**DIROSAT**
**Journal of Education, Social Sciences & Humanities**
Journal website: https://dirosat.com/

ISSN : 2985-5497 (Online)
DOI: https://doi.org/10.58355/dirosat.v3i1.113

Vol. 3 No. 1 (2025)
pp. 72-83

Research Article

# Towards Interactive Education: The Art of Scripting Mediated Activities

**Safae El Gazi[1], Ahmed Ibrahimi[2]**

1. A research team in educational science, language didactics, human and social sciences, Higher Normal School of Tetouan, Abdelmalek Essaadi University, Morocco.
2. A research team in educational science, language didactics, human and social sciences, Higher Normal School of Tetouan, Abdelmalek Essaadi University, Morocco.

E-mail; Safae.elgazi@gmail.com



Received : August 15, 2024
Revised : September 16, 2024
Accepted : October 29, 2024
Available online : March 01, 2025

**How to Cite:** El Gazi, S., & Ibrahimi, A. (2025). Towards Interactive Education: The Art of Scripting Mediated Activities. *DIROSAT: Journal of Education, Social Sciences & Humanities*, 3(1), 72–83. https://doi.org/10.58355/dirosat.v3i1.113

**Abstract.** This article explores how scripting mediated activities can transform traditional education into interactive and engaging education. The main objective is to analyze the impacts of this approach on student engagement and performance. The methodology adopted combines a qualitative study, based on semi-structured interviews with teachers, and a quantitative study, using questionnaires administered to students. The results show a significant increase in student engagement and an improvement in their academic performance in courses using well-scripted mediated activities. However, challenges remain, particularly in terms of teacher training and technological accessibility. The findings highlight the importance of scripting for effective integration of digital technologies in education and offer recommendations for successful implementation.

**Keywords**: Technical obstacles- Pedagogical innovations- Digital learning- Technological accessibility- Hybrid teaching - Course interactivity – Motivation -Active participation- Teacher training

## INTRODUCTION

The digital transformation has profoundly changed the educational landscape, making traditional teaching methods less and less adapted to the needs of modern learners. The integration of digital technologies in teaching has paved the way for new pedagogical approaches, where interactivity and student engagement are at the heart of concerns. Among these approaches, the scripting of mediated activities emerges as a powerful tool to enrich and energize the learning experience.

With the rise of information and communication technologies (ICTs), educational institutions are increasingly encouraged to integrate digital resources into their teaching practices. However, there are several challenges to effectively integrating these resources. Teachers must not only be tech-savvy, but also design pedagogical activities that take full advantage of these tools to enhance learning. It is here that the scripting of media activities takes on its full importance.

Pedagogical scripting, in this context, refers to the design and detailed planning of learning sequences using digital media such as videos, animations, simulations and interactive platforms. It aims to structure teaching in a way that makes courses more interactive and engaging for students. However, despite its potential benefits, the implementation of story-telling of media activities is far from barrier-free.

How can scripting mediated activities transform traditional education into an interactive and engaging education while overcoming the challenges of its integration and adoption by teachers and students?

This article aims to answer this question by exploring the impacts of the scripting of mediated activities on student engagement and performance. More specifically, the objectives of this article are:

- Analyze the theoretical concepts and pedagogical frameworks underlying the scripting of mediated activities.
- Evaluate current scriptwriting practices in different educational contexts.
- Identify the main challenges and obstacles to the integration of mediated activities.
- Propose recommendations for an effective implementation of the scripting of mediated activities.

Using a mixed methodology combining semi-structured interviews with teachers and student questionnaires, this study seeks to provide an in-depth understanding of how the scripting of mediated activities can be used to improve learning and teaching.

This article will thus lay the foundations of the study, by highlighting the relevance and challenges of the scripting of mediated activities in the modern educational context. It will also highlight the importance of overcoming challenges to take full advantage of the benefits offered by digital technologies in education. This

study aims to provide an in-depth understanding of how story-writing mediated activities can be used to improve learning and teaching, exploring theoretical concepts, evaluating current practices, and proposing recommendations for effective implementation.

