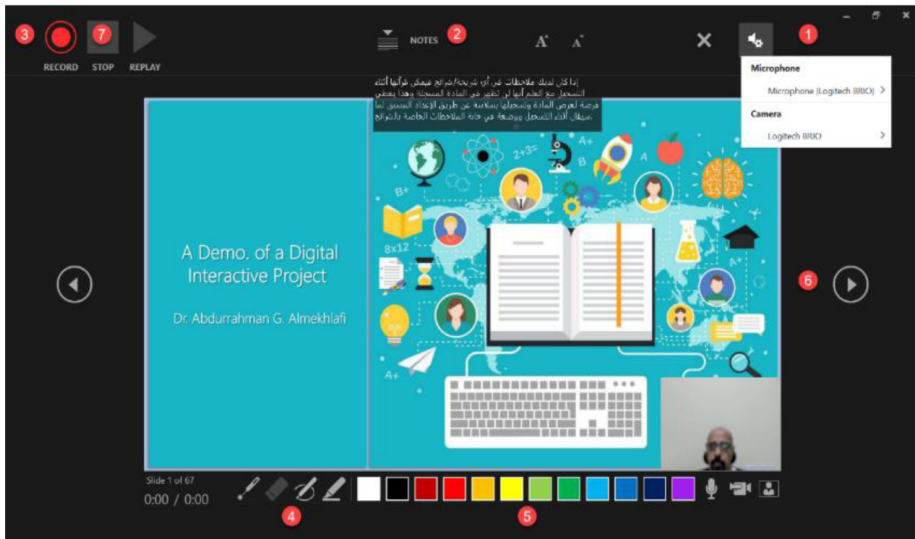
The screen recording feature in PowerPoint has several benefits. It enables the designer to record what is on the screen following the movement of the mouse. They can add sound recording and the result is a video that can be part of the content, or it can be downloaded to the computer and used alone. This feature can also be used to teach or train the targeted group to do something as shown in the recording steps.



Developer Menu Screenshot

Fifth, the Recording Slide feature is also available in the program and can be used to record the materials along with the audio and video explanation of the designer. Then, the recorded material can be used for flipped classroom or self-learning with the possibility of converting the recorded material into a video and modifying it to suit the objectives. Both features are in the recording tab in the latest version of PowerPoint. It is worth noting that screen-recording can be accessed from the Insert menu.

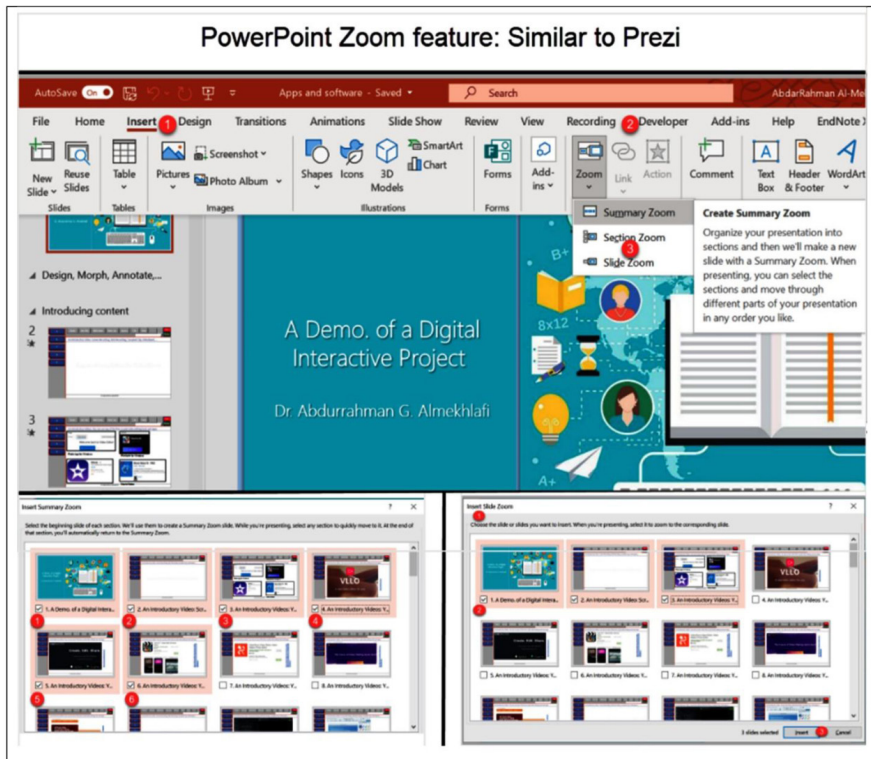
The Latest Version of PowerPoint Screenshot



Six, zoom in and zoom out feature in the latest version of PowerPoint (Zoom)

The zoom feature is one of the characteristics that attracts designers. It is similar to Prezi. However, this feature in PowerPoint allows the use of the feature in three different styles such as presentation summary, production sections, and slides summary.

Zoom in and zoom out screenshot

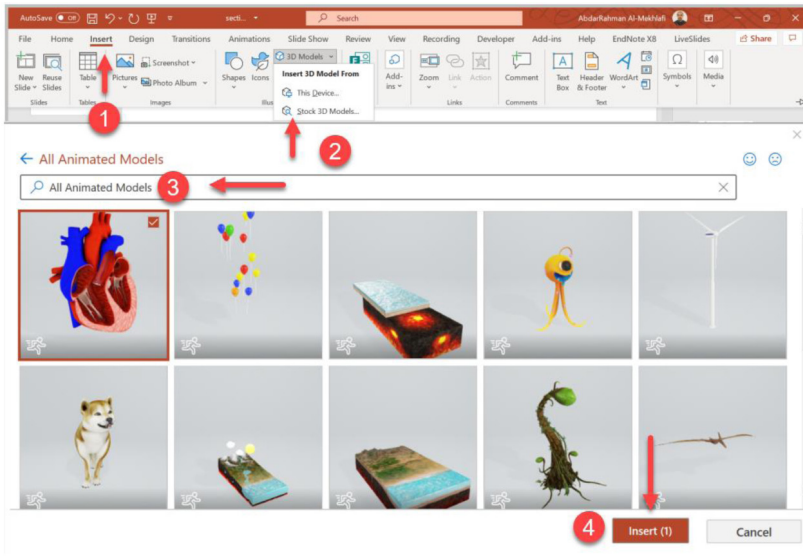


Seventh, using 3D models and icons in the illustrations group in the Insert menu.

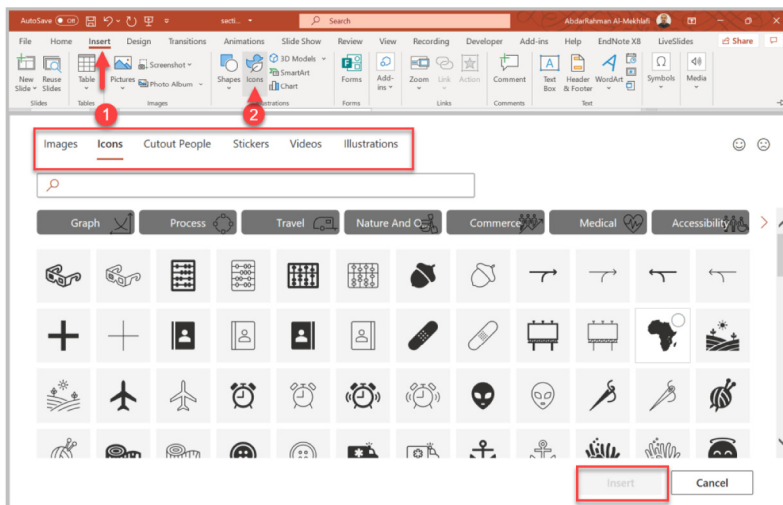
The 3D model library is provided for you to use. Using these models can take your project to the next level. Note that you can also use animations to make the animated 3D models even more creative and effective.

● **CHAPTER SEVEN** Suggested Applications and Programs for the Digital Interactive Content

ADIC.. Dr. Abdurrahman Ghaleb Almekhlafi



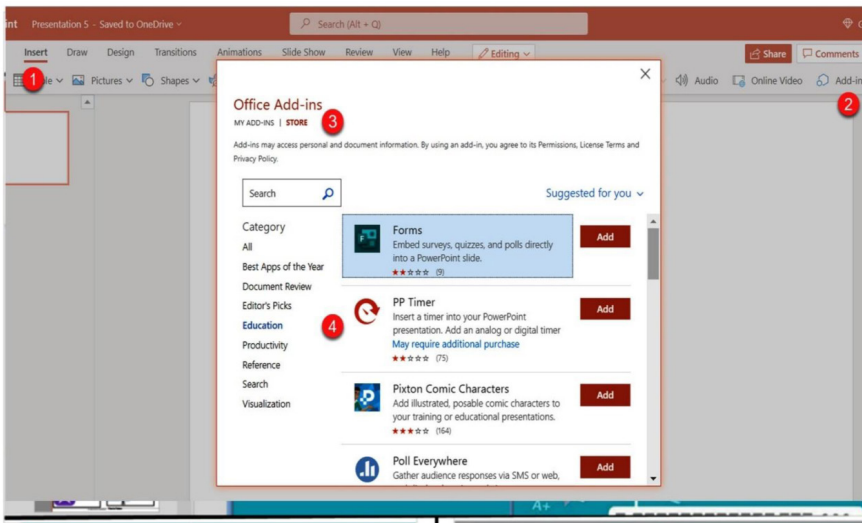
Similar to the 3D model library, I recommend you use the icons library available from the Insert menu, the Illustrations group. There is a quite good number of different categories of icons that you can make use of when creating your digital interactive content project (see the screenshot below).



Eighth, Add-ins – Add-ons – Extensions – Plug-ins

There are many extensions available linked to the original programs whether they are produced by the same company or by other companies. Such additions or extensions increase the capabilities of the original program in a way that enables the designer to produce real interactive digital content. For instance, in the case of the PowerPoint program, it is possible to use many add-ins that achieve interactivity in the developed content. However, sometimes such add-ins are blocked by institutions for security or privacy reasons. Dozens of such add-ins can be inserted using the icon: Insert in the PowerPoint. Then, search for Office Add-ins by clicking on Store as in the image below.

Screenshot of Insert Menu

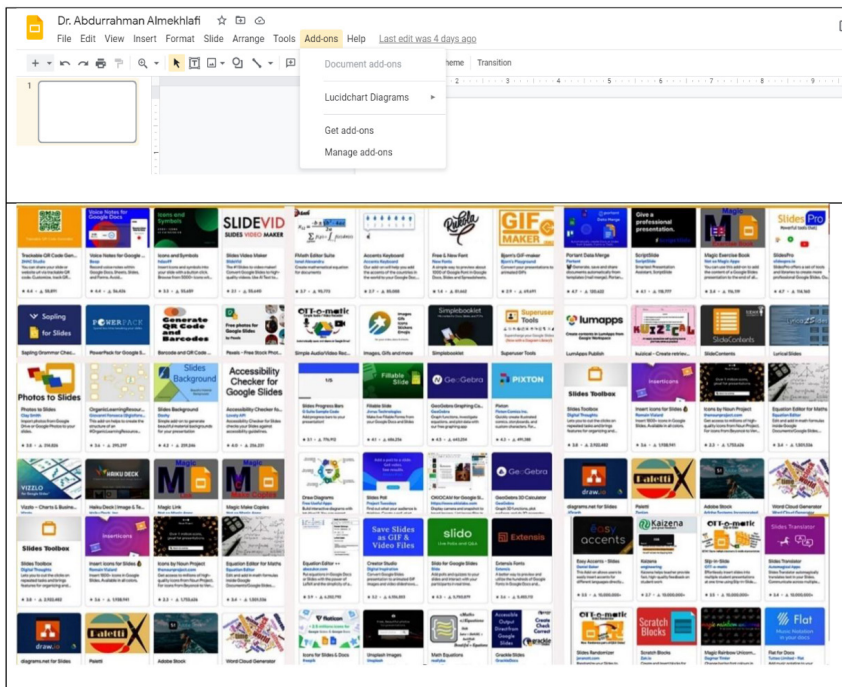


Recommended Resources for Learning PowerPoint

- [The Beginner's Guide to Microsoft PowerPoint - YouTube](#)
- [3 PowerPoint HACKS for INSTANT Improvement \(incl. Morph between Shapes\) - YouTube](#)
- [Animated PowerPoint Slide Design Tutorial - YouTube](#)
- [PowerPoint Slide Design from Beginner to EXPERT - YouTube](#)
- [PowerPoint Tips for Teachers](#)
- [Presentation Process](#)
- [How to Drop Down Menu in PowerPoint](#)
- [How to Create Animated Collapsible Sidebar](#)
- [Sliding Navigation Menu](#)
- [ESL PPT Bomb Game Collection](#)
- [Rusnak Creative PowerPoint Games](#)
- [Bhavesh Shaha - PowerPoint Games](#)
- [How to create an interactive game in PowerPoint](#)

Google Slides Add-ons

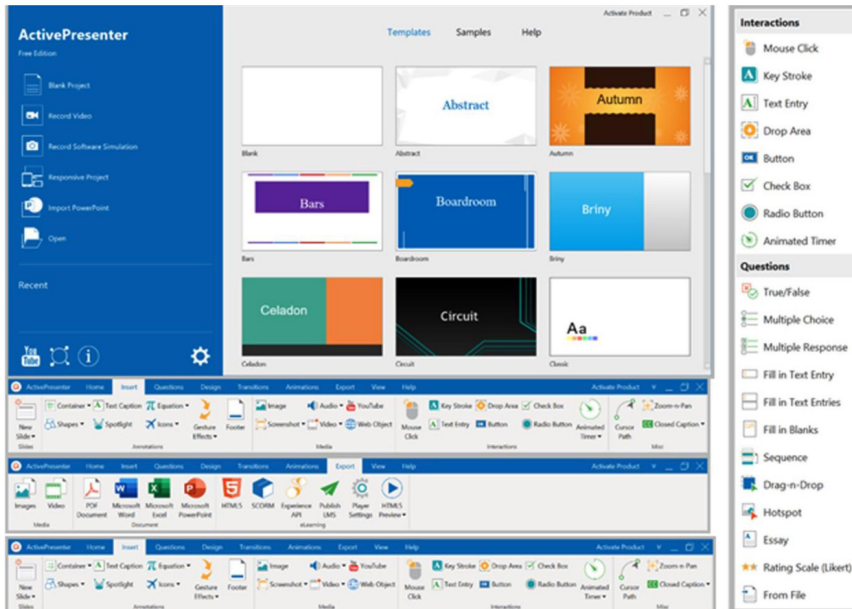
It is worth noting that if the designer wants to use Google Slides as a platform for developing interactive digital content, they can use many Add-ins and they can be reached in the same way as mentioned above while using Google Slides (see the image after the recommended resources).



A Screenshot of some of the add-ons that can be used with Google Slides

ActivePresenter

[Video Editor & eLearning Software \(atomisystems.com\)](http://atomisystems.com)



Screenshot of ActivePresenter Interface 2021. Courtesy of Atomi Systems.

Brief Description

ActivePresenter can be used to develop educational interactive materials. The program has many useful features such as creating interactive examinations, screenshots, editing videos, etc. This program is very similar to PowerPoint. The only difference is that this program has several capabilities that do not exist in PowerPoint.

It is a screencasting, video editor, and eLearning authoring tool. It does not only record your screen but also has features that allow you to edit recorded videos. By using ActivePresenter, you can create demonstration videos, interactive eLearning

materials, and software simulations. This helps you make learning more enjoyable and appealing to the students. The application is free.

Advantages

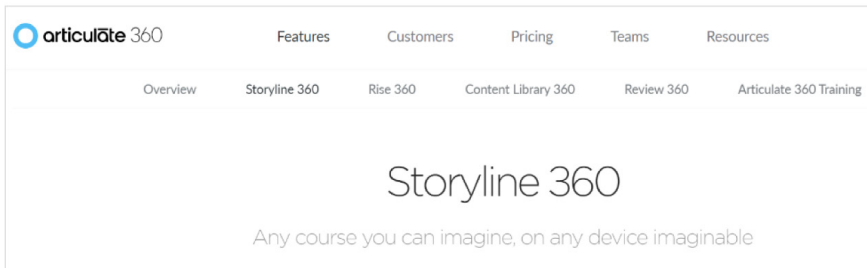
- User-friendly as there are easy steps to follow.
- Produces high-quality videos.
- There is no time limit for what you create.
- Includes basic and advanced video editing tools.
- There are different video formats you can choose from to export the video content.

Recommended Learning Resources

- [Active Presenter Tutorial](#)
- [Active Presenter YouTube Channel](#)
- [Active Presenter User Community](#)
- [Active Presenter User Manual](#)
- [Active Presenter Tutorials for Beginners](#)
- [Creating a Login Screen in Active Presenter](#)
- [Create Interactive Quizzes](#)
- [Creating Software Simulations](#)
- [Create Counting Money Game](#)
- [How to Use Zoom-n-Pan](#)

Articulate 360

<https://articulate.com/360>



Screenshot of Articulate 360 Interface 2021. Courtesy of Articulate Global

Brief Description

A program that provides all the needs of the subscriber to develop interactive educational material and to share them with the rest of the world. It also provides the necessary training to improve the user's performance. The content can be saved so that it is compatible with various devices including smartphones, tablets, and computers. This program depends on the subscription system. The subscriber receives the latest updates.

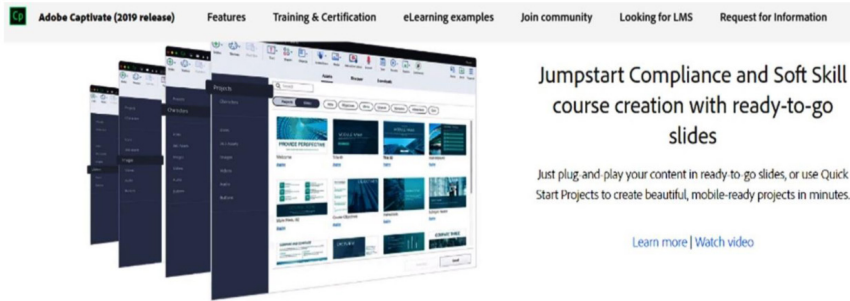
The subscriber can choose between two design mechanisms: storyline or rise. The difference between the two types is that storyline depends on using the slides in a sequence, while the rise depends on the Cloud that allows more than one user to share their work — an interactive website in which lists, videos, and quizzes can be added.

Recommended Learning Resources

- [Articulate 360 - YouTube](#)
- [Articulate 360 Tutorials - E-Learning Heroes](#)
- [Watch Rise 360 Tutorials - Articulate 360 Training](#)

Adobe Captivate

https://www.adobe.com/ae_en/products/captivate.html



Screenshot of Adobe Captivate Site Interface 2021. Courtesy of Adobe.

Brief Description

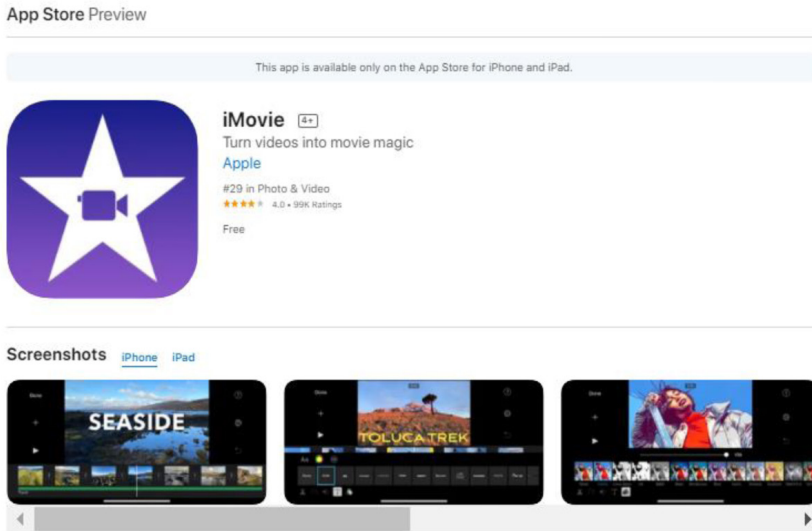
Adobe Captivate is a program to develop suitable content for e-learning in web formats such as HTML5. It enables the user to produce content in MP4 format. This program enables the user to use left and right mouse clicks, keyboard strokes, animations, and screenshots.

