# The Impact Of Digital Tools On Education: Implication For The 5E Instructional Framework

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## Abstract

The present manuscript aims to explicate the 5E Instructional Model, which is an efficacious constructive approach to lesson planning that can be implemented in the classroom with or without digital tools. This model consists of five distinct stages, namely Engage, Explore, Explain, Elaborate, and Evaluate, with specific digital tools recommended for each stage. By incorporating these digital tools in lesson plans, educators can successfully motivate learners and make lessons more engaging and stimulating. This model places a strong emphasis on learners' activities, thereby making it an ideal learner-centred approach.

**Keywords:** Lesson Plan, Digital Pedagogy, Constructivism, Self-evaluation. Digital Tools.

## Introduction

In the current scenario where the COVID-19 pandemic is affecting academics, it is crucial to have well-planned lesson plans that incorporate digital tools at all levels of instruction. Unfortunately, such lesson plans are not readily available. However, a well-structured and effective lesson plan can greatly assist teachers in their teaching process.

This paper discusses some essential points for lesson planning in digital pedagogy. The lesson plan proposed in this paper consists of five steps - Engage, Explore, Explain, Elaborate, and Evaluate - which place the learner at the centre of the teaching-learning process. Initially, teaching methods revolved around behaviourism, then shifted to cognitivism, and now educators, especially at the school level, focus more on constructivism. Therefore, this lesson plan, with its digital tools, can make pedagogy more meaningful, interesting, and innovative.

The lesson plan primarily focuses on three components: the teacher's role, the learner's role, and information related to digital tools. Each step of the lesson plan emphasizes the importance of teaching in the digital mode, and it is up to the teacher to decide how best to utilize the digital tools available for teaching and learning purposes.

Digital tools have a lot to offer, and it is essential to explore their usefulness in the classroom.

## Elements of the 5E Lesson Plan

### First Step: Engage

| Sl. | Element of 5E Lesson Plan | Teachers' Activity | Learners' Activity | Digital Tools |
|-----|---------------------------|--------------------|--------------------|---------------|
|     |                           |                    |                    |               |

| 1 | **Engage** | Encourage learners to engage by connecting to their previous knowledge. | Listen Attentively. Ask questions Show interest in the lesson. Answer questions. | Google Classroom. LMS like Canvas. Padlet. Jamboard. Mentimeter. |
|---|---|---|---|---|

## Teachers' Activity

Teachers have certain activities that they need to perform in order to ensure effective teaching. Firstly, they have to create interest in the learners by using brainstorming and questioning techniques. For example, they can ask the learners to share their thoughts on a picture, give their opinion on a video, or offer suggestions to change a story as per their wish. Secondly, it is important for teachers to know the level of knowledge of their learners and connect the new lesson to their previous knowledge to show continuity and help them establish links between the two topics.

## Learners' Activity

As for the learners, they need to listen attentively to the teacher, show interest in the topic, ask questions related to the topic, and answer questions posed by the teacher.

## Digital Tools

To engage learners effectively, teachers can use digital tools such as Google Classroom, Canvas, Padlet, Jamboard, Mentimeter, etc. These tools can help generate interest among learners and make the learning process more interactive.

| Sl. | Element of 5E Lesson Plan | Teachers' Activity | Learners' Activity | Digital Tools |
|---|---|---|---|---|
| 2 | **Explore** | Facilitate learning. Pose probing questions. Give time for learners to think and reflect. Encourage cooperative learning. Observe and listen to learners. Help discover new learning items. Help learners research the topic. Explore teacher-curated resources. Crowdsource. | Become a good listener. Do tasks, predict and generalize. Share ideas. Record observations. Establish relationship and understand. Discuss tentative alternatives. | InsertLearning. LMS Online Discussion. Wakelet. Google Search Newsela. Smithsonian Tween Tribune Google Classroom. Shared Slide Deck. |

**Second Step: Explore**

**Teachers' Activity**
Teachers have a significant role in facilitating effective learning. This can be achieved by allowing learners to explore concepts through inquiry-based questioning, providing ample time for reflection and thinking, encouraging cooperative learning, and being attentive and observant to learners' needs. Teachers can also curate resources from other teachers, such as videos, articles, and podcasts, and share them with learners. Additionally, teachers can use a pedagogical approach called crowdsourcing, which involves inviting learners to participate and share their ideas. This approach often results in superior content and ideas, making it a valuable tool in the teaching and learning process.

**Learners' Activity**
As a learner, there are several important steps to follow to maximize the benefits of the learning process. These include:
1. Listening carefully is key to understanding and performing well on learning activities. Patience and attentiveness are important qualities for any learner.
2. Completing tasks, making predictions, and generalizing: Learners should complete tasks, make predictions, and generalize what they've learned to apply it to other situations.
3. Sharing ideas with peers, learners can engage in cooperative learning and gain a deeper understanding of the concept.
4. Careful observation is important for assimilating new content.
5. Engaging in discussion helps learners broaden their understanding of the concept and develop new ideas.
6. Learners must understand how ideas and concepts relate to one another and how they fit into the broader context.