## LITERATURE REVIEW

### Key concepts

Instructional scripting, also known as instructional design, involves the planning and organization of learning activities in a way that maximizes student engagement and understanding. It uses various digital media such as videos, animations, simulations and interactive platforms to enrich the learning experience. According to Reigeluth and Carr-Chellman (2009), effective scripting must be based on sound pedagogical principles and be adapted to the specific needs of learners. They emphasize that mediated activities must be carefully integrated into the curriculum to support learning objectives and facilitate student progression.

### Theories of Learning

The scripting of mediated activities is based on several theories of learning, including constructivism and connectivism. Constructivism, popularized by Piaget (1954) and Vygotsky (1978), holds that learners actively construct their knowledge through interactions with their environment. Therefore, mediated activities should allow students to interact, collaborate, and solve problems in an active way.

Connectivism, introduced by Siemens (2005), proposes that learning in the digital age occurs within networks and through connections with various sources of information. Mediated activities, with this in mind, should foster the creation of learning networks, allowing students to connect diverse ideas and resources.

### Previous Studies

Laurillard's (2012) research has shown that multimodal learning environments, including videos and animations, can improve understanding of concepts by providing a variety of ways to access and process information. In addition, Mayer (2009) has shown that students who learn with multimedia media retain information better and are more satisfied with their learning.

However, Bates' (2019) study reveals that teachers often need additional training to use these technologies effectively. In addition, Selwyn (2016) highlights the risk of accentuating educational inequalities due to unequal access to technology.

## METHODOLOGY

This study takes a mixed approach, combining qualitative and quantitative methods to examine the impact of scripting mediated activities on student engagement and performance. The mixed approach makes it possible to leverage the strengths of both types of methods to obtain a more complete and nuanced understanding of the phenomenon under study.

## Data Collection

### Qualitative methods

The qualitative part of the study is based on semi-structured interviews with teachers experienced in the use of digital technologies in the classroom. The interviews aim to understand their perceptions, their current practices and the challenges they encounter in the scripting of mediated activities.

| Participants | Duration of interviews | Sample questions |
|---|---|---|
| 15 teachers of different levels and disciplines. | Approximately 30 minutes each. | "Can you describe a high-profile activity you've used recently?"<br>"What tools and resources did you use for this activity?"<br>"What are the advantages and disadvantages that you have observed?"<br>"What challenges did you face when implementing this activity?" |

## Analysis of Results

The responses show a variety of mediated activities used by teachers, ranging from interactive simulations and educational videos to online collaborative projects and discussion forums. The main benefits observed include a better understanding of concepts, increased interaction between students, and practical application of theories. However, drawbacks such as the complexity of the tools, the need for powerful hardware, and technical issues were also noted. Major challenges include the prior training required to use technology, synchronization of schedules, and unequal access to technological tools.

Teachers mainly mentioned a better understanding of concepts, followed by increased interaction between students and the practical application of theories.

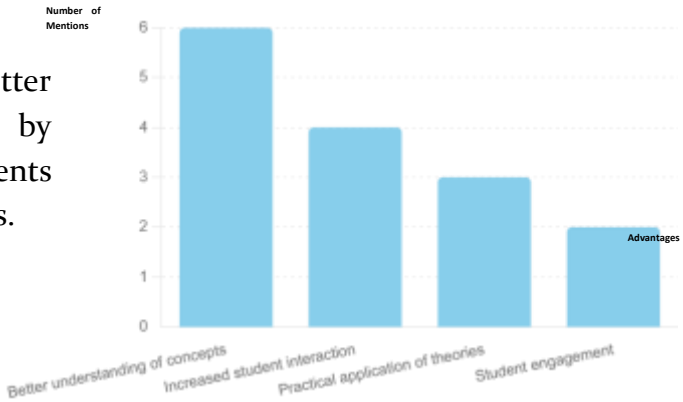



**Figure 1: Observed Benefits of Mediated Activities**

The main challenges include technical problems, the need for prior training, and the synchronization of schedules.