Advantages

- Enabling cross-device learning.
- Supporting interactive learning of students.
- Supporting the educational needs of students.
- Supporting cooperative learning.
- Supporting the educational needs of the students of determination.
- Evaluating the performance of the teachers.

iMovie

<https://apps.apple.com/us/app/imovie/id377298193>



Screenshot of iMovie page interface 2021. Courtesy of Apple inc.

Brief Description

iMovie is one of the most famous and simple programs and applications. It was developed by Apple. It enables the user to create video clips and edit and share them. The application uses the iOS operating system.

Advantages

- It provides the user with the ability to automatically format the video so that it saves time and effort.
- Adding several recorded videos or those that are uploaded from the internet.
- The ability to control the speed of the recorded video in detail as well as the number of repetitions for each addition of imag-

es or movements or videos. It also enables the user to control the volume of the sound.

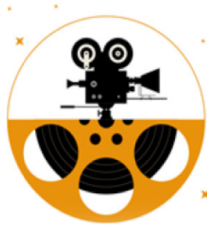
- This application is available totally free of charge and on iOS and Macs.
- One of its beautiful features is that the user can upload it on iPad or iPhone. After that, they can continue using it on Mac devices.

Recommended Learning Resources

- [iMovie - Official Apple Support](#)
- [iMovie Tutorial for Beginners - YouTube](#)
- [iMovie for Beginners - 2021 Detailed Tutorial - YouTube](#)
- [Everyone Can Create Video on Apple Books](#)

Windows Movie Maker

<https://www.microsoft.com/en-us/p/movie-maker-video-editor/9mvfq4lmz6c9#activetab=pivot:overviewtab>



Movie Maker & Video Editor for Windows

Kingloft • Photo & video

🔗 Share

Movie Maker & Video Editor for Windows is a single application along with so many features, that will make your photo and video editing experience a unique one!

[More](#)

Free+

Screenshot of Movie Maker Interface 2021. Courtesy of Microsoft.

Brief Description

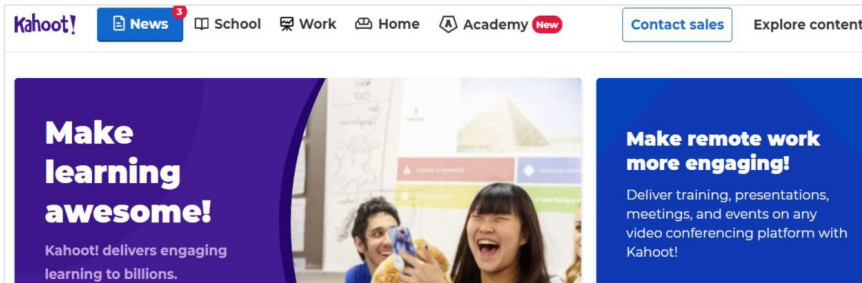
Movie Maker 10 is an easy application, developed by Microsoft. It enables the user to create films and video clips using pictures and ready-made videos and sounds. It provides the user with special features for creating videos such as the ability to cut or add, combining more than one clip, adding backgrounds and effects as well as zooming in and out. The basic version of this application is free while the full version with a number of additional features must be purchased.

Advantages

- The ability to combine photos and videos into clips.
- Ease of editing movies and sharing them via the internet.
- Designing presentations and educational movies.
- Creating documentary movies.
- Editing sound.

Kahoot

<https://kahoot.com/>



Screenshot of Kahoot website Interface 2021. Courtesy of Kahoot.

Brief Description

Kahoot is one of the educational platforms that attract many users, especially in schools. This platform enables its users in the field of education to design and produce examinations in addition to interactive competitions that help to evaluate student performance. This application is very flexible so it can be used as an app or on web browsers. This platform is easy to use and promotes learning through play.

Kahoot enables the teacher to prepare a group of multiple-choice questions. Then, the students can participate in the form of a game or competition through the devices available at school or their own mobiles or iPods, etc. This application supports the Arabic language.

Advantages

- Easy to design and use for both the teacher and the learner.
- It does not require prior registration of the students.
- It is possible to limit the time to answer each question.
- It is possible to add sound effects.
- It is possible to insert video clips and photos.

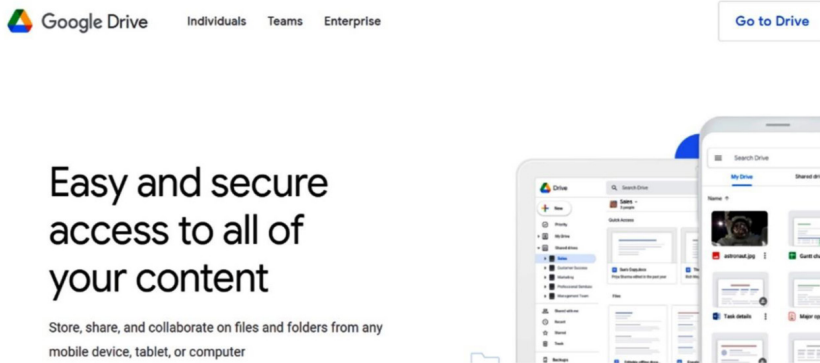
- Motivating through evaluation based on the speed and the correctness of the answers.
- Providing three types of questions (questionnaires, discussions, and tests).

Recommended Learning Resources

- [Kahoot! tutorials | Help resources](#)
- [Kahoot! Blog](#)
- [Kahoot! - YouTube](#)
- [Kahoot Tutorials pdf \(bgu.ac.il\)](#)
- [Kahoot Academy Getting Started Guide \(pdf\)](#)

Google Drive

<https://www.google.com/drive/download/>



Screenshot of Google Drive website Interface 2021. Courtesy of Google.

Brief Description

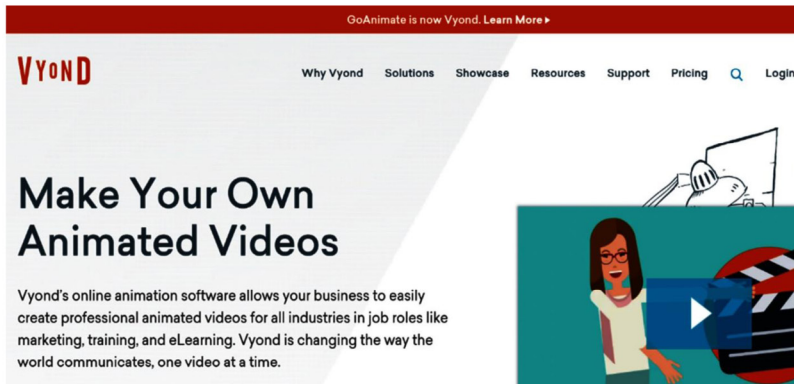
Google Drive is one of the best services for storing files and saving email attachments. It used to share files with several people simultaneously. It has several functions such as creating and sharing different types of files. It also enables the users to attach several types of files to their projects without the need to be part of the project. It can also be used to create questionnaires or tests and then include them in the project.

Recommended Learning Resources

- [What can you do with Drive? - Google Workspace Learning Center](#)
- [How to Use Google Drive | Beginners Tutorial - YouTube](#)
- [Google Drive and Docs Tutorial - YouTube](#)

Vyond

<https://www.vyond.com/>



Screenshot of Vyond website Interface 2021. Courtesy of Vyond.

Brief Description

Vyond is a program that is used to create and make animated videos by merging images. It is considered one of the great programs to make educational presentations and explanations. The program is subdivided into three sections as per the needs of the individual. Every section includes a distinctive interface that determines the duration of the video. It enables the user to add texts, define their fonts and size. The user can also control the inserted images by zooming them in and out. In addition to a number of features that increase the appeal and the interactivity of the video. This program includes many pre-activated forms as well as a huge number of photos, professions, and characters. This program requires that the users log into the program, and they then will be granted a trial period of 14 days. After that, the user is required to officially register in the program. This program is only available on the internet.

Recommended Learning Resources

- [Getting Started Videos and Webinars – Vyond Help Center](#)
- [Vyond - YouTube](#)
- [Vyond Tutorial: 13 Key Lessons to Get Started \(in 2021\) - YouTube](#)
- [Vyond Tutorial: The Complete Guide to Vyond Studios \(ruedriis.com\)](#)

The background of the page features a hand in a blue shirt sleeve typing on a silver laptop keyboard. The scene is overlaid with a green vertical bar on the left and a blue horizontal bar below it. The entire background is decorated with a network of white lines and circles, along with faint icons of people and charts. The text is presented in a clean, sans-serif font.

CHAPTER EIGHT

Additional Suggested Programs for the Planning Stage

Introduction

These are additional applications and programs taken from a number of electronic communication platforms. They are presented to you so you can benefit from them when planning your own interactive teaching and learning. You can merge them with the ones previously recommended in this book. It is worth noting that where there are screenshots of the program from its platform, the program preserves the ownership rights. We have included learning resources that can reliably help users to learn and improve their knowledge and skills concerning each application.

Popplet Lite

[Popplet | Mind maps made easy](#)



Screenshot of Popplet app. website Interface 2021. Courtesy of Popplet.

Brief Description

Popplet is a special application for designing mind maps and drawing/inserting photos. It was developed by Nation, and it runs on the iOS operating system. It was designed to draw concept maps with the possibility of collaboration with others to

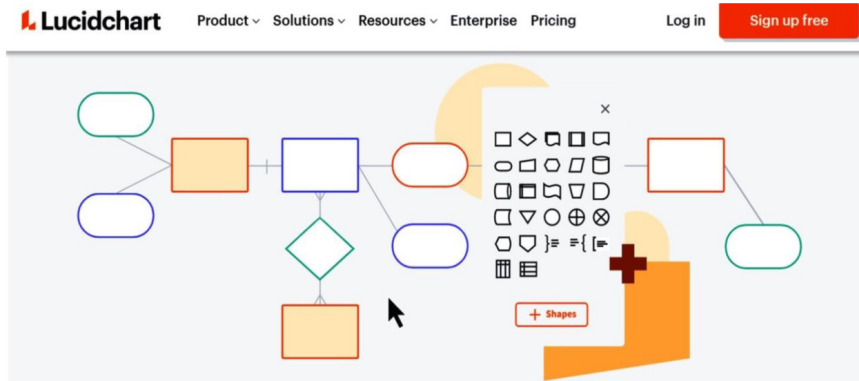
draw such maps. The maps appear in the form of branching trees. To start creating such maps is easy and simple because they begin with a central element, the main title of the map, and then everything branches off from it. The changes are automatically saved in the application.

Recommended Learning Resources

- [Tutorial: Getting Started – All About Popples | Popplet](#)
- [Popplet How to Video for the Classroom - YouTube](#)
- [How to use the app Popplet - YouTube](#)

Lucidchart

<https://www.lucidchart.com/pages>



Screenshot of site Interface 2021. Courtesy of Lucid Software Inc.

Brief Description

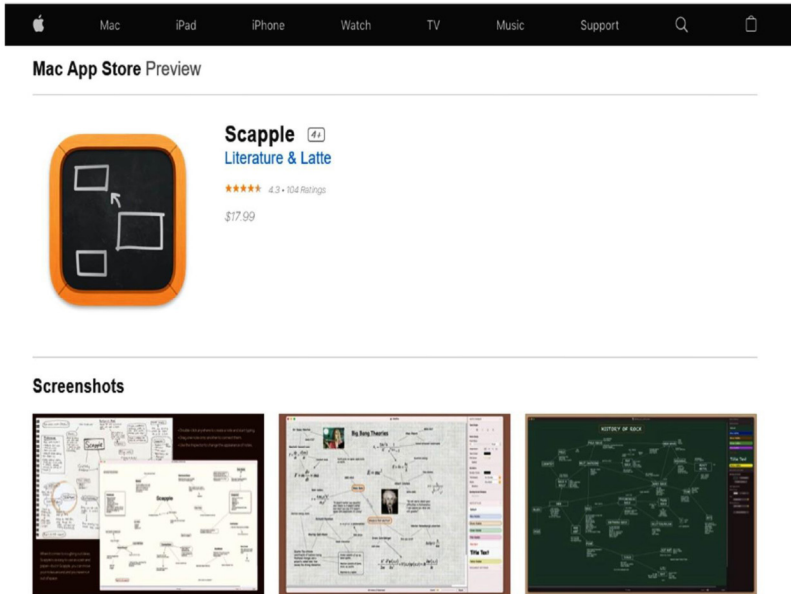
Lucidchart is a service that presents a wide variety of tools to organize your ideas. It includes searching for photos in Google. There is also a chat feature. You can collaborate with others in real-time. The collaborative features are available for the paid plans. However, you can access the free library that includes free templates and shapes.

Recommended Learning Resources

- [Getting Started in Lucidchart: The Basics | Lucidchart Blog](#)
- [Lucidchart - YouTube](#)
- [Lucidchart tutorial for beginners - YouTube](#)

Scapple

<https://apps.apple.com/us/app/scapple/id568020055?mt=12>



Screenshot of Scapple app. Interface 2021. Courtesy of [Literature & Latte](#)

Brief Description

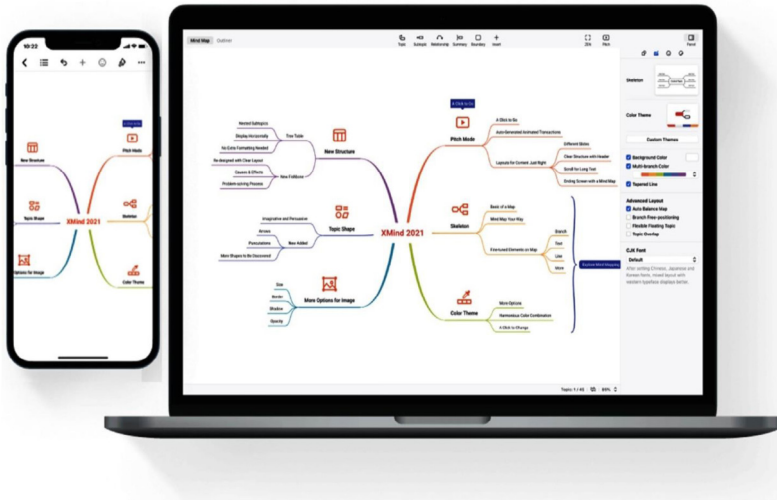
Scapple is an application that works as a virtual page, enabling the user to record notes anywhere and then link them using lines or arrows. Unlike the other applications, this application is not free.

Recommended Learning Resources

- [How to Use Scapple to Quickly Plot Your Next Book | by Kylie Ross | Tech Savvy Creatives | Medium](#)
- [How To Use Scapple Effectively. Brainstorming is the most important...](#)
- [An Introduction to Scapple \(Abridged\) - YouTube](#)

Xmind

<https://www.xmind.net>



Screenshot of Xmind app. Interface 2021. Courtesy of XMind Ltd.

Brief Description

Xmind is an application that is also available on web browsers. It is used for creating mind maps to exchange ideas. This application comes in a version that is open and another one is commercial for those who want other features. This application allows the user to save their charts in different formats such as HTML or PDF. It runs on different operating systems.

Recommended Learning Resources

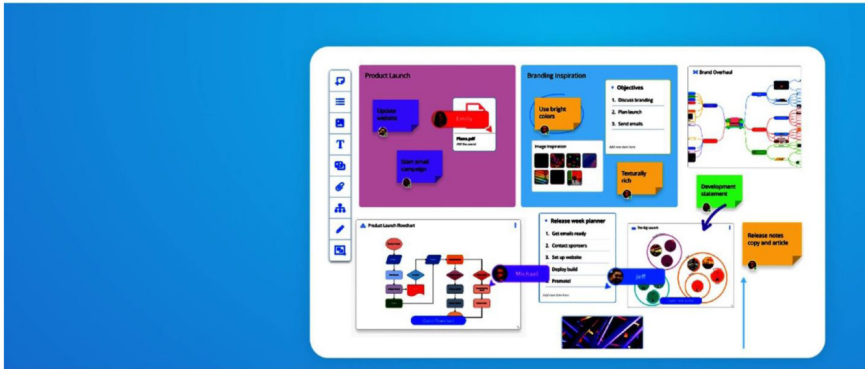
- [XMind - YouTube](#)
- [XMind Blog - XMind: The Most Popular Mind Mapping Software on The Planet.](#)
- [XMind Support Center](#)
- [XMind Tutorials - YouTube](#)

Ayoa

<https://www.ayoa.com/>



Home Whiteboards Mind Maps



Screenshot of Ayoa app. Interface 2021. Courtesy of Ayoa

Brief Description

Ayoa is a service that enables the user to create mind maps. It contains a unique blend of features for drawing mind maps and managing tasks that allow the users to generate and act on ideas.

Recommended Learning Resources

- [Ayoa - YouTube](#)
- [Ayoa Tutorials - YouTube](#)

CHAPTER NINE

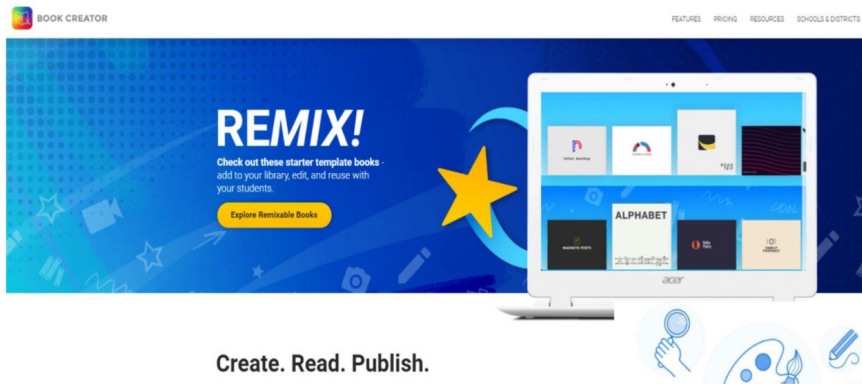
Additional Suggested Programs for the Production Stage

Introduction

These are additional applications and programs you may benefit from in creating your own interactive teaching and learning model in the production stage. You can merge them with the ones previously recommended in this book. It is worth noting that where there are screenshots of the program from its platform, the program preserves the ownership rights. I have included learning resources that can reliably help users to learn and improve their knowledge and skills concerning each application.

Book Creator

[- Bring creativity to your classroom - Book Creator app](#)



Screenshot of Book Creator site Interface 2021. Courtesy of **TOOLS FOR SCHOOLS, INC.**

Brief Description

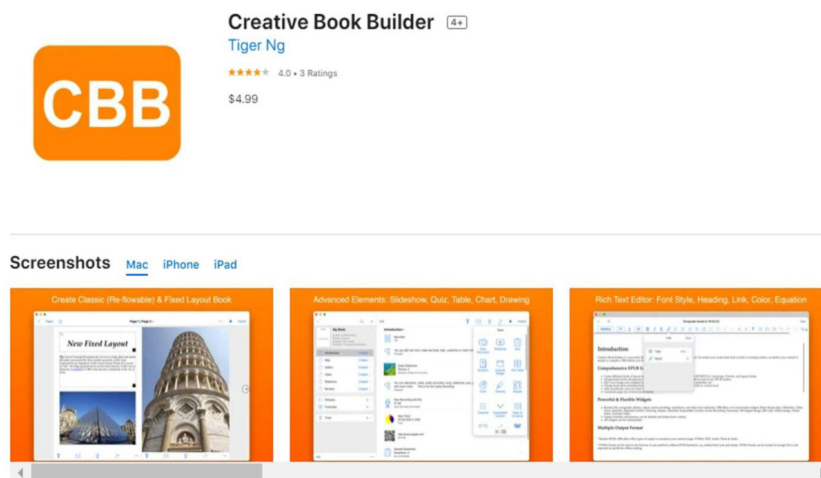
Book Creator for iPad was developed by Red Jumper. This application can be used for creating e-books, sharing, and reading them on iPads. This application is flexible and easy to use. It can be used by students in different educational stages to read eBooks or even create themselves as a project.