**Digital Tools**
Here are some important tools that can be used by both teachers and learners: YouTube, LMS Online Discussion, Wakelet, Google Search, Newsela, Smithsonian Tween Tribune, Google Classroom, Shared Slide Deck, etc.

| Sl. | Element of 5E Lesson Plan | Teachers' Activity | Learners' Activity | Digital Tools |
|-----|---------------------------|--------------------|--------------------|---------------|
|     |                           |                    |                    |               |

http://www.webology.org

| 3 | **Explain** | Make online or in-class presentations. Record video explanation. Encourage learners to explain their observations in their own words. Provide definitions and new words. Listen and build on the discussion. Ask for clarification and justification. Connect prior knowledge to new topics. Use academic language to express ideas. | Listen, define, explain, and question. Use previous experiences and observations. Respond to questions. Interact positively. | Google Hangout or Zoom. Screencastify. Share videos from Google Drives FlipGrid |

### Third Step: Explain

### Teachers' Activity

Teachers have several responsibilities to help learners grasp new concepts effectively. They need to make online or in-class presentations to explain the subject matter. In addition, teachers should record video explanations to enhance learners' understanding through visual media. Furthermore, they should encourage learners to explain their observations in their own words to ensure comprehension. Teachers must provide definitions, new words, and explanations to help learners understand the material better. They should also listen carefully to learners' discussions and build on them, making learners an integral part of the learning process. Asking for clarification and justification helps learners solidify the topics learned. Teachers should connect prior knowledge to new topics and ensure that learners transfer new knowledge. Finally, teachers must use academic language to express ideas as formal language is essential to convey new knowledge effectively.

### Learners' Activity

To acquire knowledge, learners should engage in key activities such as listening, defining, explaining, and questioning. Additionally, learners should utilize their previous experiences and observations to better understand the topic at hand. It's important for learners to give appropriate responses and interact positively, as doing so can help them learn more quickly and effectively.

### Digital Tools

These tools are designed to assist teachers in explaining concepts to students easily. They

enable learners to exchange knowledge through recorded videos. Some of the digital tools used in this stage include Google Hangout or Zoom, Screencastify, sharing videos from Google Drives, and FlipGrid.

## Fourth Step: Elaborate/Extend

| Sl. | Element of 5E Lesson Plan | Teachers' Activity | Learners' Activity | Digital Tools |
|---|---|---|---|---|
| 4 | **Elaborate** | Use previously learnt information to enhance additional learning. Guide learners to apply the new skills and concepts. Encourage learners to use terms and definitions recently learnt. | Use probing questions. Use new terms and definitions. Draw conclusions and solutions. Record observation, explain and solution. | Quizz. Screencastify. Shared Google Docs, Slides, Drawings, Spreadsheets FlipGrid Quizlet Kahoot! |

## Teachers' Activity

Teachers have three important responsibilities. Firstly, they need to use previously learnt information to enhance additional learning. This means that teachers should make an effort to build on the concepts that learners have already mastered. Secondly, teachers must guide learners to apply new skills and concepts in an appropriate context. They should help learners to understand how to use new skills and concepts in practical situations. Finally, teachers should encourage learners to use terms and definitions that they have recently learnt. This will help them to extend or elaborate on their understanding of new concepts, which is proof of effective learning.

## Learners' Activity

To facilitate effective learning, learners must adhere to the following guidelines:
1. Probing questions play a vital role in expounding on a given idea or concept, thereby promoting a comprehensive understanding of the subject matter.
2. Assimilating new terms and definitions, learners stand to benefit from an expanded lexicon, which ultimately enhances their knowledge and understanding of the topic at hand.
3. Recording observations and providing detailed explanations are instrumental in demonstrating a thorough grasp of the subject matter, as they allow learners to articulate their understanding of the topic clearly and concisely.
4. Learners can showcase their high level of comprehension and expertise in drawing conclusions and proposing solutions, thereby solidifying their knowledge base and promoting critical thinking skills.

## Digital Tools

Teachers use various digital tools to facilitate topic elaboration, such as Quizz, Screencastify, Shared Google Docs, Slides, Drawings, Spreadsheets, FlipGrid, Quizlet, Kahoot!, and others.

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|---|---|---|---|---|
| 5 | **Evaluate** | Observe learners as they explore and apply new skills and concepts. Evaluate learners' knowledge and skills. | demonstrate an understanding or knowledge of skills and concepts. answer open-ended questions. self-evaluate their learning. | Quizz, FlipGrid, Schoology, quiz, Google Forms, Socrative, Kahoot!, etc. |

| | | Let learners self-evaluate their learning. | | |
|---|---|---|---|---|
| | | | | |

**Fifth Step: Evaluate**

**Teachers' Activity**
Teachers have several responsibilities, including observing learners as they explore and apply new skills and concepts. This observation will help teachers evaluate learners effectively. Additionally, evaluating learners' knowledge and skills is mandatory in any teaching-learning process. Asking open-ended questions is also essential to determine how well the learners have grasped the teaching points. Finally, it is crucial to encourage learners to self-evaluate their learning.

**Learners' Activity**
Learners are required to do the following:
  a. Show that they comprehend and have a grasp of the skills and concepts taught; this has an impact on the teacher's assessment.
  b. Respond to questions that have no definite answers, in order to arrive at a conclusion about academic performance.
  c. Assess their own learning, which is helpful to the student and helps reduce test anxiety.

**Digital Tools**
These use tools help teachers to evaluate learners effectively. Some of the digital tools used in this stage are: Quizz, FlipGrid, Schoology. quiz, Google Forms, Socrative, Kahoot!, etc.

**Conclusion**
This paper discusses the essential aspects of digital pedagogy, which are useful for teaching students across the academic spectrum. It is hoped that every teacher will explore the world of digital tools to enhance their teaching. By using digital resources, teachers have limitless opportunities to engage learners and positively impact their knowledge and skills in various fields of activity.

In addition, the paper highlights the importance of constructivism in the 5E approach to lesson planning. This approach gives necessary autonomy to both learners and teachers, encouraging active participation and engagement in the learning process.

**Reference**
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