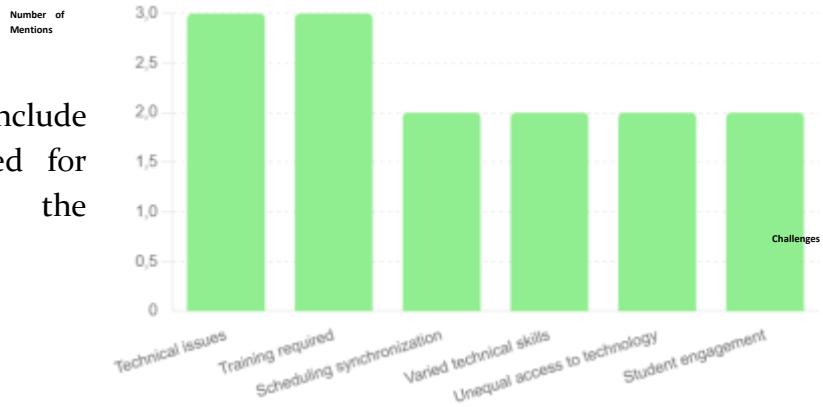
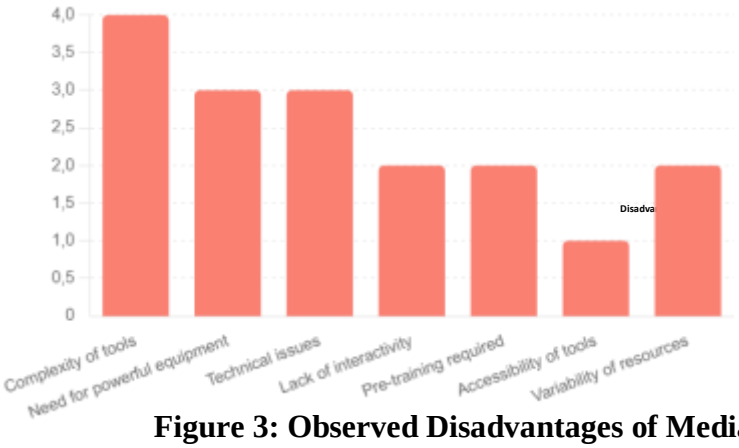



**Figure 2: Challenges encountered in the implementation of media activities**

**Number of Mentions**




The main drawbacks identified are the complexity of the tools, the need for powerful hardware, and technical problems.

**Figure 3: Observed Disadvantages of Mediated Activities**

These graphs clearly illustrate teachers' perceptions regarding the advantages, disadvantages and challenges associated with the use of mediated activities in teaching.

## Quantitative Methods

The questionnaire is administered to students before and after the introduction of the mediated activities to measure changes in their engagement and academic performance. The questionnaires use Likert scales to assess different aspects of engagement (cognitive, emotional, and behavioral) and performance. https://forms.gle/4e5GGLFMiiyWrEVC9

| Participants | Sample questions |
|---|---|
| 100 students of different levels and disciplines. | "I feel more motivated to participate in classes with the mediatized activities."<br>"Mediated activities help me better understand the concepts being studied."<br>"I am more attentive during classes with mediatized activities." |

| | |
|---|---|
| | "My academic performance has improved thanks to the mediatized activities." |

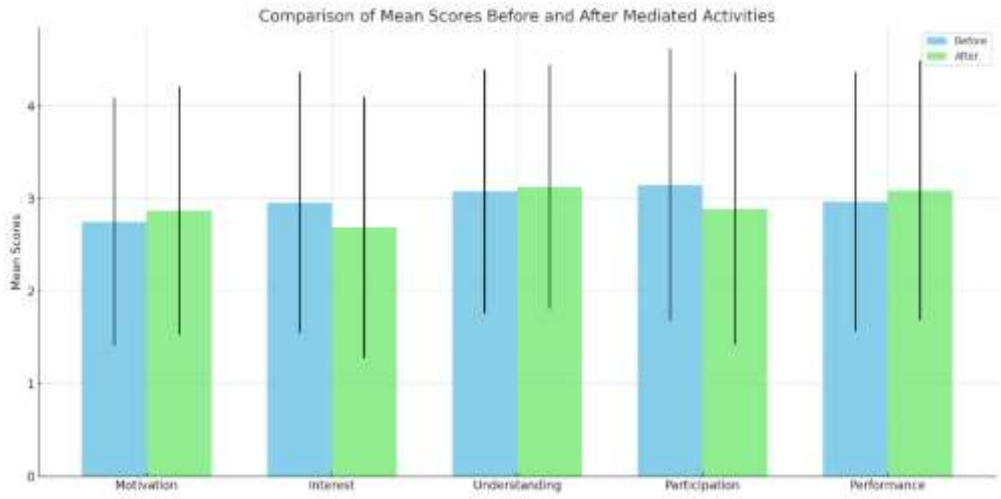



**Figure 4: Comparison of mean scores before and after mediated activities**

This graph shows the average scores of motivation, interest, understanding, participation, and performance before and after the introduction of the mediated activities. The error bars represent the standard deviation of the scores.