Recommended Learning Resources

- [Resources for teachers - Book Creator app](#)
- [Book Creator - YouTube](#)
- [Book Creator Online Tutorial | Book Creator|How To Make a Book|book creator tutorial for teachers - YouTube](#)
- [How to Create a Book with Book Creator: 9 Steps \(with Pictures\) \(wikiphow.com\)](#)

Creative Book Builder

<https://apps.apple.com/us/app/creative-book-builder/id451041428>



Screenshot of Creative Book Builder App. **Interface 2021**. Courtesy of **Tiger Ng**

Brief Description

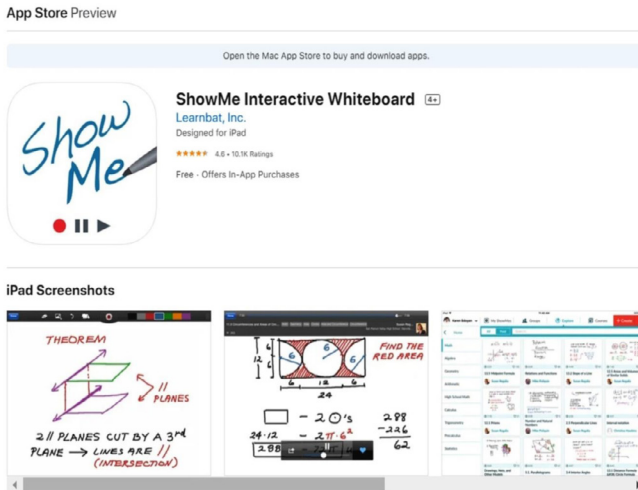
Creative Book Builder is one of the applications through which the user can create e-books so that these e-books can be read in different formats such as iBook, EPUB reader, and PDF. The application was developed by Tiger Ng corporation. It runs on different operating systems such as iOS, Android,..etc.

Recommended Learning Resources

- [Get Creative: Book Builder Blogspot](#)
- [Creative Book Builder \(getcreativebookbuilder.blogspot.com\)](http://getcreativebookbuilder.blogspot.com)
- [How to use creative book builder - B+C Guides \(brit.co\)](#)
- [Creative Book Builder Tutorial- YouTube](#)
- [Creative Book Builder - All about apps in YOUR classroom! \(appsinclass.com\)](http://appsinclass.com)

ShowMe

<https://www.showme.com>



Screenshot of ShowMe App. Interface 2021. Courtesy of ShowMe.

Brief Description

ShowMe application was developed by Learnbat corporation. It runs on iOS. It enables the user to record sound on a white page that you can write on and share it with others using different means. It helps the user to convert their device to an interactive board. This program can also be used to create brainstorming activities for projects. You can also share and work collaboratively with others using this application. It has a number of colored pencils that help create interesting, recorded audio lessons. Among its features is recording the lessons in your own application simply and instantly.

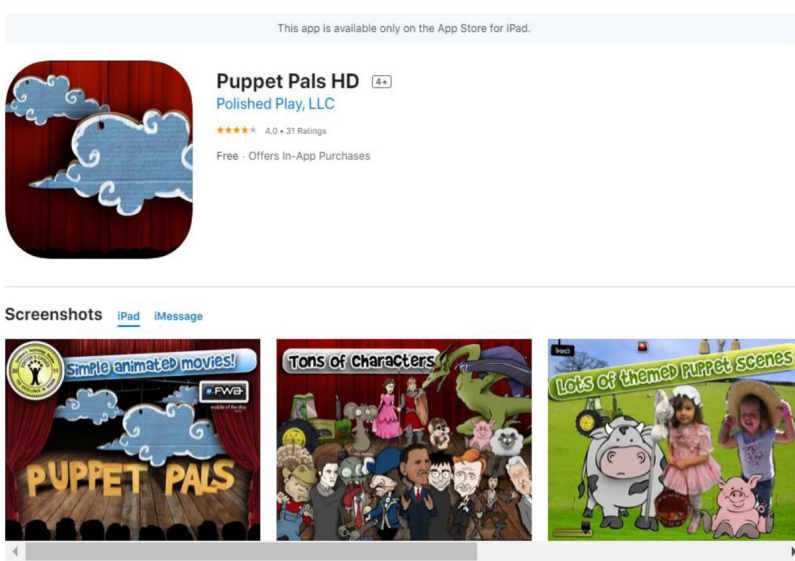
Recommended Learning Resources

- [Learn and Discover | ShowMe Online Learning](#)
- [ShowMe - YouTube](#)
- [How to use the app Show Me in the classroom - YouTube](#)

Puppet Pals HD:

<https://apps.apple.com/us/app/puppet-pals-hd/id342076546>

App Store Preview



Screenshot of Puppet Pals HD App. Interface 2021. Courtesy of Polished Play, LLC

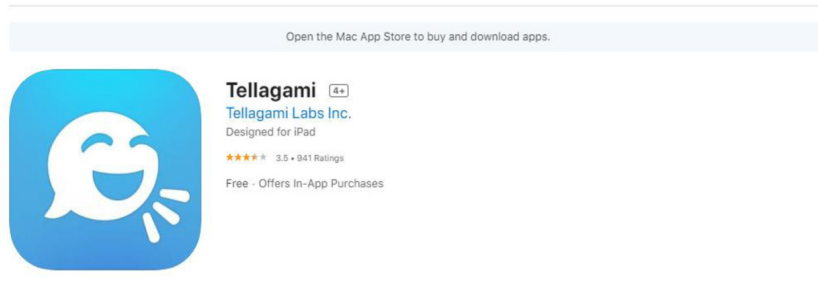
Brief Description

Puppet Pals HD is an application that was developed by Polished Play. It enables the user to design narrative theatrical scenes. The designer can choose from the available characters in the application and then add motion in addition to selecting the appropriate background that suits the design. After that, the scene can be saved and displayed through any device that runs the iOS operating system.

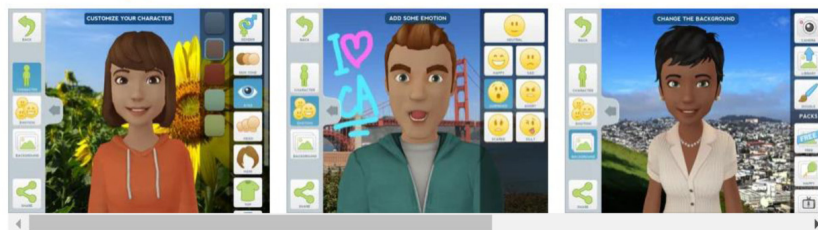
Tellagami

<https://apps.apple.com/us/app/tellagami/id572737805>

App Store Preview



Screenshots iPad iPhone



Screenshot of Tellagami App. Interface 2021. Courtesy of Tellagami Labs Inc.

Brief Description

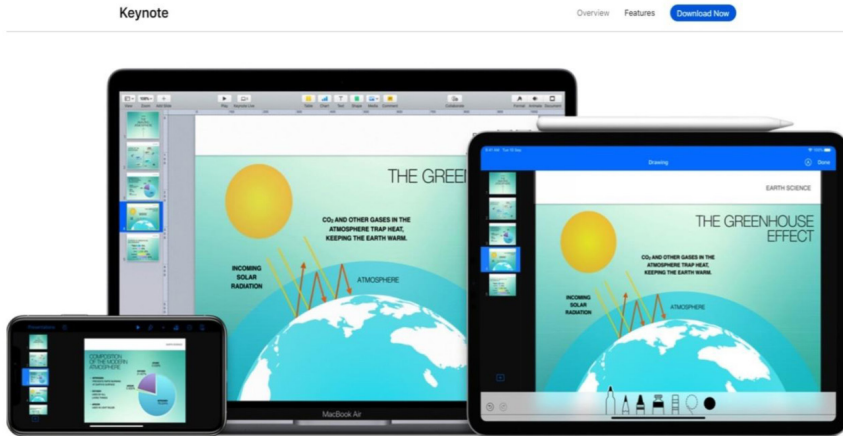
Tellagami is an application that was produced by Tellagami corporation. It enables the user to design videos about an animated character whose name is Gami. Then, you can share these files with others whose devices run on iOS or Android operating systems.

Recommended Learning Resources

- [Tellagami App teacher tutorial - YouTube](#)
- [EdTech Tutorial: How to develop characters using the App 'Tellagami'. – EDTECH 4 BEGINNERS](#)

Keynote

<https://www.apple.com/ae/keynote/>



Screenshot of Keynote Interface 2021. Courtesy of Apple Inc.

Brief Description

Keynote was developed by Apple. It is one of the applications that can be used to create presentations on Apple devices such as iPads and iPhones. It is easy to use. It enables the user to insert different multimedia elements such as photos, graphs, tables, and various shapes as well as animations. It runs on devices that use the iOS operating system. It enables the user to design games and educational activities using the ready-made templates available in the application.

Recommended Learning Resources

- [20 Fantastic Tutorials for Learning Apple Keynote \(speckyboy.com\)](#)
- [Beginner's Guide to Apple Keynote - YouTube](#)
- [Keynote - Official Apple Support](#)

Magisto

<https://www.magisto.com>

A screenshot of the Magisto app's registration interface. It features a white background with a green "Create account" button. The text "Join Magisto, it's free." is prominently displayed at the top, followed by the tagline "Make videos, share your stories." Below this are three input fields: "Full name", "Email", and "Password". The "Password" field includes a small eye icon for toggling visibility. The "Create account" button is a solid green rectangle with white text.

Screenshot of Magisto App. Interface 2021. Courtesy of MAGISTO/Vimeo.com, Inc.

Brief Description

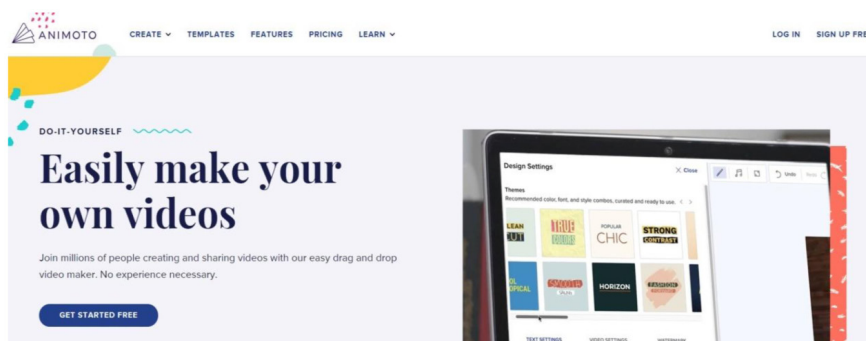
Magisto is an application that was developed by the Magisto corporation. It enables the user to produce video clips simply and easily. Then, they can be shared with others.

Recommended Learning Resources

- [Magisto - Smart Video Editor & Maker - YouTube](#)
- [Magisto Video Tutorial - YouTube](#)

Animoto Video Maker:

<https://animoto.com>



Screenshot of Animoto App. Interface 2021. Courtesy of ANIMOTO.

Brief Description

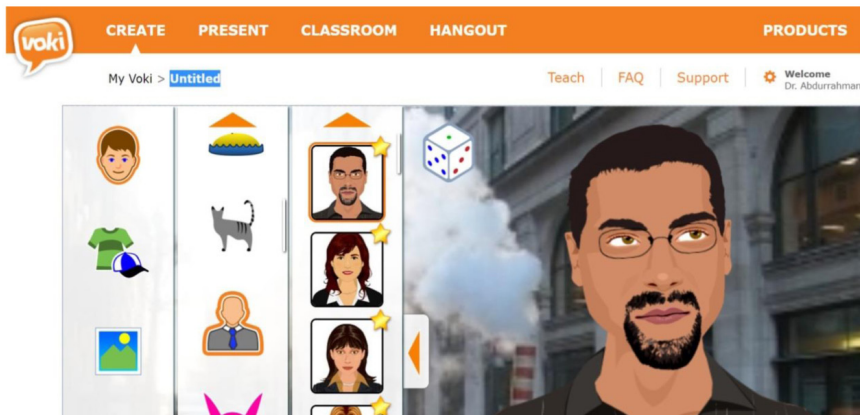
Animoto Video Maker is an application that was developed by Animoto Inc. It is a free application that can be used to produce video clips either from images or by merging more than one clip. The user is also able to add interactive elements into the produced clip.

Recommended Learning Resources

- [How to make a video in Animoto | Step by step tutorial - Animoto](#)
- [Animoto - YouTube](#)
- [How to Create a Video Using Animoto - YouTube](#)

Voki

<https://www.voki.com/site/create>



Screenshot of Voki Site Interface 2021. Courtesy of Oddcast Inc.

Brief Description

Voki enables the user or the teacher to explain lessons in a new and interesting way by using animated cartoon characters. The application also allows the user to use a group of avatars that can be modified. It enables the teacher to improve the presentation and the explanation of the lesson. It also enables the teacher or the trainer to write a text that can be directly converted into sound using the voice of the selected character. Then, the final product can be saved in the form of a video clip and shared online with others. It is worth noting that some of the characters are only available for the subscribers.

Voki is a software application that allows you to create a talking character by using customized avatars and adding voice to your avatars. The learners are thus able to express themselves as they use a talking character. This educational tool can be used by teachers and students in different ways such as summarizing

a lesson, presentations, giving instructions, role play, and displaying historical figures. This app makes learning and teaching more fun and interesting.

Voki is a free application, and the basic account allows you to access most Voki characters. The paid version offers additional features.

Advantages

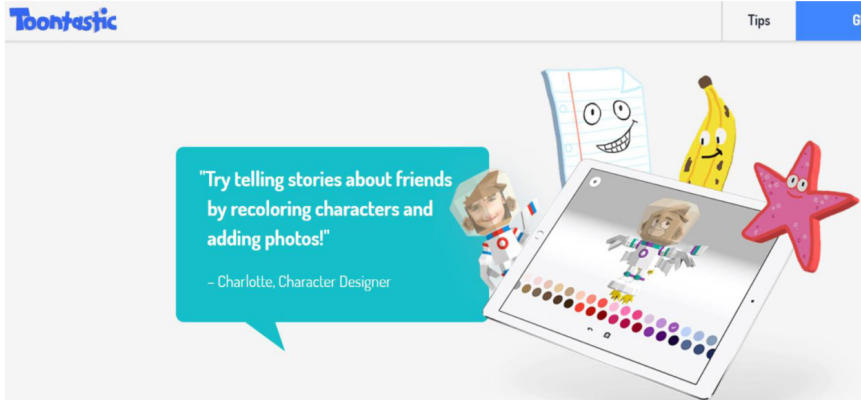
- The app is user-friendly, and users can create their Voki avatars and share their work easily.
- Enables teachers to assign work for students and track their performance.
- Motivates students to participate.
- Students get to demonstrate their understanding and get feedback from the teacher.

Recommended Learning Resources

- [Voki Presenter User Guide](#)
- [How to Use Voki to Engage Learners](#)
- [Voki site support](#)
- [Voki - Teach Home](#)
- [officialvoki - YouTube](#)
- [Voki Tutorial - 2020 - YouTube](#)

Toontastic

<https://toontastic.withgoogle.com/>



Screenshot of Toontastic Site Interface 2021. Courtesy of Toontastic by Google.

Brief Description

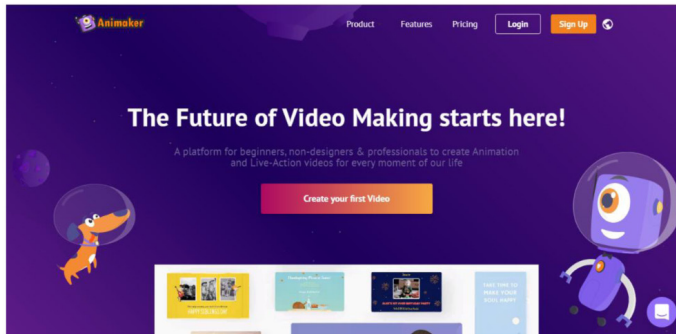
Toontastic is an application that can be used to create educational animations and activities in an amazing and interesting way. This application provides the user with several useful tools that enable the user to create drawings that can be converted into educational animations. Then, they can be saved and shared online in different formats.

Recommended Learning Resources

- [Toontastic 3D | Tips](#)
- [Toontastic App tutorial - YouTube](#)

Animaker

<https://www.animaker.com>



Screenshot of Animaker Site Interface 2021. Courtesy of Animaker Inc.

Brief Description

Software to create animated video content. There is no need to learn to code to create animated videos if you are using this app. This app helps teachers to make interesting, animated content videos or instruction videos which helps them to keep their students engaged during any class may it be online or offline. Obviously, students love watching animated characters or cartoons, so they find it fascinating. Teachers can use the lip-sync feature and record their own voice which makes it more attractive. It has two modes of interface: lite and full.

Advantages

- It is easy to use and it makes lessons engaging and interactive.
- Contains ready-made templates and provides tutorials.
- Users can get creative with fonts, characters, sounds, pictures, detailed features of characters, etc.
- Helps to grab the attention of the audience or students because of the use of animated characters.

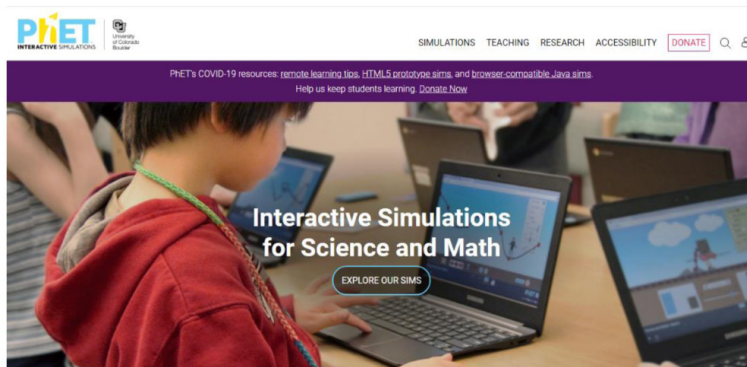
- Teachers find it helpful to explain complex topics using the different expressions of the animated characters.
- Animated videos can be downloaded or shared using a link.

Recommended Learning Resources

- [Animaker Tutorials](#)
- [Animaker YouTue channel](#)
- [How to make Animated Presentations: Tutorial](#)

Phet Simulations

<https://phet.colorado.edu>



Screenshot of Phet Simulations Site Interface 2021. Courtesy of University of Colorado.

Brief Description

PhET Interactive Simulations provides science and math simulations for students to have a more fun experience of the things they are learning. There are many simulations on specific topics with attractive visuals and smooth animation. The most surprising part is that the resources are free. There are also resources, tips, and strategies for teachers looking to use the simulations.

Advantages

- Simulations are easy to use, and instructions are provided.
- It does not require real equipment so it can be used in virtual classes as well as offline classes.
- As it is a virtual experiment, students can play around and do the experiment by themselves with less supervision from teachers.
- Students experience themselves as scientists as they curiously modify the simulations.

