

# Teaching and Learning through Storyboarding: A New Approach via Critical Reflection

Zanyar Nathir Ghafar<sup>1\*</sup>, Bareq Raad Raheem<sup>2</sup>, Hemn Mohammed Ali Mahmood

<sup>1</sup>Pharmacy Department, Bright Technical and Vocational Institute, Sulaymaniyah, Kurdistan Region, Iraq

<sup>2</sup>Electric Computer Center, University of Diyala, Diyala, Iraq

<sup>3</sup>ESP Department, National Institute of Technology, Sulaymaneah, Kurdistan Region, Iraq

**Abstract:** This paper seeks to accomplish three primary objectives: firstly, it introduces the concept of storyboard teaching; secondly, it emphasises the efficacy of storyboard teaching in higher education as a means of customising instructional materials in both traditional and online programmes to suit the learners' needs and contextual factors; and thirdly, it advocates for the integration of storyboard teaching in the classroom, particularly in writing and language courses, alongside other innovative pedagogical approaches. This research highlights the significance of storyboarding as a means to foster critical thinking and active engagement among students. Learning encompasses more than just memory as individuals engage in reflection, evaluation, and personal growth as a direct consequence of their exerted effort. The study's results suggest that the use of storyboarding as a strategy enhances the preservation of essential ideas and graphical aspects within a narrative by highlighting significant events. This methodology allows students to gain information via the process of critical reflection rather than relying only on memorization methods.

**Keywords:** Strategy, originality, analytical thinking, intellectual growth, storyboarding.

**Copyright © 2023 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

## Review Paper

### \*Corresponding Author:

Zanyar Nathir Ghafar

Pharmacy Department, Bright Technical and Vocational Institute, Sulaymaniyah, Kurdistan Region, Iraq

### How to cite this paper:

Ghafar, Z.N., Raheem, B.R., & Mahmood, H.M.A., (2023). Teaching and Learning through Storyboarding: A New Approach via Critical Reflection. *Middle East Res J. Humanities Soc. Sci.*, 3(4): 94-100.

### Article History:

| Submit: 20.10.2023 |  
| Accepted: 21.11.2023 |  
| Published: 24.11.2023 |

## INTRODUCTION

In order to achieve success, educators must effectively deliver their lectures in a manner that is both genuine and relevant to real-life scenarios. Additionally, they must alter their teaching methodologies to accommodate the unique requirements of their students. Storyboarding is a pedagogical approach that aids educators in graphically communicating their concepts and involving learners in active and genuine learning experiences. In the current context, the inclusion of soft skills or real-life skills is undeniably a crucial need for ensuring genuine and engaging teaching practices. The use of a unique teaching technique in education needs to be improved since it fails to accommodate the diverse needs and learning styles of students. In a similar element, educators who prioritize efficiency use diverse teaching methods and approaches inside their classes. Storyboarding, among other instructional strategies, may contribute to this pluralistic approach to training. In their study, Knauf and Jantke (2006) provide an overview of instructional methods that use storyboards composed of organized episodes and scenes akin to the narrative

framework often seen in conventional forms of entertainment such as shows, plays, and movies. A few of the tools utilized in storyboarding include models, scripts, presentations, and textbooks. Storyboarding encourages students to think critically and creatively while providing a visual representation of the assignment's organizing procedure (Yusoff & Salim, 2014; Walker *et al.*, 2015). Students collaborate as a cohesive unit and use visual representations to articulate their thoughts and concepts. According to Denison (1995), storyboarding is a collaborative learning strategy used in the area of education to enhance organizational abilities and facilitate the creation of educational programs of various scales (p. 2). In addition, the practice of stimulating active learning is very beneficial since it involves instructors organizing a collective of students who engage in creative thinking, visualizing concepts, and actively contributing their thoughts. The team meticulously examines the concepts, and afterward, the approved ideas are graphically sketched out. The process of rearranging and organizing thoughts might be beneficial for enhancing team performance. The storyboarding module facilitates the generation of

diverse creative ideas, hence promoting active learning, innovation, and engagement among team members (Jantke & Knauf, 2005; Patton, 2012). Varvel and Lindeman (2005) assert that storyboards serve as a visual representation of the arrangement, structure, substance, and connections of information in order to provide a conceptual understanding of its contents, placement, significance, and visual presentation (p.1).