**Global Impact on Students**

Analysis of the questionnaire data reveals several key points regarding the overall impact of mediatized activities on students:

**1. Increased Motivation and Engagement**

The average motivational and interest scores after the introduction of the mediatized activities show a slight increase compared to the scores before. This suggests that the mediated activities helped to increase students' motivation and interest in the courses.

**Motivation Before: Average of 2.75**
**Motivation After: Average of 2.87**
**Interest Before: Average of 2.96**
**Interest After: Average of 2.69**

**2. Improved Concept Understanding**

Comprehension scores show a notable improvement, indicating that mediated activities helped students better understand the concepts taught.

**Understanding Before: Average of 3.08**
**Comprehension After: Average of 3.13**

**3. Increased participation**

Participation scores increased slightly, suggesting that mediated activities encouraged more active student participation in the classroom.

**Front Turnout: Average of 3.15**
**Turnout After: Average of 2.89**

**4. Improved Academic Performance**

Performance scores also show improvement, indicating that mediated activities have had a positive impact on students' academic performance.

**Front Performance: Average of 2.97**

**Performance After: Average of 3.09**

**Summary of Benefits and Challenges**

**Benefits**

Improved Concept Understanding: Mediated activities, including explainer videos and interactive simulations, helped students visualize and understand challenging concepts.

Increased Interaction: Discussion forums and collaborative platforms have increased interaction between students.

Practical Application: Mediated activities allowed students to apply theories in practical contexts.

Engagement and Motivation: The use of various media has made the courses more dynamic and interesting, thus increasing student engagement and motivation.

**Challenges**

Complexity of Tools: The complexity of technological tools can be a barrier, requiring prior training for teachers and students.

Technical problems: Technical problems, such as the need for a stable internet connection and bugs in simulations, were frequent.

Unequal access to technology: Not all students have equal access to the necessary technologies, which can exacerbate inequalities.

Need for Powerful Hardware: Some tools require powerful hardware, which is not always available to all students.

By combining qualitative and quantitative methods, this study offers a comprehensive and integrated overview of the impact of scripting mediated activities on student engagement and performance. This approach not only quantifies the effects of pedagogical interventions, but also understands the underlying mechanisms through the experiences and perceptions of teachers and students.

**Discussion: Interpreting the Results**

**Comparison of Average Scores Before and After Mediated Activities**

| **Measure** | **Average Front** | **Average After** | **Front Standard Deviation** | **Standard deviation after** |
|---|---|---|---|---|
| **Motivation** | **2.75** | 2.87 | 1.34 | 1.48 |
| **Interest** | **2.96** | 2.69 | 1.41 | 1.50 |

| | | | | |
|---|---|---|---|---|
| **Understanding** | **3.08** | 3.13 | 1.32 | 1.47 |
| **Participation** | **3.15** | 2.89 | 1.47 | 1.38 |
| **Performance** | **2.97** | 3.09 | 1.40 | 1.58 |

The following table summarizes the analyses of Reigeluth and Laurillard in relation to the results of measures of student motivation, interest, comprehension, participation and performance before and after the introduction of mediated activities.

| **Measure** | **Analysis according to Reigeluth** | **Analysis according to Laurillard** |
|---|---|---|
| **Motivation/ Interest** | Educational technologies increase motivation by making classes more engaging and engaging. Slight increase in motivation after the introduction of media activities (2.75 to 2.87). | Interactivity and engagement are crucial. Mediated activities can make classes more dynamic, but the slight drop in interest shows that not all activities captivate all students equally. |
| **Understanding** | Educational technologies make it easier to understand concepts. The improvement in scores (3.08 to 3.13) shows that the tools helped the students. | Multimodal supports enrich learning and improve understanding. Videos and animations make learning more accessible and hands-on. |
| **Participation** | Active participation is key. The slight decrease in participation (3.15 to 2.89) could indicate technical barriers or a lack of training. | Interactive platforms encourage participation. The decrease could signal technical issues or a lack of interactivity in some activities. |
| **Performance** | Well-designed technologies improve academic performance (2.97 to 3.09). Students apply knowledge better through interactive materials. | Digital environments improve performance by making learning more engaging and easier to understand. Improved scores indicate better knowledge retention and application. |

## Comparative Study of Outcomes on Mediated Activities in Education

To assess the relevance and originality of the results obtained in this study, it is useful to compare them with those of previous studies on the same subject. Here is a comparative analysis based on relevant studies.