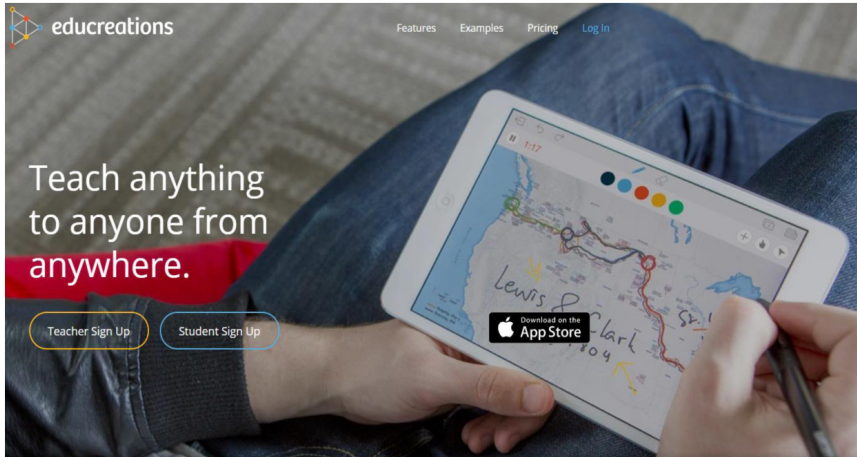
- Teachers find it very helpful as it is safer to use than real experiments with young students.

Recommended Learning Resources

- [PhET Teaching Resources](#)
- [Creating Interactive Simulations: Activity Guide](#)
- [Introduction: How to Use PhET](#)

Educreations

<https://www.educreations.com>



Screenshot of Educreations site Interface 2021. Courtesy of Educreations, Inc

Brief Description

Educreations is an eponymous application and runs on several well-known operating systems. This application allows the user to create video clips and explain them using texts, drawings, and recording sounds. It also enables the user to create rich educational videos with all types of multimedia. They can be used for self-learning, or in the flipped classroom.

Recommended Learning Resources

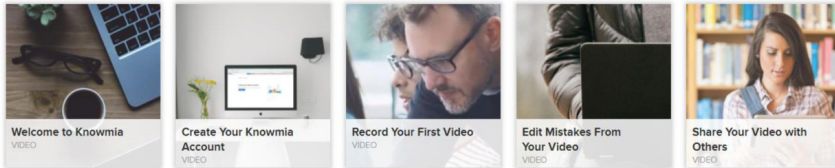
- [Educreations Tutorial | Educreations](#)
- [How to use the app Educreations - YouTube](#)
- [How to use Educreations Tutorial- YouTube](#)

Knowmia Teach

<https://www.techsmith.com/tutorial-knowmia.html>

Start Here

Quickly learn the basics of Knowmia with this getting started series.



All Tutorials

Expand your skills with our full list of Knowmia tutorials.

Screenshot of Knowmia site Interface 2021. Courtesy of TechSmith Corporation

Brief Description

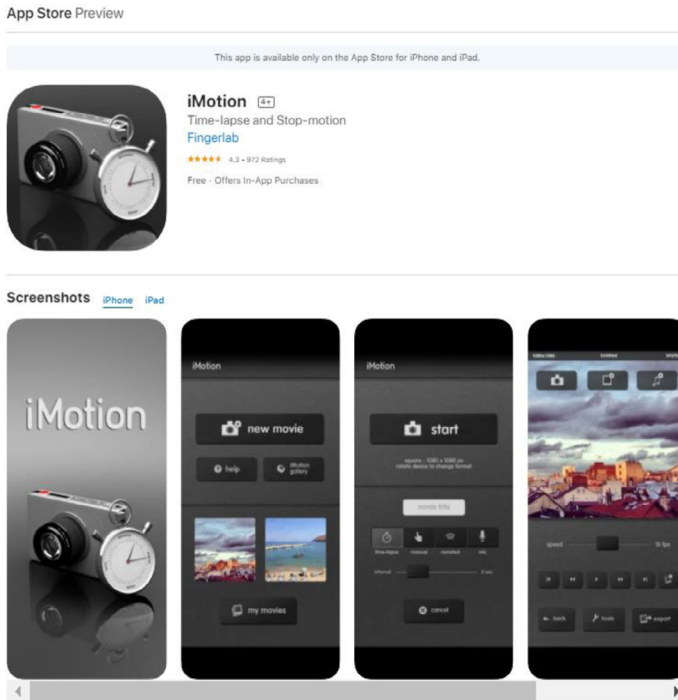
Knowmia Teach is an application/program owned by TechSmith corporation. It enables the user to create interactive videos to teach a specific subject. Such videos can be shared online with others. This application can also be used to design interactive lessons that are rich with all types of multimedia. These lessons can be used for self-learning, in distance education or in the flipped classroom.

Recommended Learning Resources

- [Knowmia Tutorials | TechSmith](#)
- [Getting Started with TechSmith Knowmia - YouTube](#)

iMotion HD

<https://apps.apple.com/us/app/imotion/id421365625>



Screenshot of iMotion App. Interface 2021. Courtesy of Fingerlab

Brief Description

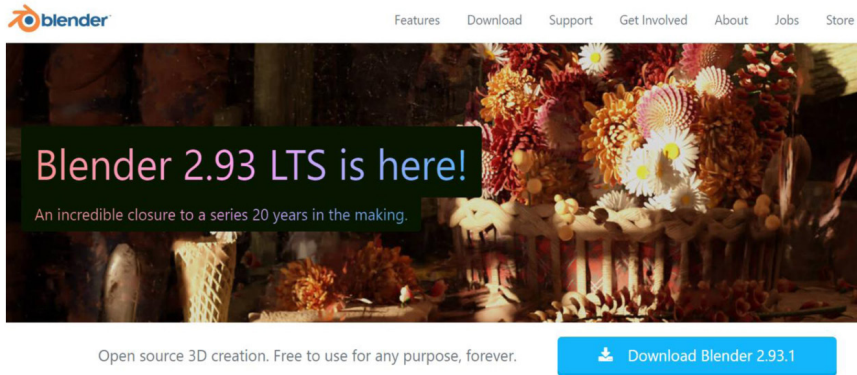
iMotion is an application that was developed by Fingerlab. It is an application that enables the user to create cartoon films from pictures. The pictures are taken to show how something can be done. It runs using the iOS operating system.

Recommended Learning Resources

- [iMotion tutorial - YouTube](#)
- [iMotion Tutorial - YouTube](#)

Blender

<https://www.blender.org>



Screenshot of Blender Site Interface 2021. Courtesy of Blender.org

Brief Description

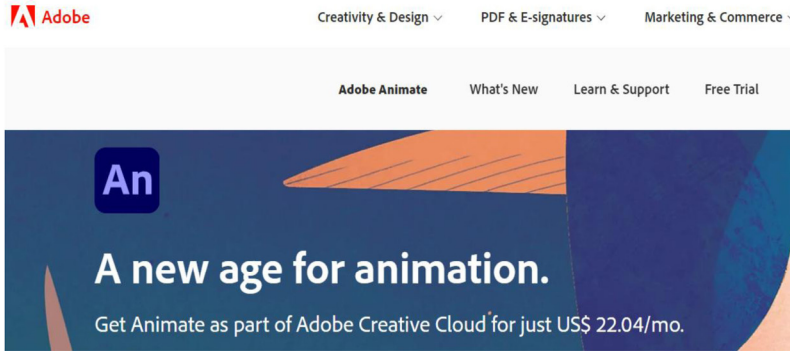
Blender is a free and open-source 3D computer software toolkit. It is used for creating animated films, visual effects, art, printed models animations, interactive applications, and computer games.

Recommended Learning Resources

- [Blender Guru - YouTube](#)
- [Tutorials — blender.org](#)
- [Blender - Absolute Basics - Introduction Series for Beginners](#)

Adobe Animate

[Creative Cloud - Animate \(adobe.io\)](https://adobe.io)



Screenshot of Adobe Animate Site Interface 2021. Courtesy of Adobe.

Brief Description

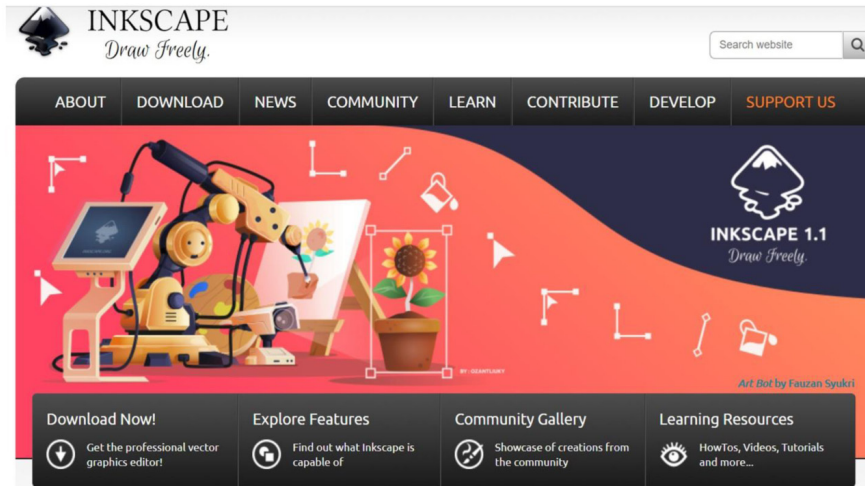
Adobe Animate is a program that allows the user to make animations for different purposes such as making TV programs, videos, electronic websites, and games. This program relies on the (Vector) feature which means that the photos and graphics are not affected by the change in their size. It is possible to start drawing a task from zero with the available brushes. You can also add photos, sounds, or movement to your work. When you are done, you can save your work in different formats and share it on several devices.

Recommended Learning Resources

- [Animate tutorials | Learn how to use Animate \(adobe.com\)](https://adobe.com)
- [Adobe Animate 2021: The Absolute Basics | Beginners Tutorial - YouTube](https://www.youtube.com/watch?v=...)

Inkscape

<https://inkscape.org>



Screenshot of Inkscape Site Interface 2021. Courtesy of INKSCAPE.

Brief Description

Inkscape is a program with drawing tools. It enables the user to edit photos. It is characterized by vector graphics which means that the quality of the photo does not change regardless of its size. This program runs on all operating systems with the same efficiency. It provides the user with several options such as the pencil tool, the handwriting tool, and the shapes tool. When you are done with your task, you can save it in different formats.

Recommended Learning Resources

- [Inkscape Tutorials - YouTube](#)
- [Inkscape Tutorials | Inkscape](#)
- [Learn | Inkscape](#)

GIMP

<https://www.gimp.org>



Screenshot of GIMP Site Interface 2021. Creative Commons Attribution-ShareAlike 4.0

Brief Description

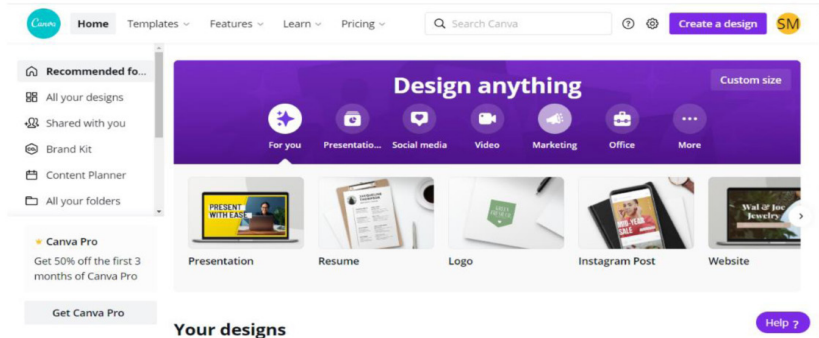
GIM is a free and open-source bitmap editor. It can be used for photo retouching, editing, free drawing, and converting photos into different formats. It has more specialized functions. It runs on Windows, iOS, GNU/Linux operating systems.

Recommended Learning Resources

- [Tutorial_GIM.pdf \(ehu.eus\)](#)
- [Introduction to GIM software - YouTube](#)

Canva

<https://www.canva.com/>



Your designs
Screenshot of Canva Site Interface 2021. Courtesy of Canva.

Brief Description

Canva is an application or service that enables the user to design infographics, stickers, icons, and others.

Brief Description

Canva is an immensely powerful graphic design application with both a website version and an app version to be installed on mobile phones or tablets. This is the ultimate platform for creating anything in less time using their ready-made templates. Moreover, they have a section dedicated to education where you can find templates related to classroom decoration, lesson plans, worksheets, certificates, class schedules, and bookmarks. They also have a learning section that contains tutorials, blogs, and courses.

It has a free version and a pro version (paid).

Advantages

- User-friendly, time-friendly, and easily accessible.

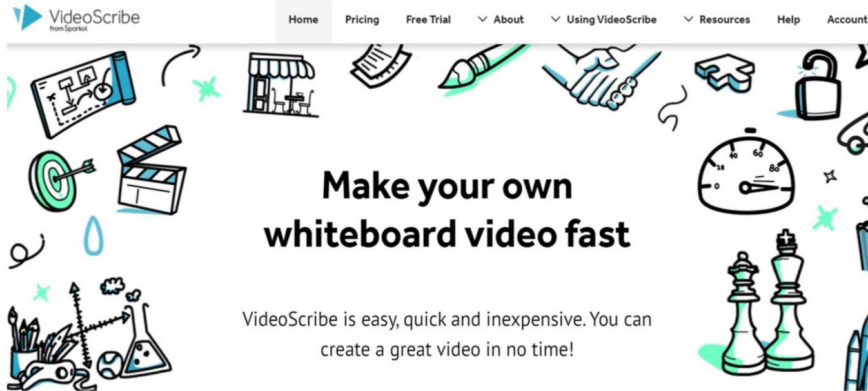
- Fantastic ready-made templates with amazing color contrasting.
- An edited design can be downloaded in a variety of file formats.
- Provides users a variety of elements, videos, backgrounds, animations, etc. for editing their design.

Recommended Learning Resources

- [Canva YouTube channel](#)
- [How to use Canva for Beginners](#)
- [Canva GCF](#)
- [How To Use Canva Tutorial](#)
- [Canva - Design anything. Publish anywhere. - YouTube](#)
- [How To Use Canva For BEGINNERS! - YouTube](#)
- [Free Canva Tutorial at GCFGlobal](#)
- [How To Use Canva Tutorial - YouTube](#)

VideoScribe

<https://www.videoscribe.co/en>



Screenshot of VideoScribe Site Interface 2021. Courtesy of Sparkol Limited.

Brief Description

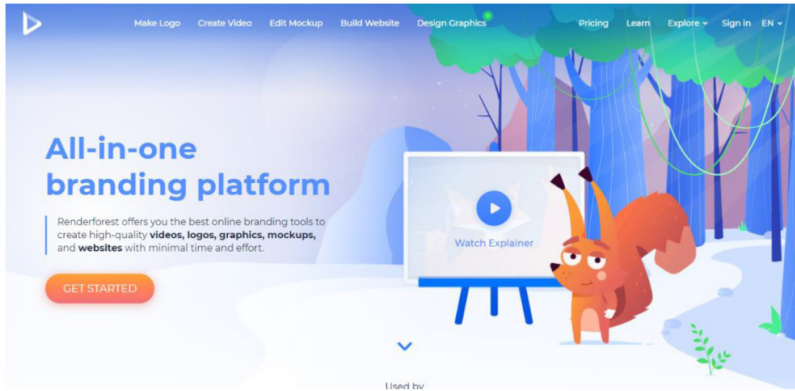
VideoScribe is a paid application. It enables the user to narrate comic stories by hand-drawing and then produce a video of the story.

Recommended Learning Resources

- [VideoScribe - YouTube](#)
- [VideoScribe Tutorials - YouTube](#)
- [VideoScribe - Sparkol Support Hub](#)
- [VideoScribe Tutorial 2020: The Definitive Guide \(Part1\)](#)

Renderforest

<https://www.renderforest.com/>



Screenshot of Renderforest Site Interface 2021. Courtesy of Renderforest.

Brief Description

Renderforest is an online tool that helps you create high-quality videos, explainer animations, infographics, and slideshows. In addition, teachers can use it to make introductory videos, give instructions and create tutorials. Renderforest is very easy to use and helps you save a lot of time.

Advantages

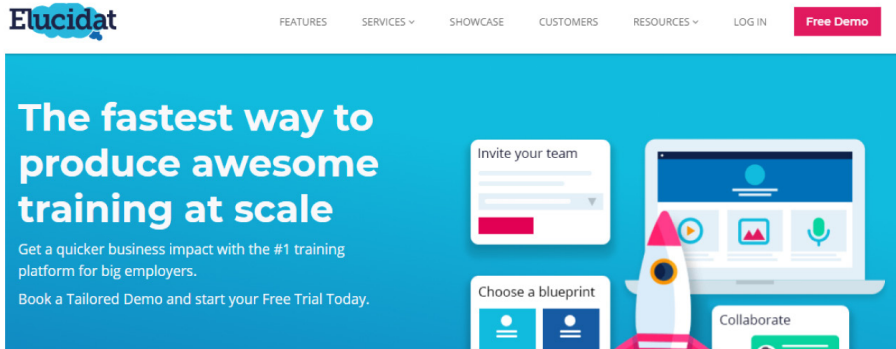
- There are hundreds of video templates for you to choose from.
- You get to use the online editor that enables you to edit your video online quickly and easily.
- It has step-by-step instructions that guide you with adding music, pictures, backgrounds, and audio to create your video.
- Once you are done with the video, you can either download it or share it directly to YouTube or social media.

Recommended Learning Resources

- [Renderforest Quick Start Guide](#)
- [Renderforest: How to make tutorial videos](#)
- [Renderforest: How to make an intro](#)
- [Renderforest: How to Create Explainer Animation Video Fast](#)

Elucidat

<https://www.elucidat.com>



Screenshot of Elucidat Site Interface 2021. Courtesy of Elucidat.

Brief Description

Elucidat is a program designed to make lectures and educational lessons used in distance education. It relies on the Cloud so that collaboration between more than one user is possible. The program is designed to suit all types of users: beginners and advanced. It contains many ready-made templates. It also enables users to insert photos and videos as well as other interactive options. It allows users to analyze data to identify the participants. The content can be browsed using different devices.

Recommended Learning Resources

- [Elucidat - YouTube](#)
- [Elucidat Help Center](#)

Cospaces

<https://cospaces.io/edu/>



Screenshot of Cospaces Site Interface 2021. Courtesy of Cospaces Edu.

Brief Description

Cospaces is a site or application that enables the user to create three-dimensional photos and moving them to help the students understand the content of the materials through the techniques and applications of virtual reality and augmented reality.

This application is suitable for children. It is used to create your own virtual content. You can interact with your content easily. It also allows the user to explore, make and encode their innovation in the virtual world. In other words, this site enables the user to create different three-dimensional designs that exist in nature inside the program so that the work is simulated to reality. Then, the work can be displayed either on websites or Android and iOS devices.

Recommended Learning Resources

- [CoSpaces Edu educator resources to get started](#)
- [CoSpaces Edu lesson plans to use in the classroom](#)
- [Latest Tutorials topics - CoSpaces Edu Forum](#)
- [CoSpaces Edu - YouTube](#)

iSpring Suite

<https://www.ispringsolutions.com/>



Screenshot of iSpring suite Site Interface 2021. Courtesy of iSpring Solutions Inc.

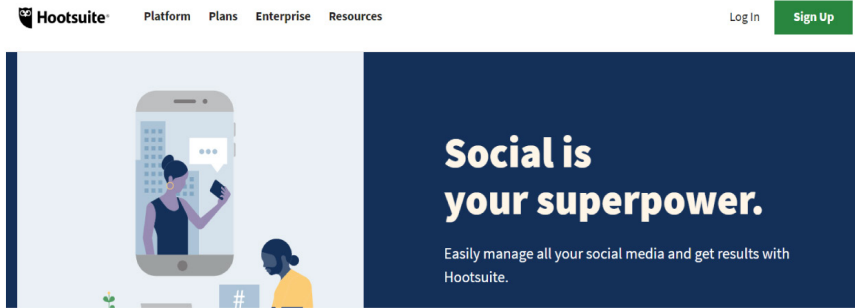
Brief Description

iSpring Suite is an e-learning program that was developed by Adobe. What distinguishes this program is that it enables the user to create films and save the presentations that are produced by PowerPoint in the form of a multimedia file. Furthermore, it enables the user to share content through AICC/(SCORM). It also provides the learning management system (LMS) of BlackBoard.