The instructional approach used in both traditional and modern is mostly teacher-centered and adheres to conventional teaching methods. Nevertheless, some educators adhere to the constructivist philosophy, engaging in continuous evaluation of their instructional methods and adjusting their teaching techniques accordingly in order to cater to the diverse requirements and developmental progress of their students. Storyboarding is a valuable tool that educators may use to effectively achieve their instructional objectives. By using this approach, instructors can provide an engaging and dynamic educational setting that increases student involvement, reflection, and personal growth. Simultaneously, it fosters the development of cooperation, accountability, imagination, and the ability to think critically among the university student population. Hence, the scholars highlight the utilization of storyboarding as a paradigmatic methodology for convinced components in order to effectively demonstrate, analyze, and evaluate the advancement of learners' educational development and accomplishments, ultimately leading to the attainment of desired learning objectives. The use of a potent tool facilitates collaborative learning.

**The primary purpose of the current study is to elucidate the following aims.**

- The need to accommodate various approaches in order to address the issues of both offline and online learning.
- The significance of storyboarding in the representation of teaching materials, the engagement of learners, the elicitation and assessment of their performance, and the facilitation of their overall learning in a convenient and captivating manner is emphasized.
- Storyboarding is investigated as a way to graphically define the instructional modules and, therefore, gently structure the thoughts of the teachers.

**The notion of theory is a fundamental component in the language of academia.**

The concept of theory is a fundamental component of academic discourse. It refers to a systematic framework of extensive study that exists about the use of storyboards across several fields, such as medicine, finance, computer science, and others. However, it is observed that there is a relatively lower volume of scholarly output in the field of arts and

humanities compared to other academic subjects. Storyboarding is a widely used technique that promotes active engagement, creativity, communication, innovation, and critical thinking among students. According to Barrows (2001), the utilization of this approach aids students in the development of adaptable knowledge, practical abilities, self-directed learning, accountability, effective collaboration skills, and intrinsic motivation for learning. Barrows further asserts that this approach actively contributes to the cultivation of essential learning skills, including working together, logical and creative thoughts, responsibility, and announcement. Hence, a storyboard is seen as a pragmatic approach within the realm of pedagogy, facilitating the process of instruction and acquisition of knowledge.

The term "activities" refers to a range of actions or tasks that individuals engage in. Furthermore, Fried-Booth (2002) asserts that storyboarding is a contemporary and pragmatic method that may be used to strategize and generate educational growth procedures for individuals at various points throughout their learning journey. In addition, it can be said that the use of storyboard teaching may also be applied in the instruction of certain skills, such as four language skills and problem-solving abilities (Dirckinck-Holmfeld, 2010). According to Doherty and Coggeshall (2005), a storyboard serves as a medium through which students may demonstrate their understanding of a given input by recounting the tale using both textual and visual elements. Dupen (2005) supports the use of the storyboarding technique as a means of problem-solving. The researcher instructs students on problem-solving procedures and afterward provides a set of handouts containing sequential pictures to aid in their resolution of multi-dimensional issues. Each handout provided to the learners has a representation of the preceding picture in the shape of a shadow. By seeing this shadow, the learners are able to mentally visualize the sequence of problem-solving steps and then execute the assignment with ease.

**Theoretical Implementation**

Hence, educators can include storyboards as a valuable instructional resource within their teaching methodologies. According to Knauf and Jantke (2006), it has been observed that education sometimes lacks proficient didactic abilities. The notion of storyboarding enhances the understanding of didactic abilities via the process of visualization. Based on the research mentioned earlier, it can be deduced that storyboards serve as a cognitive instrument that facilitates learners in visually sequentially delineating their tales., hence promoting analytical, critical, and creative thinking. This methodology encourages students to engage in brainstorming activities in order to develop their narratives and effectively chronologically present their tales, starting from the beginning and progressing toward the conclusion. In addition, the drawings or images

provided by them include corresponding words or phrases for illustrative purposes. Subsequently, the individuals can construct the ultimate version of the storyboard.