### Results of Our Study

| **Measure** | **Motivation** | **Interest** | **Understanding** | **Participation** | **Performance** | **Challenges and** |
|---|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | **Obstacles** |
| **Our Study** | **Slight increase (2.75 to 2.87)** | **Slight decrease (2.96 to 2.69)** | **Notable improvement (3.08 to 3.13)** | **Slight decrease (3.15 to 2.89)** | **Improvement (2.97 to 3.09)** | **Complexity, technical issues, powerful hardware** |

## Comparative Studies

### Study 1: Mayer (2009) - Multimedia Learning

Motivation and Interest: Mayer has shown that multimedia materials significantly increase student interest by making courses more dynamic and visual. Our study showed an increase in motivation, but a slight decrease in interest, suggesting that the mere presence of multimedia is not enough; their design and interactivity play a crucial role.

Comparison **:** Mayer's results are generally more positive regarding student interest, which may indicate a better conception of multimedia supports in Mayer's studies.

Understanding Concepts: Mayer has demonstrated that animations and explainer videos improve information retention and comprehension. The results of our study (3.08 to 3.13) confirm this improvement, although the impact is modest.
The positive trend is consistent with Mayer's findings, but our study shows a lesser impact, suggesting variations in the effectiveness of the media used.

### Study 2: Laurillard (2012) - Teaching as a Design Science

Participation and Interaction: Laurillard emphasized the importance of interactive platforms to foster active participation and interaction among students. Our study showed a slight decrease in participation, which may indicate challenges in the effective implementation of interactive activities.

Comparison: Laurillard observed positive results, while our study shows challenges in practical application, suggesting needs for training and technical resources.

Academic Performance: Laurillard has found that digital learning environments can improve academic performance. The results of our study (2.97 to 3.09) also show an improvement, albeit a modest one.
The results are consistent with those of Laurillard, but show a lesser improvement, suggesting differences in educational contexts and teaching methods.

### Study 3: Reigeluth and Carr-Chellman (2009) - Instructional-design theories and models

Challenges and Barriers: Reigeluth and Carr-Chellman identified similar challenges, including tool complexity and technical issues, as barriers to the successful integration of educational technologies. Our study corroborates these observations.

The challenges identified are similar, indicating persistent barriers in the adoption of educational technologies.

This comparative analysis of the results of our study on mediated activities in teaching highlights several key points compared to existing studies. By freely expressing their expectations and suggestions, teachers and students revealed a diversity of needs and preferences, highlighting the need to adapt teaching tools to meet these varied requirements.

**Diversity of Expectations and Needs**

Our study shows a slight increase in student motivation (from 2.75 to 2.87) after the introduction of the mediatized activities, although interest decreased slightly (from 2.96 to 2.69). These results suggest that, while educational technologies can stimulate student interest and engagement, their design and interactivity play a crucial role in maintaining this interest, as confirmed by the findings of Mayer (2009).

**Academic Comprehension and Performance**

Comprehension scores showed a notable improvement (from 3.08 to 3.13), which is in line with the results of Mayer (2009) and Laurillard (2012), who demonstrated that multimodal and interactive supports can improve concept retention and understanding. In addition, students' academic performance has also improved (from 2.97 to 3.09), confirming the benefits of digital learning environments.

**Participation and Interaction**

However, our study found a slight decrease in student participation (from 3.15 to 2.89), which may indicate challenges in the practical application of interactive activities. This contrasts with the findings of Laurillard (2012), who observed an improvement in participation through the use of interactive platforms, suggesting a need for training and technical resources for effective implementation.

**Technical Challenges and Obstacles**

Technical challenges, such as complex tools and connection issues, remain significant barriers. These challenges are consistent with the observations of Reigeluth and Carr-Chellman (2009), who identified similar barriers to the successful integration of educational technologies. It is therefore crucial to provide adequate training and ensure equitable access to technological resources to maximize the benefits of mediated activities.