The program contains several tools such as iSpring Pro which is used to create courses and presentations that are compatible with content produced using PowerPoint. Another useful tool is QuizMakeriSpring which enables the user to create questionnaires and tests that can be shared online. This is in addition to the iSpring Kinetics templates that enable the user to create e-learning materials that contain many interactive features such as three-dimensional books.

Hootsuite

<https://www.hootsuite.com>



Screenshot of Hootsuite Site Interface 2021. Courtesy of Hootsuite Inc.

Brief Description

Hootsuite is a platform that is used to manage a number of social media accounts. It can be used for designing and organizing content as well as scheduling, planning, and launching content for specific days. The site also analyzes data that are related to the content which is shared online such as identifying the number of people who viewed the content and similar data. It enables the site's users to work as a team and distribute tasks among themselves.

Glogster

<http://edu.glogster.com>



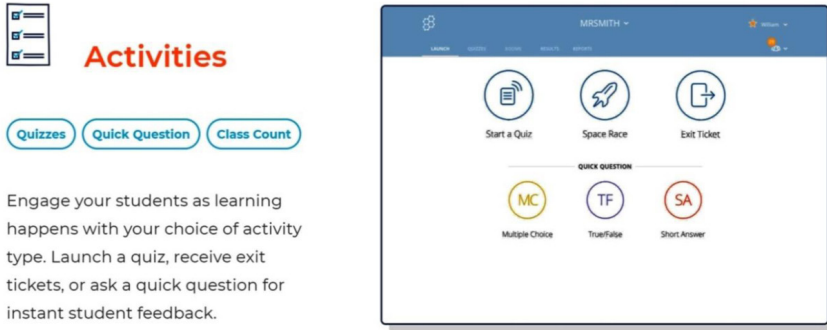
Screenshot of Glogster Site Interface 2021. Courtesy of Glogster™EDU

Brief Description

Glogster is an application that can be used to design educational posters. It enables the user to add videos and different links. It also provides the user with different ready-made templates.

Socrative

<https://www.socrative.com/>



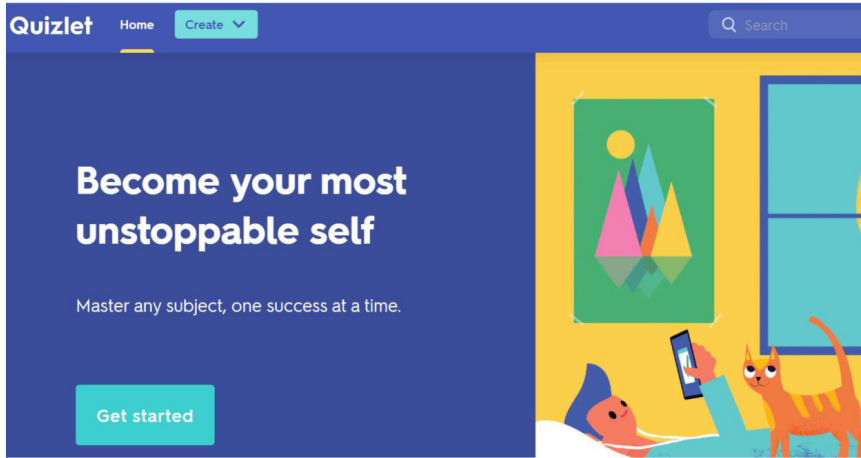
Screenshot of Socrative Site Interface 2021. Courtesy of Showbie Inc.

Brief Description

Socrative is one of the best applications and services. It can be used to evaluate the performance of the students by designing different multiple-choice tests that can be used as a formative assessment for the targeted group. It was developed by Socrative corporation. It runs on all types of operating systems such as web browsers, iOS apps , Android apps, Google Chrome, Kindle apps ,and Windows apps.

Quizlet

<https://quizlet.com>



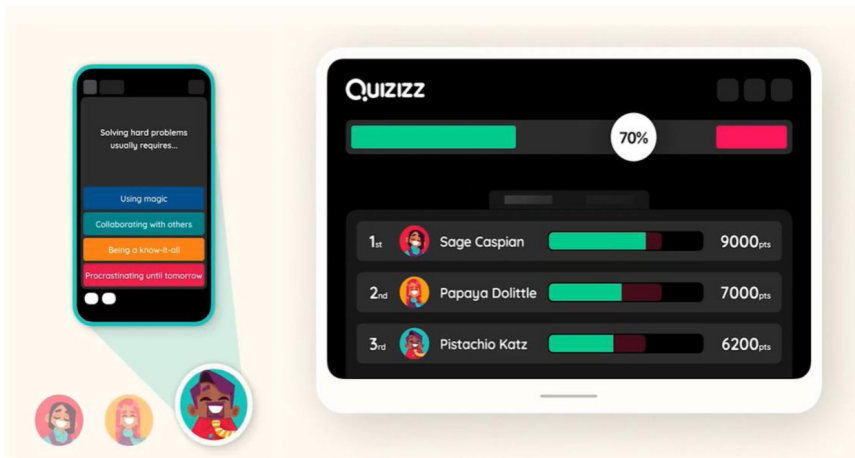
Screenshot of Quizlet Site Interface 2021. Courtesy of Quizlet Inc.

Brief Description

Quizlet is one of the best and easiest applications. It allows the user to create electronic tests. This application provides the user with a variety of test samples that can save time and effort. Teachers can use this application to create classrooms. By activating the group learning feature, the teacher can add their students to the class and engage them in interesting group games that enable them to memorize the vocabulary items assigned to them.

Quizizz

<https://quizizz.com>



Screenshot of Quizizz App. Interface 2021. Courtesy of Quizizz Inc.

Brief Description

Quizizz enables the user to create test questions as well as motivational competitions for students. It also enables the teacher to search for ready-made tests and activities created by other teachers. It then provides teachers with reports about the activities that the students are engaged in.

It is an interacting platform for conducting formative assessments, pre-assessments, homework, and lesson reviews. As the name suggests, Quizizz was made initially for conducting quizzes. However, interactive lessons can now also be prepared using Quizizz. The main advantages of Quizizz are its motivational quotes and gaming features which keep students interested.

Advantages

- It is simple, easy, and free to use.

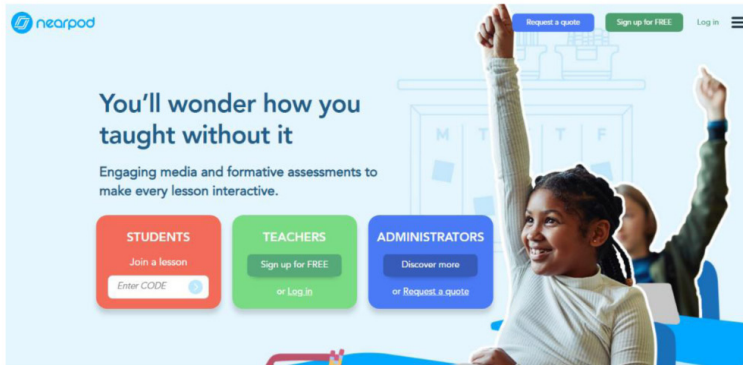
- Teachers can download students' reports which give detailed information for each and every question about every student participating.
- Live results can be seen, and students can get immediate feedback.
- Teachers from around the world share quizzes on this platform which then can be customized. This helps in saving time for teachers.

Recommended Learning Resources

- <https://www.youtube.com/watch?v=6tZ0qprZQSw>
- [Quizizz tutorial for teachers](#)
- [Quizizz Tutorial for Teachers](#)

NearPod

<https://nearpod.com/>



Screenshot of NearPod site Interface 2021. Courtesy of NearPod.

Brief Description

Nearpod is an online platform that makes lessons more interactive and engaging. There are plenty of interactive activities to add to your lessons such as collaboration boards, polls, and interactive quizzes. It allows students to participate actively and interact together. Basic features are for free. The paid version offers more features.

Advantages

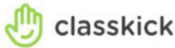
- Nearpod library has many premade lessons for different subjects and grade levels that you can add and edit.
- You can import your own PowerPoint, PDF, and Google Slides and then add interactive activities.
- Great tool for formative assessments as you can get feedback in real-time.
- Promotes students' involvement during the lessons as you can add media such as websites, simulations, and virtual reality.

Recommended Learning Resources

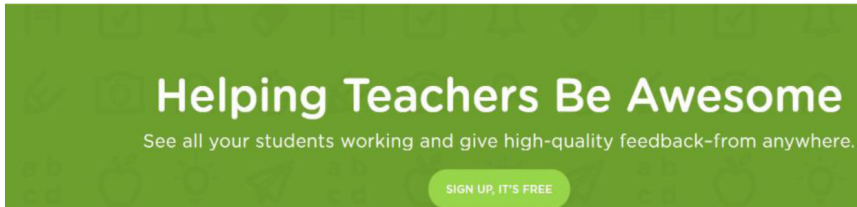
- [Creating your first Nearpod lesson](#)
- [How To Use Nearpod tutorial 2021 - Teacher Guide For Beginners](#)
- [How to use Live to Student Paced](#)
- [How students join a lesson](#)

Classkick

<https://classkick.com>



TEACHER RESOURCES



Screenshot of Classkick Site Interface 2021. Courtesy of Classkick.

Brief Description

Classkick is a program that enables the user to create interactive tests. It enables the teacher to convert any page or part of a page or photo into an interactive working page that is full of games by photographing it and then adding photos and movements. It enables the teacher to follow up on the students' work during the class in real-time. Moreover, the learners can do their tasks and answer questions using texts, pictures, or drawings. They can also raise their hands through the program's window to get the teacher's assistance and help.

Classkick enables teachers to create assignments for students to work on and see students' progress as they work on these assignments directly. Teachers can provide feedback and help the students instantly. The students are able to ask questions and ask for help by using the digital hand-raising feature. You can reward students using custom and preset auto-grading stickers, or even draw directly on students' canvases.

Advantages

- You can create a lesson or assignment by adding worksheets, audio, video, and web content.
- Teachers get to observe all the class working at once and how each student is performing.
- The app helps you to identify struggling students to provide them with individual help.
- Peers can help each other anonymously.

Recommended Learning Resources

- [How to get started in Classkick](#)
- [ClassKick Tutorial](#)
- [Cool Things You Can Do in Classkick](#)

Survey Monkey

<https://www.surveymonkey.com>



Log in to your account

Don't have an account?
[Sign Up](#)

A screenshot of the SurveyMonkey login page. On the left, there is a light gray login form with two input fields: "Enter your username" and "Enter your password". On the right, there is a blue promotional banner with the text "Ready for your treat?" and "Log in to get it." below it, accompanied by a small image of a red strawberry.

Screenshot of SurveyMonkey site Interface 2021. Courtesy of SurveyMonkey.

Brief Description

SurveyMonkey is both a free and paid service that enables the user to design professional questionnaires with the ability to analyze the resulted data. The data from the questionnaires can be summarized using digraphs and charts. You can create different types of questionnaires for teachers, students, or their parents. These jobs can be performed using the different types of ready-made templates of the service.

SurveyMonkey is an app that enables you to make surveys using different templates. You get to create a survey, get responses and analyze results easily and quickly. You can send the surveys to students, parents, and your colleagues to seek feedback or opinions. Moreover, it provides you with high-quality data that guide you to make informed decisions to improve students' grades. Students find surveys to be interesting and interactive. You can use surveys to keep students interested in the topic, teach or revise a lesson as well as test the students.

Survey Monkey is free but the advanced features are only available with the paid version.

Advantages

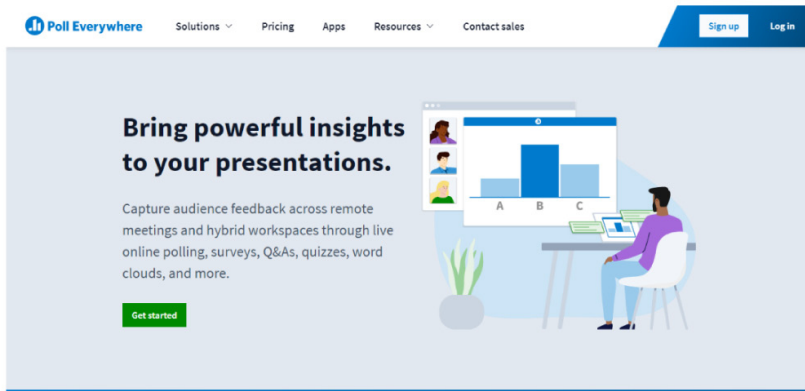
- Creating the survey is easy as the design of SurveyMonkey is appealing and convenient.
- Allows you to create surveys, polls, and even quizzes.
- You have different question types to select from including multiple-choice, rating scale, and descriptive text.
- The analyzed results and graphs are easy to understand.
- Results can be exported and integrated with different apps.

Recommended Learning Resources

- [Creating a survey with SurveyMonkey](#)
- [SurveyMonkey - Creating, Testing, and Sending a Survey](#)
- [Analyzing your results with SurveyMonkey](#)
- [How to send a survey by Email with SurveyMonkey](#)
- [Sharing your results with SurveyMonkey](#)

Polleverywhere

<https://www.polleverywhere.com/>



Screenshot of Poll Everywhere site Interface 2021. Courtesy of Poll Everywhere.

Brief Description

Poll Everywhere is an online tool that enables you to embed a variety of activities into your presentations or display them on the website. The activities are interactive as the audience can respond directly and see the results on screen. You can create questions, polls, word clouds and competitions. The app helps you to increase the audience's participation and involvement. Poll Everywhere is offered as both a free and paid application.

Advantages

- Poll Everywhere is user-friendly as creating activities is easy and quick.
- It has a wide variety of question types.
- Results are displayed live on the screen.
- Students can respond using any device (e.g., smartphones, tablets, and computers).

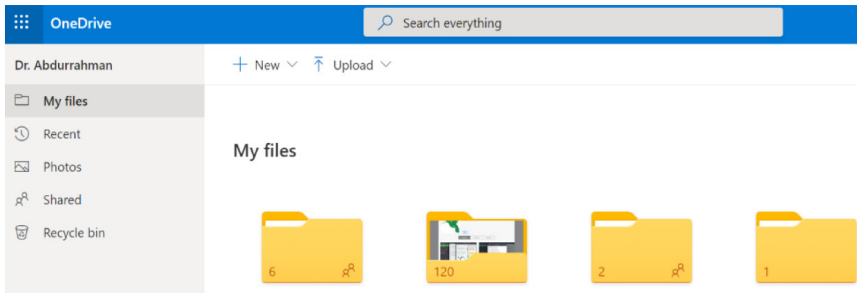
- After the session ends, you can view participants' responses, average response time, and the ranking of participants according to their performance.

Recommended Learning Resources

- [Tutorials](#)
- [How to share responses from a Poll Everywhere activity](#)

OneDrive

<https://www.microsoft.com/en-ww/microsoft-365/onedrive/online-cloud-storage>



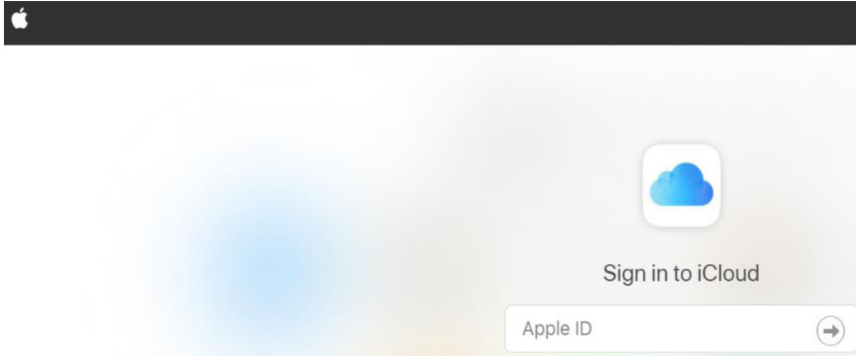
Screenshot of OneDrive site Interface 2021. Courtesy of Microsoft.

Brief Description

OneDrive is a Microsoft Cloud storage service that enables the user to create and share different types of files. This service enables the designer to create files for collaborative work. Then, the link can be shared through interactive digital content. It can also be used to store files that are very large in size and then share their links through the project. You can also create different files and then include their links in the project without being a part of the project. This service is considered an effective tool for teamwork and producing joint projects.

iCloud

iCloud



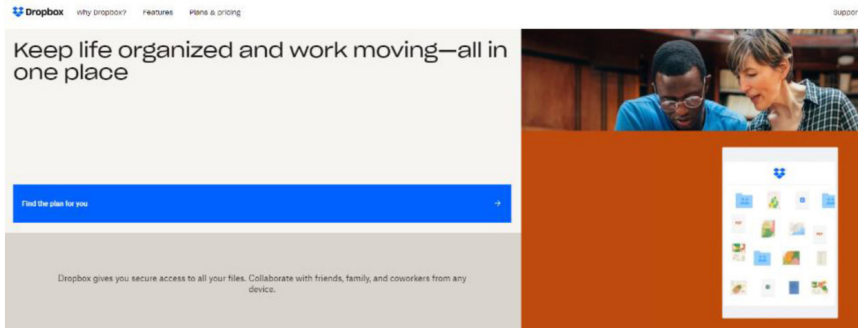
Screenshot of iCloud site Interface 2021. Courtesy of Apple inc..

Brief Description

iCloud is one of the services provided by Apple. It enables the user to save files and share them with friends, colleagues, students, and their parents. It can be used for sending review forms or quizzes in addition to storing a large variety of files such as worksheets and presentations. Teachers can use it to send attendance reports to their students that can be displayed by all the devices that are connected with the internet. It can also be used to create different types of questionnaires or opinion polls as well as synchronizing files between the various Apple devices. You can create backup copies of the saved files.

Dropbox

<https://dropbox.com>



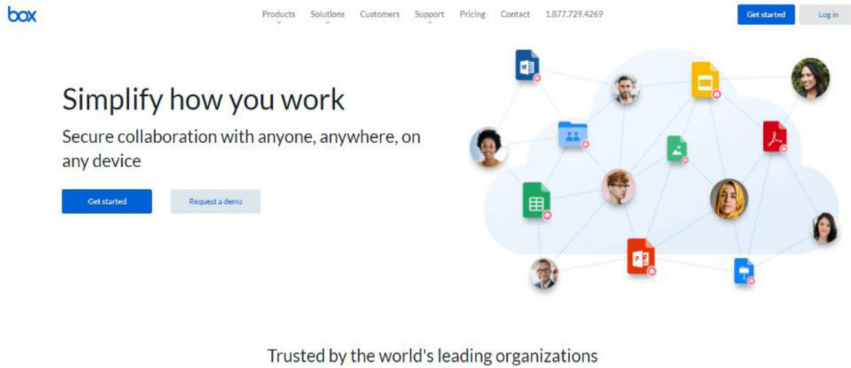
Screenshot of Dropbox site Interface 2021. Courtesy of Dropbox.

Brief Description

Dropbox is a Cloud service that provides the user with 2 GB to store all types of files, share and synchronize them through different devices. One of its important features is that it enables the users to save all kinds of files, submitting the projects and research papers electronically. The two parties can save the files to prevent their loss. It enables teachers to record their students' grades and work and save them in the application for future reference. They can also synchronize all types of files through different devices. In case the connection with the internet is not available, the teacher and students can still work on their files and save them on the application itself. When the internet connection is available, the files will be synchronized across all devices and the website.