According to the research conducted by Andersson, Obery, and Eriksson (2011), the use of storyboards as a tool for fostering creativity has been shown to be very effective, particularly in the context of generating innovative project ideas. This effectiveness is attributed to the incorporation of past experiences in storyboard development, which contributes to the enhancement of creative output. Similarly, Balzotti (2016) regards storyboarding as an inclusive and inventive approach that may be used in multi-modal writing classrooms. Storyboarding may facilitate the transition of writing skills from general argumentation writing duties to more specialized media writing tasks among students. According to Tanrikulu (2020) and Hafour & Al-Rashidy (2020), students can connect their existing knowledge by using techniques such as sketching, visualization, and the creation of documentaries. These methods may facilitate the development of a novel writing modality that is both enhanced and collaborative. Ramasari, Erlina, and Anggraini (2020) conducted a study to investigate the effectiveness of the Project-Based Learning method utilizing storyboards in improving students' speaking skills. The research involved two groups, namely the control group and the experimental group, to compare the impact of the storyboard approach on speaking competence. Abuzaid and Al Kayed (2020) assert that the use of the storyboard approach yields enhancements in reading proficiency, as seen by their study, including a sample of 40 elementary-level pupils. The researchers have shown in their study that pupils are able to effectively differentiate between letters that have similar structural characteristics but have distinct pronunciations aided by visual representations. The use of storyboards as an instructional strategy is evidently advantageous for students, as it involves students in more creative and original methods of acquiring knowledge.

Based on the above discussion, it can be argued that the use of a storyboard exhibits considerable pragmatic potential that may be implemented within an educational setting. Through the use of a combination of various forms and visual representations, learners demonstrate their comprehension of the assigned work.

The use of storyboards as a pedagogical tool has shown to be an effective approach to enhancing students' proficiency in spoken communication, written expression, and reading comprehension. According to Knauf and Jantke (2006), individuals demonstrate rapid comprehension, clarification, processing, and evaluation of the storyboard they have generated. The use of storyboarding in the learning process enhances students' ability to remember the sequence of information in the

correct order, as opposed to relying just on memorization of the whole text verbatim (Essley & Rocci, 2008).

Many studies have been conducted across several disciplines and specialized domains to explore the concept of storyboarding and its use in distinct skills and jobs. This study provides a comprehensive evaluation of existing literature and aims to address a research gap by exploring the use of the storyboard technique in language courses, both in online and offline settings. Educators are constantly required to explore novel and inventive approaches in order to actively involve students and enhance their overall educational experience. While the use of storyboarding as a creative technique is not a recent development, its origins may be traced back to the 17th century. Leonardo da Vinci is renowned for being an early adopter of storyboarding as a method to explore and analyze his unfinished artistic endeavors. Subsequently, Walt Disney revitalized the discipline, enabling cartoonists to use it as a means to complete their animated narratives via the creation of drawings. This method consistently provides benefits for project planners in visualizing the organizational teams' images. In the present-day context, educational institutions have also adopted the practice of storyboarding as a means to cultivate students' cooperative learning abilities. This approach facilitates the enhancement of organizational proficiency and the development of skills necessary for addressing real-world problem-solving mechanisms.

Prior to developing a storyboard, a trainer must ascertain their preferred presenting style and possess comprehensive knowledge of the various tools used in storyboarding. In the context of online sessions, both instructors and learners must possess a sufficient understanding of various components such as graphics, photos, videos with streaming and recordings, sketching, and discussion boards, all of which are facilitated by the Learning Management System (LMS). In order to integrate storyboarding into virtual classrooms, educators must choose a range of interactive resources such as glossaries, photographs, image-enhanced texts, graphics, PowerPoint presentations, videos, audio, and typefaces, as well as brief quizzes.