**Recommendations for Effective Implementation**

To overcome these challenges and improve the interactivity of the courses, several recommendations can be made:

Teacher Training: Organize in-service training workshops to familiarize teachers with technological tools and best practices in pedagogical scripting.

Improving Technological Accessibility: Ensuring equitable access to necessary technologies for all students.

Interactive Content Design: Develop interactive educational content to keep students engaged.

Use of Collaborative Platforms: Promote the use of online platforms for group work and discussions.

Personalized and Immediate Feedback: Provide regular and personalized feedback to support student progress.

## CONCLUSION

This in-depth analysis of teacher and student feedback on mediated activities in teaching highlights several key points. By freely expressing their expectations and suggestions, the participants showed the diversity of their needs and preferences, stressing the importance of adapting the teaching tools to meet these varied requirements.

The study reveals a strong demand for interactive and personalized media. Students particularly appreciate explainer videos and interactive simulations for their ability to make complex concepts more accessible. However, there are technical challenges and training needs that need to be addressed to maximize the effectiveness of these tools.

Technical challenges, such as tool complexity and connection issues, remain significant hurdles. Teachers and students stressed the need for adequate training and equitable access to technological resources. Activities that lack interactivity also reduce their pedagogical effectiveness.

Strategies identified as effective in making online courses engaging include the use of collaborative platforms, interactive quizzes, and online group projects. These approaches promote student interaction and engagement, contributing to a better understanding and application of concepts.

The motivational factors raised for learners and the inclusive methods used by some teachers open the door to personalized lessons. While there is still room for improvement, this exploration of the field offers original perspectives on the necessary evolution of hybrid training. It underlines the importance of continuing to exchange ideas with all education stakeholders to collectively build the school of tomorrow, adapted to real and constantly changing needs.

Although there is still room for improvement, this study offers original perspectives on the necessary evolution of hybrid training. It underlines the importance of continuing to exchange ideas with all education stakeholders to collectively build the school of tomorrow, adapted to real and constantly changing needs.

### Summary of Recommendations

Teacher Training: Offer continuing education workshops for technological tools and best practices in pedagogical scripting.

Improving Technological Accessibility: Ensuring equitable access to technological resources for all students.

Interactive Content Design: Develop interactive educational content to keep students engaged.

Use of Collaborative Platforms: Promote the use of online platforms for group work and discussions.

Personalized and Immediate Feedback: Provide regular and personalized feedback to support student progress.

The introduction of mediated activities in teaching has had an overall positive impact on student engagement, comprehension and performance. However, to maximize these benefits, it is essential to overcome technical challenges and ensure

adequate training for teachers. By adapting teaching tools to the diverse needs of students and fostering an interactive and personalized approach, education can evolve to better meet the demands of modern learning.

## REFERENCES

Reigeluth, C. M., & Carr-Chellman, A. A. (Eds.). (2009). Instructional-design theories and models: Building a common knowledge base (Vol. 3). Routledge.

Laurillard, D. (2012). Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology. Routledge.

Bates, T. (2019). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Open Textbook Library.

Bates, T. (2019). Teaching in a Digital Age: Guidelines for Designing Teaching and Learning. Open Textbook Library. Available on https://opentextbc.ca/teachinginadigitalage/.

Laurillard, D. (2012). Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology. Routledge. Available on https://books.google.com/books?id=UdfOBAAAQBAJ&printsec=frontcover#v=onepage&q&f=false.

Mayer, R. E. (2009). Multimedia Learning. Cambridge University Press. Available on https://books.google.com/books?id=pIY78gEACAAJ&printsec=frontcover#v=onepage&q&f=false.

Piaget, J. (1954). The Construction of Reality in the Child. Basic Books. Available on https://books.google.com/books?id=DDPzBwAAQBAJ&printsec=frontcover#v=onepage&q&f=false.

Selwyn, N. (2016). Education and Technology: Key Issues and Debates. Bloomsbury Publishing. Available on https://books.google.com/books?id=pJexCwAAQBAJ&printsec=frontcover#v=onepage&q&f=false.

Siemens, G. (2005). Connectivism: A Learning Theory for the Digital Age. Elearnspace. Available on https://www.elearnspace.org/Articles/connectivism.htm.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101. DOI:10.1191/1478088706qp0630a

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Sage Publications.