Box

Box — Secure Cloud Content Management, Workflow, and Collaboration



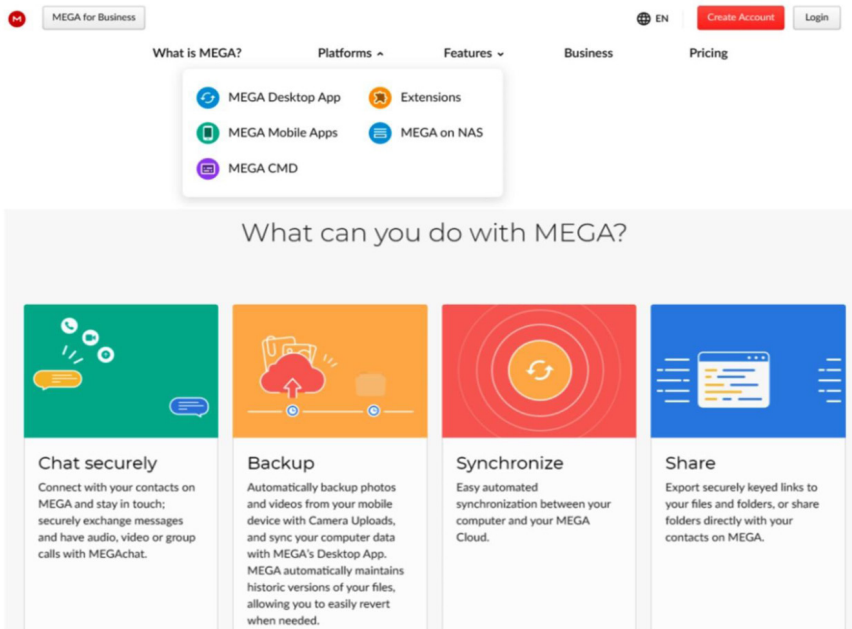
Screenshot of Box site Interface 2021. Courtesy of Box.

Brief Description

Box is a Cloud service that enables the user to save and share all types of files, synchronizing them through the user's various devices through their account. This service is developed by Box, Inc. and it is compatible with the majority of operating systems. You can use this service to save files and share them online with others. You can also create folders for students' assignments.

Mega

MEGA



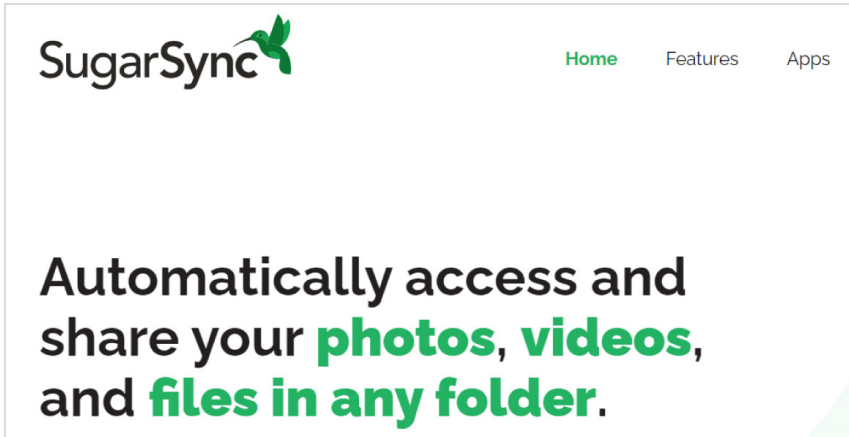
Screenshot of Mega site Interface 2021. Courtesy of Mega.

Brief Description

Mega is a service that was developed to enable users to store, upload and download files in an easy way. It provides the user with 50 GB of space for free and larger spaces up to 4096 GB of space can be provided for monthly or annual subscribers. It runs on various operating systems such as Android and iOS.

SugarSync

Cloud File Sharing, File Sync & Online Backup From Any Device



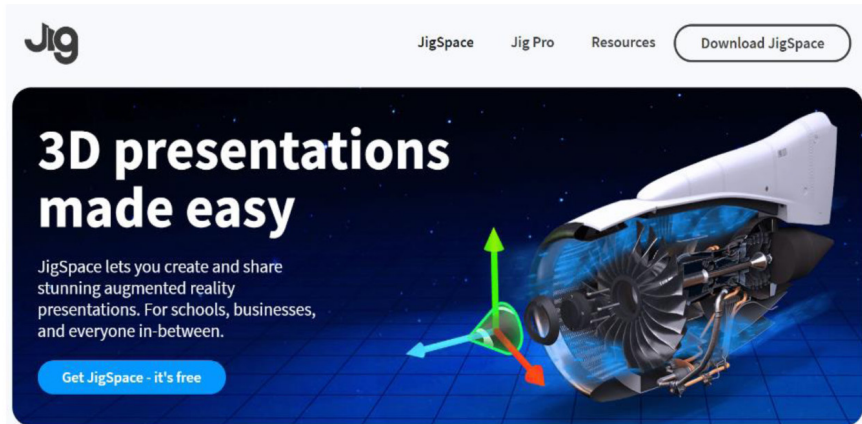
Screenshot of Dropbox site Interface 2021. Courtesy of SugarSync® is a registered trademark of KeepItSafe, Inc.

Brief Description

SugarSync is an application for storing files and sharing them with compatible devices. It provides the user with 5 GB of space. It runs on the iOS operating system.

Jigspace

<https://jig.space/>



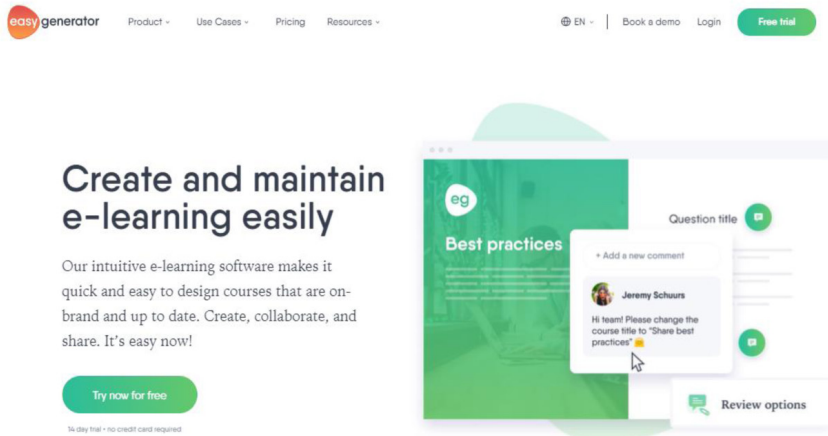
Screenshot of JigSpace site Interface 2021. Courtesy of JigSpace.

Brief Description

Jigspace is a service that enables the learner to learn about the different mechanisms of work in an interactive and spatial environment. This service provides the user with many models in different fields such as space, sciences, etc.

Easygenerator

<https://www.easygenerator.com/en/>



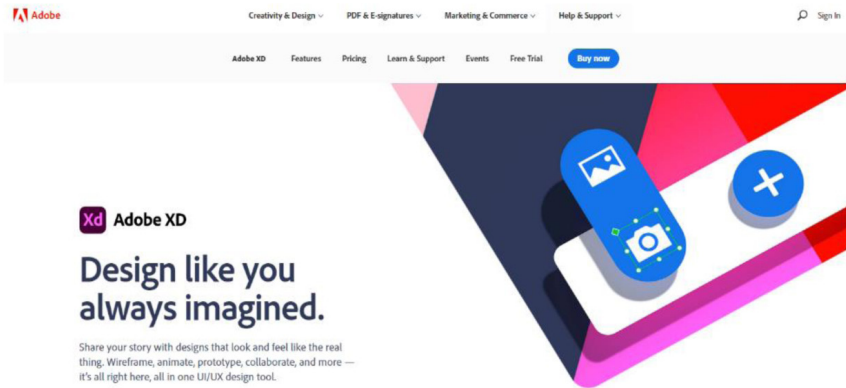
Screenshot of easygenerator site Interface 2021. Courtesy of Easygenerator.

Brief Description

Easygenerator is a comprehensive program for e-learning. It enables users to create training courses, organizing and distributing them appropriately for learning and training. All types of users can use the program as it does not require advanced IT skills.

Adobe Experience Design

<https://helpx.adobe.com/xd/get-started.html>



Screenshot of Adobe Experience Design site Interface 2021. Courtesy of Adobe.

Brief Description

Adobe Experience Design is a free program that can be used to design a model of the project screen. It is often utilized to design the user's experience on the web and mobile devices. It can be used on Microsoft, Mac and iOS operating systems. It benefits from a simple and effective interface that enables the user to make interactive interfaces themselves. This program links the elements together and allows the user to test the product, modify the design easily and assign a value to the transition effects. It is free to use.

Useful Applications for Interactive Projects

According to Educational Technology and Mobile Learning, by Med Kharbach (2010- 2021) useful applications for interactive projects are listed below. There are 70 applications in different classifications, many of which can be used when creating interactive projects. It might be worth noting that many of these applications have been addressed in this book. The following table includes all such applications. If you want to get more information about these applications, you can click on the application's link.

Apps	Category
Haiku Deck Prezi Keynote Google Slides	Presentation Apps
Explain Everything Show Me Educreations Interactive Whiteboard Knowmia	Screen-casting Apps
iMovie WeVideo Animoto Magisto Videolicious	Video Creation Apps
Dropbox Google Drive	File Storage Apps

Apps	Category
Educreations Doceri Show Me Explain Everything	Whiteboard Apps
PDF Notes	PDF annotation Apps
Voice Record Pro Instant Rec iTalk Recorder	Audio Recording Apps
Notability Penultimate Note Taker	Notetaking Apps
Wordpress Edublogs Glogster	Blogging Apps
Book Creator Creative Book Builder Story Creator	Book creation Apps
Make Beliefs Comix Comic Life Strip Designer	Comic Strip Apps
Story Wheel Story Creator Tellagami Little Bird Tales	Digital Storytelling Apps
Grade Book Pro Grade Keeper for iPad	Apps for Grading

Apps	Category
Popplet Mind Meister Idea Sketch Simple Mind	Mind-mapping Apps
Evernote	Portfolio Apps
Pic Collage Thinglink Glogster	Apps for Creating Posters
Timeline Maker Timeline 3D	Apps for Creating Timelines
Wordsalad CloudArt Word Collage	Apps for Creating Word Clouds
iSpeech	Speech to Text Apps

The following is a list of applications and services for creating project diagrams and charts along with links for downloading or direct online use:

Microsoft Visio.	Draw.io.	SmartDraw.	Creately.
ConceptDraw Diagram	Edraw Max	Gliffy	Cacoo.
VisualParadigm Online	Miro.		



CHAPTER TEN

Snapshots from Projects & Educational Resources

Dear Reader,

In the following pages, you will find some snapshots of projects that were produced according to the steps discussed in this book. These projects were executed by Higher Studies students in the College of Education at the Emirates University while I was teaching them the course titled ‘Advanced Applications in Educational Technology’ in the summer of 2021. Those projects covered various disciplines such as mathematics and science, among others. The students developed interactive digital materials for their fields of expertise.

The author would also like to draw your attention to the following link which includes some enrichment resources in addition to some small projects that followed the ADIC model. You can benefit from them in the implementation of your project. Many other projects will be added when possible. It will also include hands-on tutorials such as video clips whenever requested.

[Click here or scan the QR code to browse the folder.](#)



You are also invited to share your project with other readers. Note that you can make files available for viewing only by protecting your files from downloading, copying, or printing by unchecking “Viewers and commenters can see the option to download, print, and copy” the box in share settings.

[Click here or scan the QR code to browse the folder.](#)

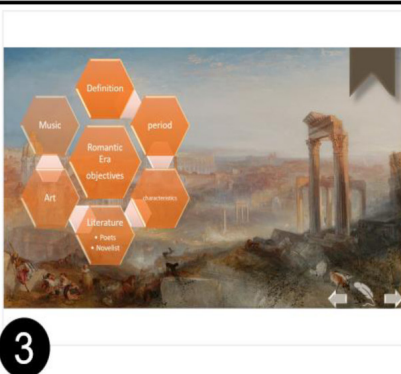
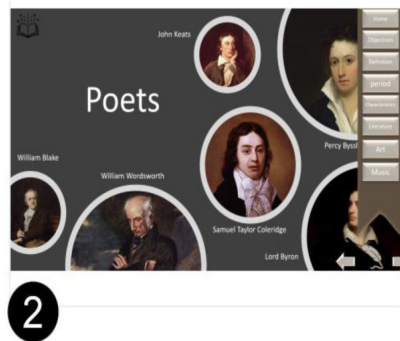
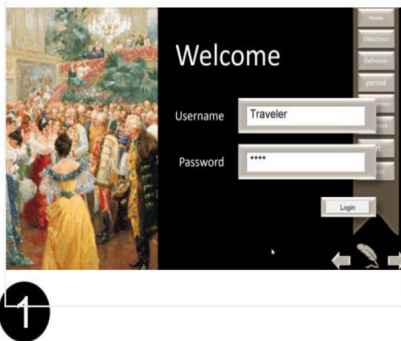


← Share with people settings

- Editors can change permissions and share
- Viewers and commenters can see the option to download, print, and copy

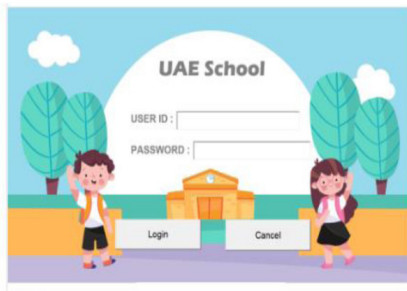
Snapshots of Interactive Digital Projects

These special projects creating and improving interactive digital content were developed by my students in the course titled ‘Advanced Applications in Educational Technology’ which I taught to students at the College of Education at the Emirates University in the summer of 2021. In order to preserve the copyright, the name of the developer has been placed below the snapshots of the projects.



History

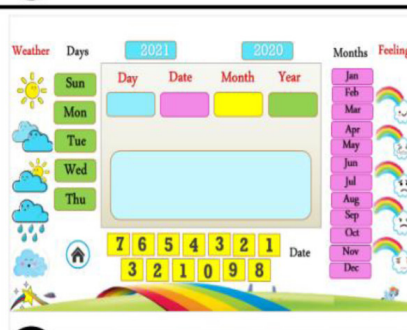
Fatema Ali Alkhanbooli Alshehhi



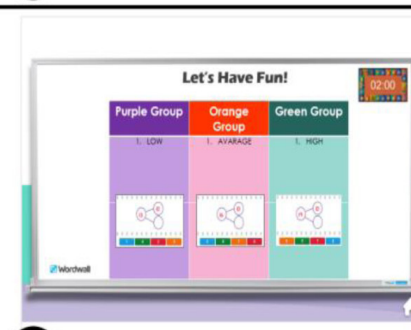
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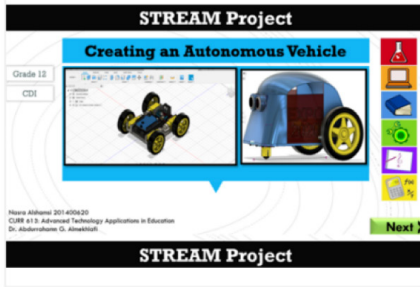
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Mathematics for pre-nursery children

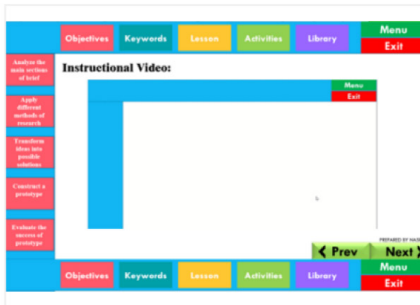
Fatima Bin Humaid, Sara Al Hatemi, Alia Al Shamisi, Noura Al Ahabbi



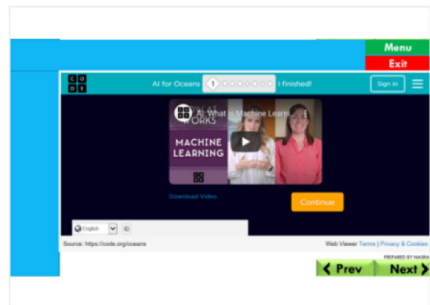
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Creating an autonomous vehicle

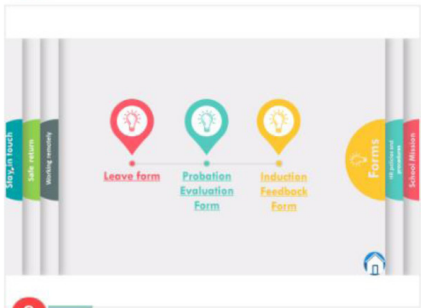
Nasra Shuwain Mubarak Alshamsi



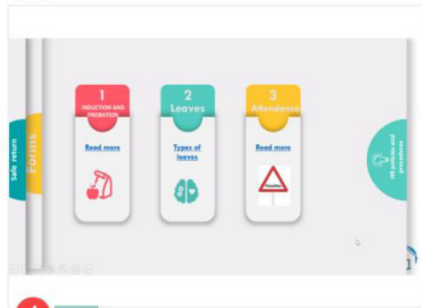
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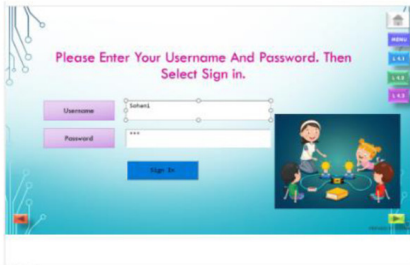
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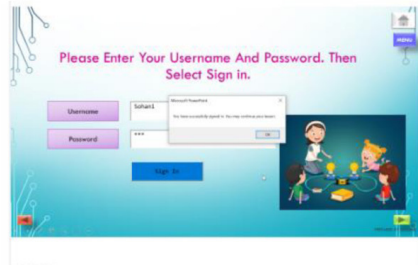
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Employees' training on HR issues

Honey Al Bahri



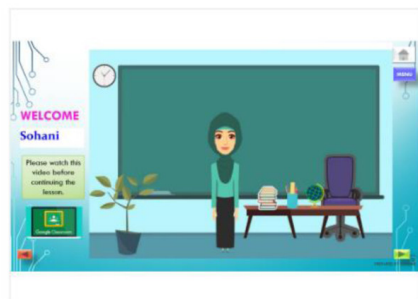
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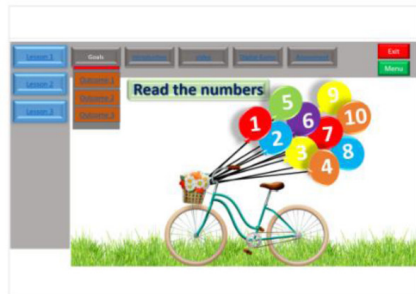
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Electricity and Magnetism

Sohani Mehzabin Prova



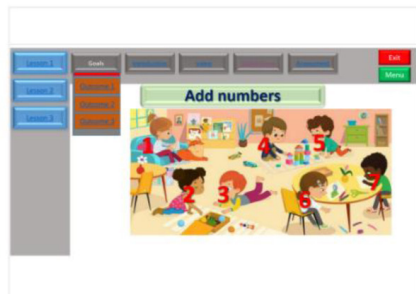
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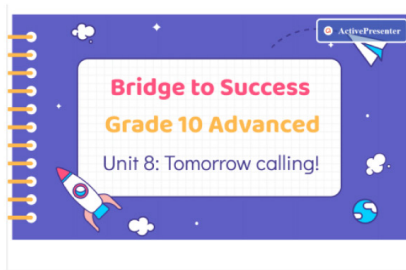
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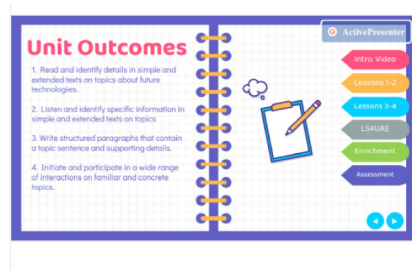
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Math for 1st Grade

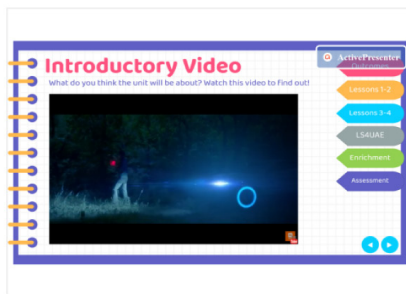
Aysha Khater Humaid Alshamsi



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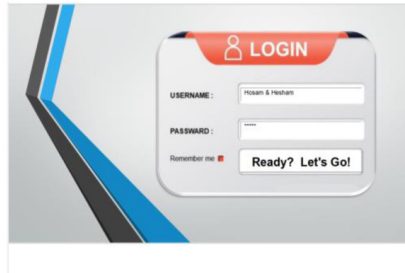
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English

Amani Almostafa, Afnan Rabah, Tasneem Salah, Soumia Lounis



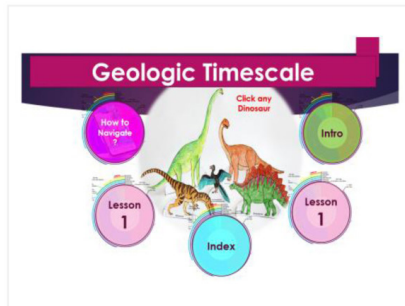
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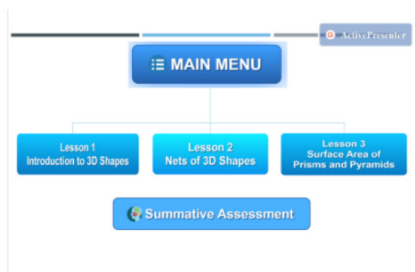
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Geology for high school students

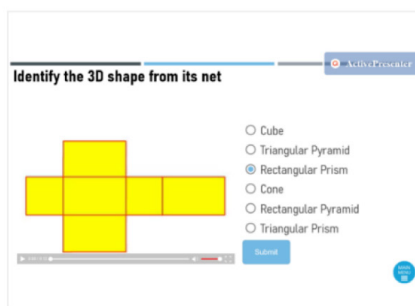
Hosam Badawy, Hesham Badawy



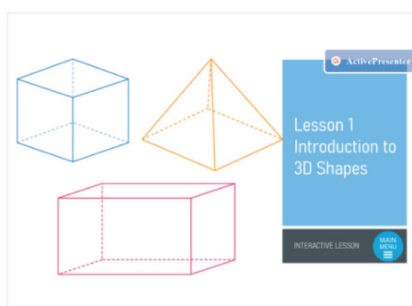
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Geometrical shapes for elementary school

Mausmi Jadhav



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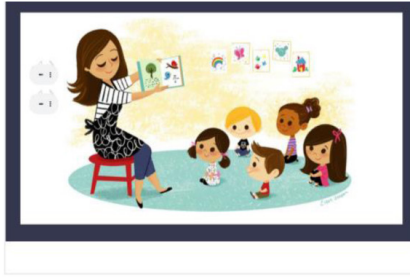
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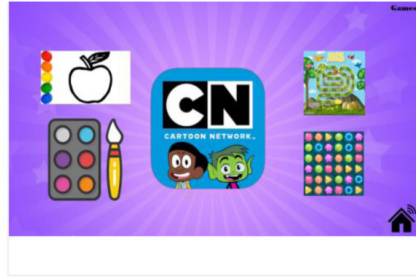
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Geography

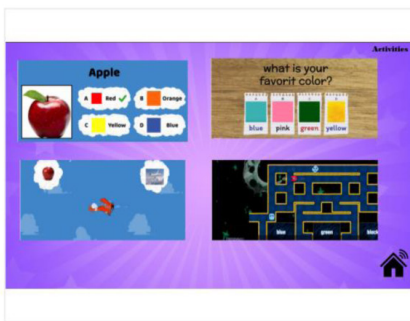
Aisha Saeed Hashel Almansoori



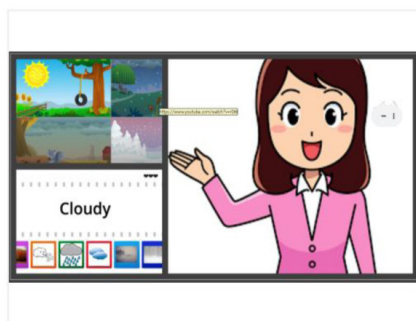
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Weather

Mariam Muhail Haji Alkaabi



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Teaching Chinese

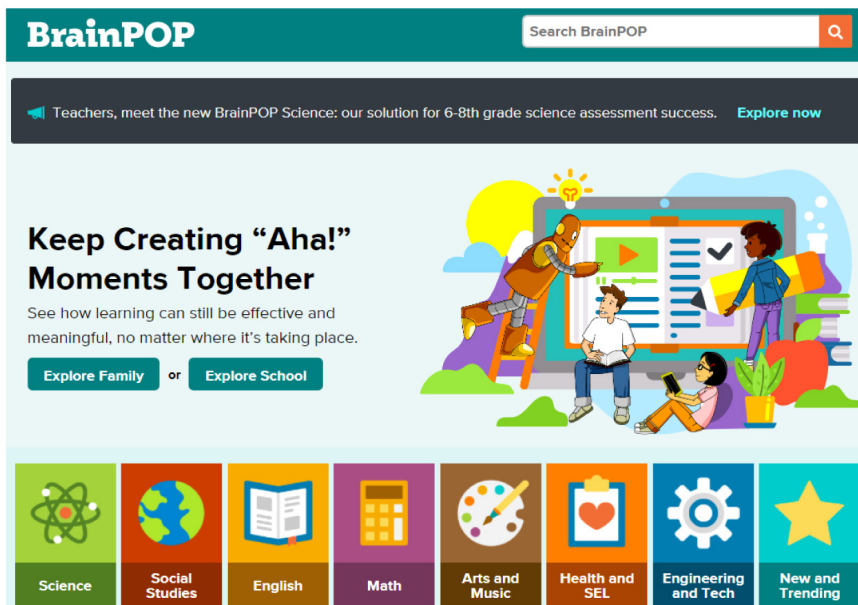
Luhuan Zhang

Additional Educational Resources

The author has selected several educational resources that will provide you with a wide range of content and enriching capabilities when designing interactive digital content. They also open the door for you to further engage with the target groups involved in the educational process.

BrainPop

<https://www.brainpop.com>



Screenshot of BrainPop site Interface 2021. Courtesy of BrainPop.

Brief Description

BrainPOP is a website that has thousands of animated videos and related quizzes that cater for students from kindergarten to grade 12. The materials cover a wide range of subjects such

as English, math, science, social studies, engineering and arts. Some videos also come with reading materials and games. The videos will help make learning engaging and more meaningful to students.

It is one of the resources that contain a huge number of educational websites that can be used in education from grade one till secondary education. The resources are diverse and cover all subjects including mathematics, science, languages, technologies, etc.

Advantages

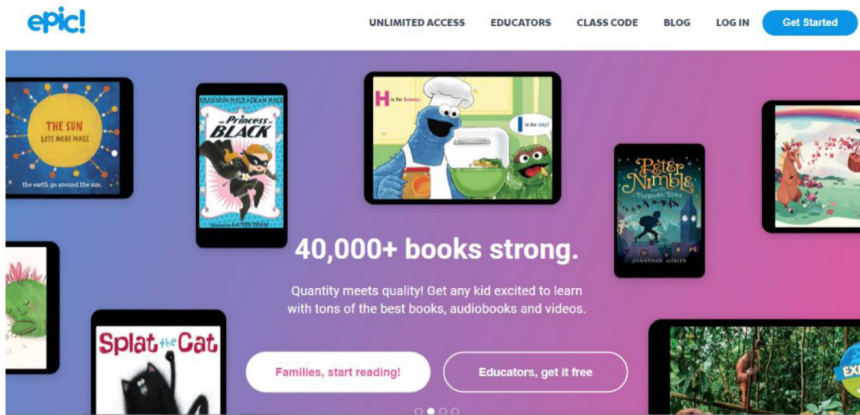
- Videos are sorted by content that facilitates finding the videos on the desired topic.
- The videos explain difficult concepts to students in an engaging way.
- BrainPOP's quizzes can be printed out as well as be solved online.
- It has plenty of resources such as lesson plans that guide teachers on how to integrate BrainPOP into the classroom.

Recommended Learning Resources

- [Getting Started with My BrainPOP](#)
- [BrainPOP tutorial](#)
- [Using the Assignment Builder](#)
- [How to Use BrainPOP's Quizzes and Quiz Mixer](#)

Epic

<https://www.getepic.com/>



Screenshot of BrainPop site Interface 2021. Courtesy of BrainPop.

Brief Description

The Epic app provides high-quality, well-known books online. Epic helps you improve your kids' reading skills and provides them with a pleasurable reading experience. The books target children that are 12 years old and under. The format of reading materials provided in Epic varies, as there are audiobooks, Read-to-Me books, and educational videos.

The free version of Epic allows one to read a limited selection of books.

Advantages

- Epic provides kids with books that are appropriate for their age, level, and interests.
- There are thousands of books covering different topics to select from including both fiction and non-fiction books.
- It allows teachers to incorporate the books in their daily teaching.

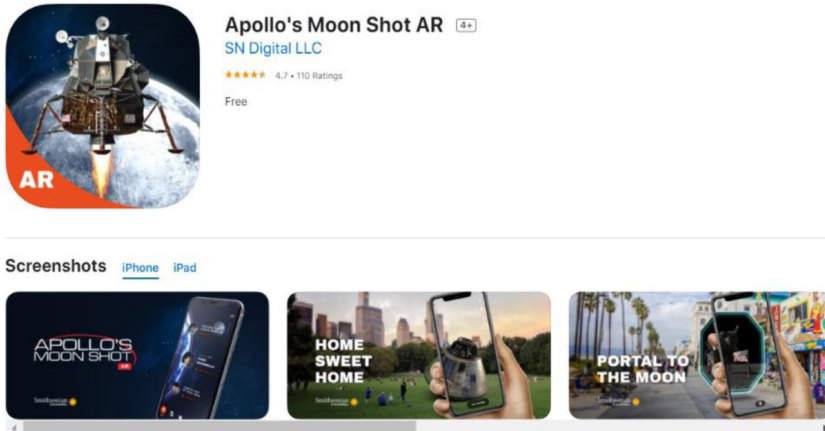
- You can track the reading progress of your kids and see the time spent on reading books as well as the types of books preferred by your kids.

Recommended Learning Resources

- [How to Login to Epic \(FREE BOOKS\)](#)
- [How to use Epic Books](#)
- [Using EPIC Books for Remote and In Person Learning](#)

Apolo's Moon Shot AR

<https://apps.apple.com/us/app/apollos-moon-shot-ar/id1465827204>



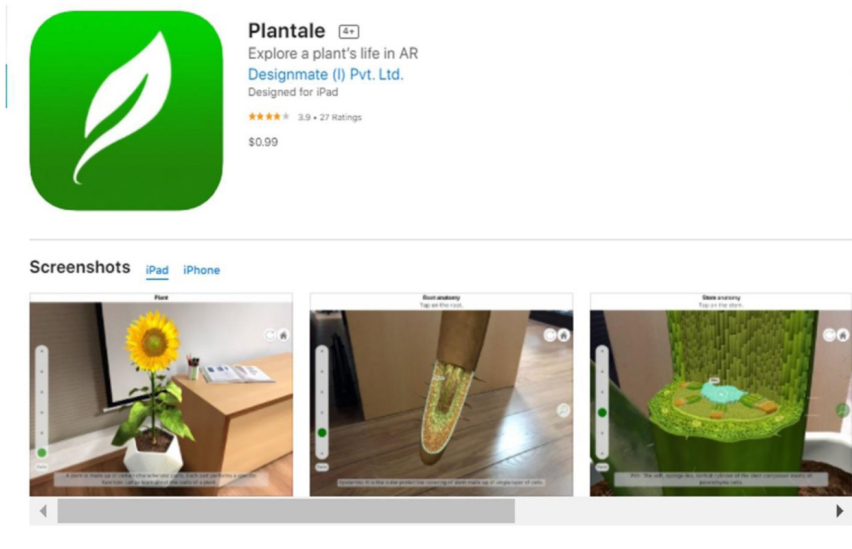
A Screenshot of Apollo's Moon Shot AR site Interface 2021. Courtesy of SN Digital LLC.

Brief Description

Apollo's Moon Shot AR enables the user to follow the events of the NASA space flights through the Apollo Satellite using augmented reality technology.

Plantale

<https://apps.apple.com/us/app/plantale/id1389698721>



Plantale is a stunning, engaging and learning app which takes you on a journey of a plant's life. You can observe the growth stages of plant from a simple seed and discover how the plant reproduces to form this seed and learn all about the anatomy and morphology of all plant parts with a lot of ease and precision with AR.

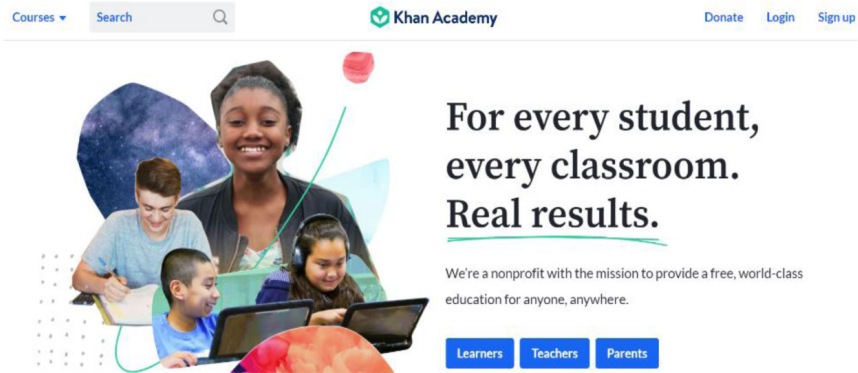
Screenshot of Plantale app. site Interface 2021. Courtesy of Designmate Pvt. Ltd.

Brief Description

Plantale is an application that enables the user to explore the details of plants, their leaves and all their various parts in an enjoyable and interesting way via augmented reality.

Khan Academy

<https://www.khanacademy.org/>



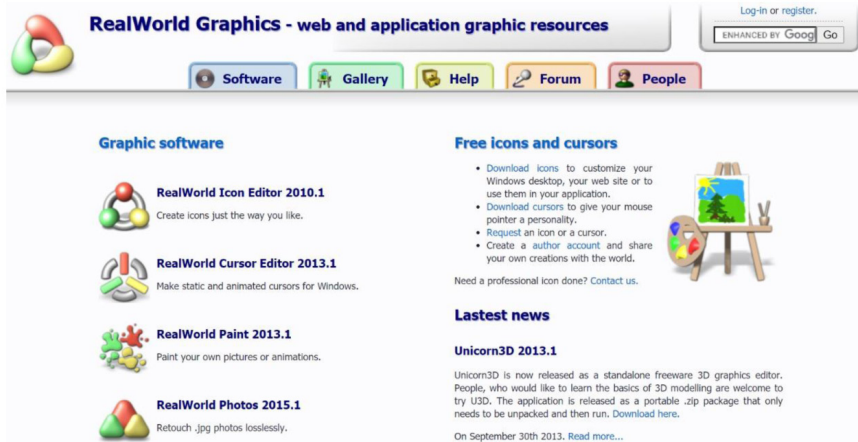
Screenshot of Khan Academy site Interface 2021. Courtesy of Khan Academy.

Brief Description

Khan Academy is one of the most important resources for students and teachers. It contains thousands of interactive educational videos. It is free.

RealWorld Graphics

<http://www.rw-designer.com/>



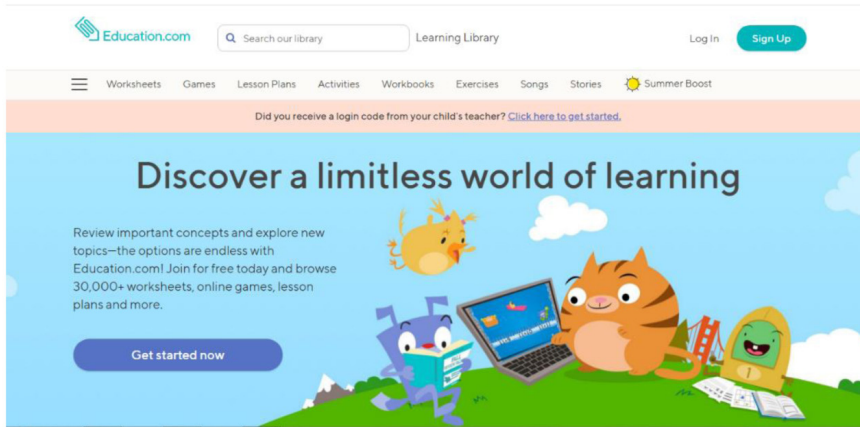
Screenshot of RealWorld Graphics site Interface 2021. Courtesy of RealWorld Graphics.

Brief Description

RealWorld Graphics is a site that helps content designers a lot. It contains many features and capabilities that help in designing interactive content.

Education.com

<https://www.education.com/>



Screenshot of Education site Interface 2021. Courtesy of Education.com, Inc, a division of IXL Learning .

Brief Description

This educational website provides resources for pre-K to 8th grade. The learning materials and digital resources are created by educational experts and cover math, social studies, English, and science subjects. There are a variety of invaluable resources to select from such as worksheets, online games, lesson plans, interactive stories, and science projects that make learning engaging and interesting for students. The resources come in both printable and digital versions that can be accessed by any device and anywhere. The basic (free) membership will allow you to download three resources per month.

Advantages

- Provides resources that are appropriate for a variety of grade levels and subjects.

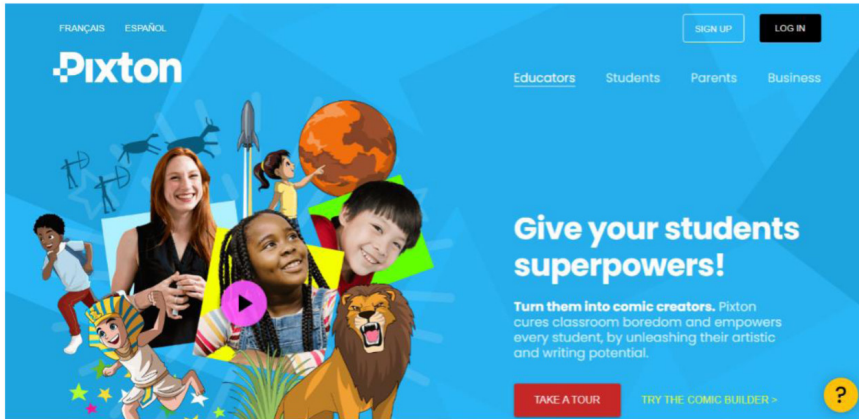
- The learning library allows you to access thousands of learning resources quickly and easily.
- Offers differentiated resources to accommodate students' different needs.
- Provides a progress tracker that allows teachers to monitor students' progress, assess their skills, and identify areas students struggle with.
- Helps to keep students motivated to learn as it provides interactive materials that are fun to use and support students' learning.

Recommended Learning Resources

- [How to use Education.com games](#)
- [Assignments](#)
- [Tutorial: Getting Started with Guided Lessons](#)
- [Tutorial: Download Multiple Worksheets from Education.com](#)

Pixton.com

<https://www.pixton.com/>



Screenshot of Pixton site Interface 2021. Courtesy of Pixton Comics Inc..

Brief Description

Pixton is a comic-making app for creating illustrated comics and storyboards. This is a great application if you want to boost your students' creativity and imagination while having fun and deeply engaging in the activities.

Pixton is free. It also has in-app purchases with extra themes and content.

Advantages

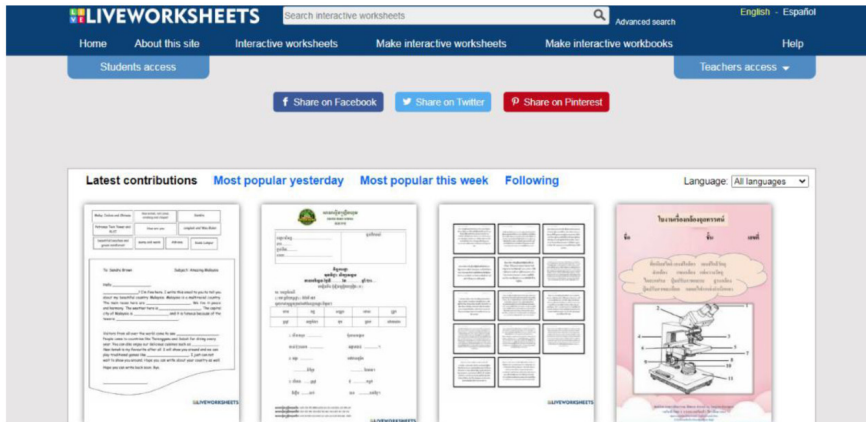
- A very easy app to use for students as the icons have images indicating their function.
- There are a variety of features such as avatars, backgrounds, themes, and texts. All of these come with numerous choices.
- Teachers can create their own assignments or use pre-existing projects.
- Pixton is accessible through web browsers as well as on phones, tablets, and computers.

Recommended Learning Resources

- [Pixton How-to Guide](#)
- [Pixton Comics YouTube Channel](#)
- [Pixton Walkthrough](#)
- [How to Use Pixton to Create Comics](#)

Liveworksheets

<https://www.liveworksheets.com/>



Screenshot of Liveworksheets site Interface 2021. Courtesy of Liveworksheets operated by Kreatics Web Development SL

Brief Description

Liveworksheets is a tool that converts printable worksheets into interactive online ones. You can upload different formats such as doc, PDF, jpg, etc. to create interactive online exercises. You can either make your own interactive worksheets or use ready-made ones created by other teachers. Students enjoy interactive worksheets and teachers can save time as the exercises can correct themselves!

Advantages

- There are thousands of pre-existing interactive worksheets for different subjects and in different languages.
- Liveworksheets accommodate different exercises such as matching, multiple-choice, and drag and drop exercises.
- You can add videos, audios, and speaking exercises where stu-

dents use microphones.

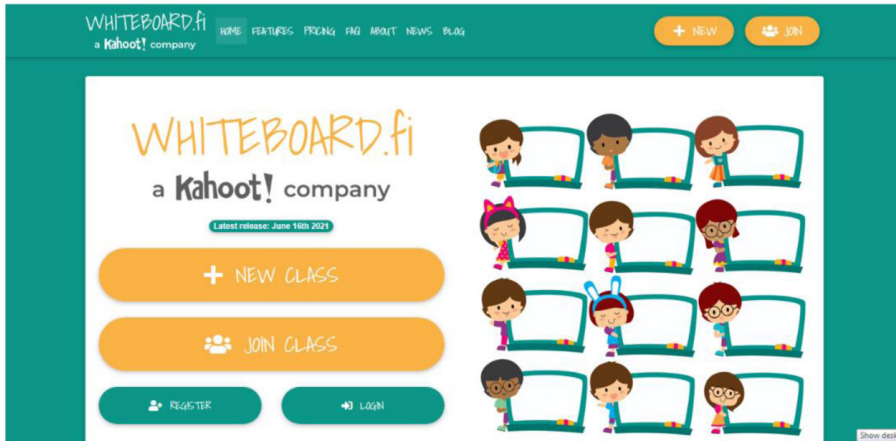
- The worksheets have the self-correction feature where it shows students the correct and wrong answers.
- Students can solve the worksheets online and then end their work to the teacher.

Recommended Learning Resources

- [Getting started guide](#)
- [How to make interactive worksheets](#)
- [LIVEWORKSHEETS TUTORIAL 2021. How to use its basics and BEST TRICKS](#)
- [How to make interactive worksheets](#)

whiteboard.fi

<https://whiteboard.fi/>



Screenshot of Whiteboard.fi site Interface 2021. Courtesy of Whiteboard.fi, a Kahoot company

Brief Description

Whiteboards are an essential tool in education. Whiteboard.fi is an application which lets users have the same board (page) with multiple collaborators. This is a must-use application for any teacher who has many students and is unable to conduct formative assessments.

Advantages

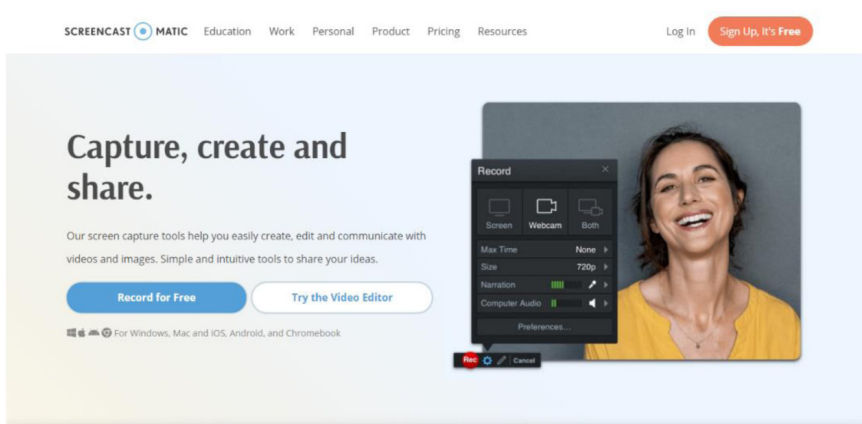
- Best for large classrooms and virtual classrooms.
- Helps teachers to provide immediate feedback by quickly looking at students' work.
- Whiteboard pages can be customized as blank, gridlines, etc.
- Whiteboard pages can be downloaded as a PDF (available in paid version).

Recommended Learning Resources

- [Whiteboard.fi Tutorial for Teachers](#)
- [Whiteboard.fi guide](#)
- [How to Use Whiteboard.fi: Free Digital Whiteboard](#)
- [Whiteboard.fi blog](#)

Screencast-o-Matic

<https://screencast-o-matic.com/>



Screenshot of Screencast-o-Matic site Interface 2021. Courtesy of Screencast-O-Matic

Brief Description

Screencast-O-Matic is a screen recorder and video editor. It has easy-to-use tools that help you to record your webcam as well as your screen and share videos in no time. It is a powerful tool that enhances the learning experience as it enables teachers to make tutorials, e-learning videos, and lessons for classroom instruction. Thus, students can view the videos and learn on their own. Students themselves can also record their own videos to share their ideas on a topic.

The software application is free to use. However, the free version is restricted to recording videos under 15 minutes.

Advantages

- Recording your screen quickly, easily, and in high quality.
- Take screenshots of your screen or your window and edit it with arrows, texts, and other features.

- The software application has a variety of editing tools that can improve your video. You can add animations, pictures, and music, etc.
- There is a Screencast-O-Matic stock library to search for high-quality stock photos and videos to improve your video.

Recommended Learning Resources

- [Beginner's Guide to Screencast-O-Matic's Free Screen Recorder](#)
- [Basic Screencast-O-Matic Tutorial](#)
- [How To's, Training and Tutorials](#)
- [Easy Editing Guide to Screencast O Matic's Video Editor](#)

Seesaw

<https://web.seesaw.me/>



Brief Description

Seesaw is a digital portfolio where students can show their work to demonstrate their learning. It can be used for all subjects and at all grade levels. It increases students' engagement and makes the learning experience more enjoyable. Students get to submit their work using different forms such as videos, pictures, recordings and files. Seesaw can be accessed by any device through the app or the website. It is free for teachers.

Advantages

- Each student has their own journal to document their work and share what they are learning.
- You can connect parents, which promotes parental involvement as they can see what their kids are learning and comment on their kids' work.
- Teachers can respond to students' work and provide them with

- feedback by using written or voice comments.
- It has peer-to-peer feedback, which encourages students' interaction with one another.

Recommended Learning Resources

- [Quick Start for Free and Plus Teachers - Introduction to Seesaw](#)
- [Create Your First Activity on Seesaw](#)
- [Seesaw Activities: Assigning Activities to Students](#)
- [Feedback and Drafts on Seesaw Mini-Training](#)

ClassDojo

<https://www.classdojo.com/>

Bring every family into your classroom

Join 95% of U.S. schools using ClassDojo to engage kids and connect with families! Free for teachers, forever.

Sign up as a...

Teacher Parent Student School Leader

Create a positive culture
Teachers can encourage students for any skill or value — whether it's working hard, being kind, helping others or something else.

Give students a voice
Students can showcase and share their learning by adding photos and videos to their own portfolios.

Share moments with parents
Get parents engaged by sharing photos and videos of wonderful classroom moments.

Screenshot of ClassDojo site Interface 2021. Courtesy of ClassDojo, Inc.

Brief Description

ClassDojo is an online platform that connects teachers, students, and families. Teachers can use it to communicate with parents by sending messages or uploading photos and videos to show students' work. Moreover, ClassDojo is a great management tool as you can give students points, assign activities, set timers, and divide students into groups. Students find it motivating and it encourages them to work hard. In addition to that, students can show their work by uploading videos or pictures on their portfolios. Teachers can then provide students with feedback and monitor students' progress. The app is free.

Advantages

- Students can create portfolios to add their photos and videos easily to share their learning.
- An effective management tool to track attendance, record students' behaviors, and give them points.
- Promotes parental involvement as teachers share students' photos and videos.
- You can send class messages as well as private messages.
- Make announcements on Class Story.
- Messages can be translated into more than 35 languages.
- Accessible on all devices such as tablets, computers and smart-boards.

Recommended Learning Resources

- [Class Dojo Remote Learning | Tutorial for teachers](#)
- [ClassDojo Portfolios Walk Through](#)
- [Scheduling Messages in ClassDojo](#)
- [ClassDojo Awarding and Redeeming points](#)

Wordwall

<https://wordwall.net/>

The screenshot shows the Wordwall website's template selection page. At the top, there is a navigation bar with the Wordwall logo, the tagline 'Create better lessons quicker', and links for 'Home', 'Features', 'Price Plans', 'Log In', 'Sign Up', and a language selector set to 'English'. The main heading is 'Find out about our templates', followed by the instruction 'Select a template to learn more'. Below this, there is a grid of 15 activity templates, each with a small icon and a brief description:

- Match up**: Drag and drop each keyword next to its definition.
- Group sort**: Drag and drop each item into its correct group.
- Unjumble**: Drag and drop words to rearrange each sentence into its correct order.
- Open the box**: Tap each box in turn to open them up and reveal the item inside.
- Anagram**: Drag the letters into their correct positions to unscramble the word or phrase.
- Maze chase**: Run to the correct answer zone, whilst avoiding the enemies.
- Quiz**: A series of multiple choice questions. Tap the correct answer to proceed.
- Find the match**: Tap the matching answer to eliminate it. Repeat until all answers are gone.
- Matching pairs**: Tap a pair of tiles at a time to reveal if they are a match.
- Wordsearch**: Words are hidden in a letter grid. Find them as fast as you can.
- Gameshow quiz**: A multiple choice quiz with time pressure, lifelines and a bonus round.
- Flip tiles**: Explore a series of two sided tiles by tapping to zoom and swiping to flip.
- Random wheel**: Spin the wheel to see which item comes up next.
- Missing word**: A cloze activity where you drag and drop words into blank spaces within a text.
- Labelled diagram**: Drag and drop the pins to their correct place on the image.
- Random cards**: Deal out cards at random from a shuffled deck.
- True or false**: Items fly by at speed. See how many you can get right before the time runs out.
- Image quiz**: An image is revealed slowly. Buzz in when you can answer the question.

Screenshot of Wordwall site Interface 2021. Courtesy of Wordwall.

Brief Description

Wordwall is an online tool that allows teachers to create interactive activities and games. It makes learning more fun and increases students' engagement in class. Creating activities is so easy and quick as you only need to choose a template, enter your content, and then the application will instantly convert the content into the desired activity. The basic account allows you to create up to five activities for free. Wordwall is offered as both a free and paid application.

Advantages

- Wordwall offers plenty of ready-made activities that you can add and edit.

- There is a wide range of activity templates to select from e.g., match up, random wheel, wordsearch and matching pairs.
- The created activities can be switched into different templates by simply clicking on the desired template. This helps teachers to create differentiated activities.
- You can assign assignments for students to solve on their own and then check their scores.
- The activities can also be printed out because templates in Wordwall come in an interactive version and as a printable version.

Recommended Learning Resources

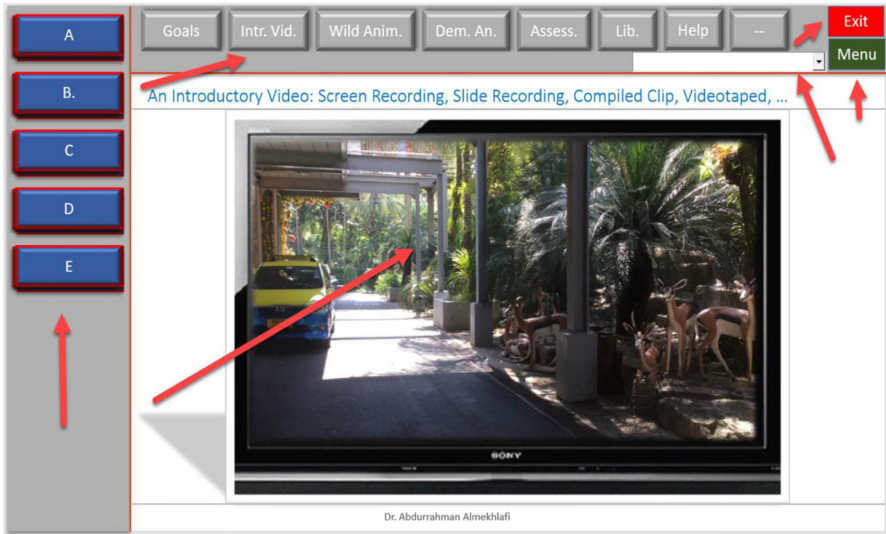
- [Getting started tutorial](#)
- [How to create Interactive Activities on Wordwall | Complete Tutorial](#)
- [WORDWALL - HOW TO SHARE A LINK?](#)

User Interface Screen Design Screenshots

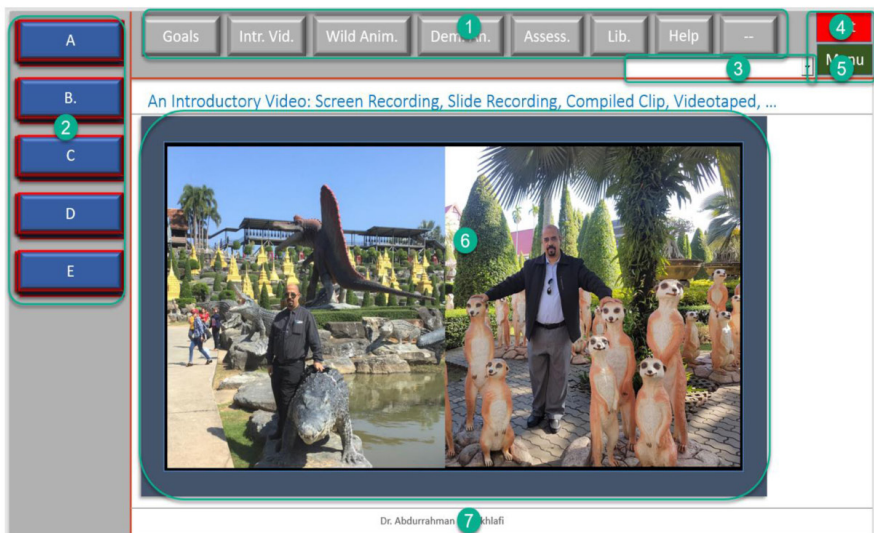
Here are some examples for designing the project's user interfaces.



A Screenshot for the user interface (1)



A Screenshot for the user interface (2)



A Screenshot for the user interface (3)

Conclusion

First and foremost, praise and thanks are due to the Almighty Allah Whose blessings are numerous. This book has seen the light of the day with the help and support of Him.

Second, I have come to the final stage of writing this book which provides the reader with detailed theoretical and practical steps, applications, programs, and services for designing and creating interactive digital content based on the ADIC model that is built according to Al-Mekhlafi (2020). The main features of this book are summarized in the following:

- The importance of this model stems from the fact that it provides immediate and future positive solutions for the obstacles and problems that prevent the teaching and learning process from being implemented properly. The Covid-19 pandemic is a case in point.
- The book contains a theoretical aspect in which the importance of designing educational programs and applications is presented. It also presents a summary of the international models in the field.
- The second chapter of the book describes the ADIC model, its importance, its steps including planning, designing, production, and evaluation that includes both immediate and post facto feedback.
- The book also presented in detail the steps clearly and accurately for every stage of implementing the program. Moreover, it focuses on the important capabilities of the program that enable the teachers and their students achieve their objectives.
- The importance of the book is centered around its practical steps and the suggestions of the applications, programs, and services that we need for creating interactive content. Most of those applications and programs are taken from the Apple

Store or from other platforms. They have been selected based on their stability and their relationship to the steps of implementing the ADIC Model.

- The book was supported with a few mini practical programs and applications that were presented by graduate students in the College of Education at the Emirates University. Although these projects are small, they are considered as a starting point for the implementation of the program in other courses.
- This book calls upon those who are in charge of education in schools, colleges and universities to adopt the model and apply it on a large scale.
- The ADIC model is a serious attempt to activate the mechanisms of learning that are compatible with the global knowledge trend demonstrating the various means of communication that provide safer, faster, and more accessible services.
- The door is open to any comments, suggestions, or ideas for improving and enriching this book. I also invite you to upload your project that you might have developed as a result of reading this book. The comments, suggestions, and additions can be sent either by filling in the form below or send an email:

[Click to launch Google form or scan the QR code.](#)



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Education

- 1999-2000 - Post-doctorate and ad hoc faculty member, ASU, USA.
- 1999 – Ph.D. Curriculum/Educational Technology, ASU, USA.
- 1995 – M.A. Teaching English as a Second Language ASU, USA (GPA 4.0).
- 1993 – Postgraduate Diploma English Language Studies, Sana’a University, Yemen.
- 1989 – B.A. English, F. Education, Sana’a University, Yemen (1st).
- 1985 – Teachers’ Institute Diploma, ranked 4th in the Republic of Yemen.

Academic Experience

- 1989-1993 – TA at Sana’a University, teaching English at almost all the colleges.
- 1999-2000 – Ad hoc faculty member at ASU, USA teaching graduate and undergraduate students.
- 1995-1999 – Research Assistant at technology-based learning and research, ASU, USA.
- 2000-present – Assistant and Associate Professor teaching graduate and undergraduate courses at the United Arab Emirates University.
- 2000-present – Consultant, licensed trainer for many K-12 school and higher education institutions. Delivered numerous lectures and workshops on the topic of technology integration into the curriculum.

- 2016-2017 – Coordinator of the Assessment Unit at the Center for Excellence in Teaching and Learning (CETL) at the United Arab Emirates University.

Research

- 2016-2019 – Editor-in-chief of the International Journal for Research in Education.
- Published more than 20 research manuscripts in regional and international journals such as Educational and Information Technologies, Science Education International, International Journal of Instruction, Educational Technology & Society, Exceptionality Education International, Journal of Education and Social Sciences, Special Education Research Policy & Practice, Journal of International Special Needs Education, Journal of Interactive Learning Research, International Journal of Humanities and Social Sciences, International Journal of Business and Social Science, International Journal of Instruction, Education and Information Technologies, and Interactive Technology and Smart Education.
- Presented and attended numerous local, regional, and international conferences.
- Supervised numerous MA theses and served on several PhD dissertation committees.
- Served as an external evaluator for several PhD dissertations in different countries.
- Active reviewer for numerous international research journals.
- Authored a number of books, booklets, and training modules on the topic of technology integration into the curriculum.

Awards

- 2004 – Best Individual Research, College of Education.
- 2019 – Excellence in College and Community Service.
- Numerous research grants, College of Education, UAE University.



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