In contrast, the tools used for offline courses do not exhibit significant differences. The tools mentioned above include a range of visual aids such as photographs, visuals, dictionaries, charts, PowerPoint presentations, drawings, bulletin boards, and planning boards. These techniques are used to provide narrative visual representations, audiovisual materials, textual information, and supplementary visual elements, among other forms of content (Denison, 1995; Rehberg *et al.*, 2001) (Denison, 1995; Rehberg *et al.*, 2001). Educators have the option to create storyboards for either the whole course or certain units/modules based on the goals outlined in their curriculum. Storyboarding is a potentially successful instructional strategy for teaching

language and literature, as well as other disciplines such as filmmaking, finance, medicine, and computer science. In traditional face-to-face educational settings, a storyboard often takes the form of a sequential arrangement of cells resembling a cartoon or a succession of pictures accompanied by textual elements (Rehberg *et al.*, 2001). In the context of an online module, using a text-only storyboard supplemented with streaming visuals and audio might potentially serve as a viable method for implementing storyboarding techniques.

### Utilizing Visual Aids

When composing in a second language, individuals may encounter obstacles in their writing owing to limited linguistic proficiency and unfamiliarity with the structural conventions of the target language. The use of graphics may effectively mitigate these obstacles by essentially converting abstract notions into visual representations, which can then be further elaborated upon throughout the writing process. Rossetto and Chiera-Macchia (2011) presented findings that provide support for the notion that familiarity with visual cues or pictures might aid in the generation of written content in the second language (L2), specifically within the context of the narrative genre. The essential aspect to acknowledge in creative visual representations, such as sketches, is the effective communication of significance within a socio-cultural context. The use of drawing as a means of interpersonal communication has been seen in educational settings that include children and English language learners (Adoniou, 2013). In a similar vein, the use of sketching as a means of communication among second language learners can enhance the dissemination of ideas amongst individuals engaged in L2 discourse. Therefore, the use of painting as a cooperative pre-writing activity has the potential for scaffolding, allowing students to communicate ideas via visual representations that may otherwise be hindered by limited verbal proficiency in the second language.

Consequently, this approach facilitates the transfer of these visual notions into written text. This notion emphasizes the significance of cultural relevance in joint endeavors. When learners are able to use their previous knowledge by making use of cultural references, they may develop a sense of agency by acquiring a level of skill in a context that resembles that of a native speaker. Despite variations in pupils' social backgrounds, it is possible for visuals to convey comparable meanings across different cultures. Additionally, with the use of cooperative scaffolding, learners can effectively convey acquired information to their peers within the discursive process. With respect to the sharing of knowledge, written performances in the second language (L2) can exhibit a higher level of development compared to when learners work independently.

Learning via drawing has the potential to raise test results for students. Caldwell (1992) explores drawing as a pre-writing exercise for narrative writing and makes a compelling case that practicing through drawing can help novice writers overcome some of their challenges and take charge of the process of coming up with and structuring material before writing. Students were split into two groups for the study: the experimental group and the control group. The experimental group received lesson time for language arts teaching and narrative development via drawing, respectively. Every writing sample was graded according to its composition, organization, ideas, style, and substance. The final ratings served as a benchmark for comparison. Throughout the study period, the drawing group's overall score increased while the control group's gains were constant. In addition, the sketching group continuously outperformed the control group in terms of total results.

Drawing as a pre-writing exercise and its impact on procedural and experimental text creation were investigated by Adoniou (2013). In her research, ELLs from various cultural backgrounds completed identical writing assignments in control and treatment groups. While the group receiving the treatment was instructed to create drawings or pictures relating to the writing subject beforehand, the control group received no instructions and was allowed to read aloud. The treatment group outperformed the untreated group in almost every writing evaluation category, including suitable content, structure, and syntax. The study's findings also indicate that the treatment group wrote with more detail, indicating that sketching may be a useful memory aid and aid in conceptual growth.

Furthermore, the sample artworks had commonalities even if their cultural backgrounds differed. These results may suggest that, among a range of second-language learners, the act of sketching has the potential to activate comparable cognitive processes that align with a certain genre. This concept lends credence to the notion that cooperative storyboarding might serve as a beneficial pre-writing activity in language acquisition environments, particularly when working with students from diverse socio-cultural backgrounds.

### Coordinating efforts together

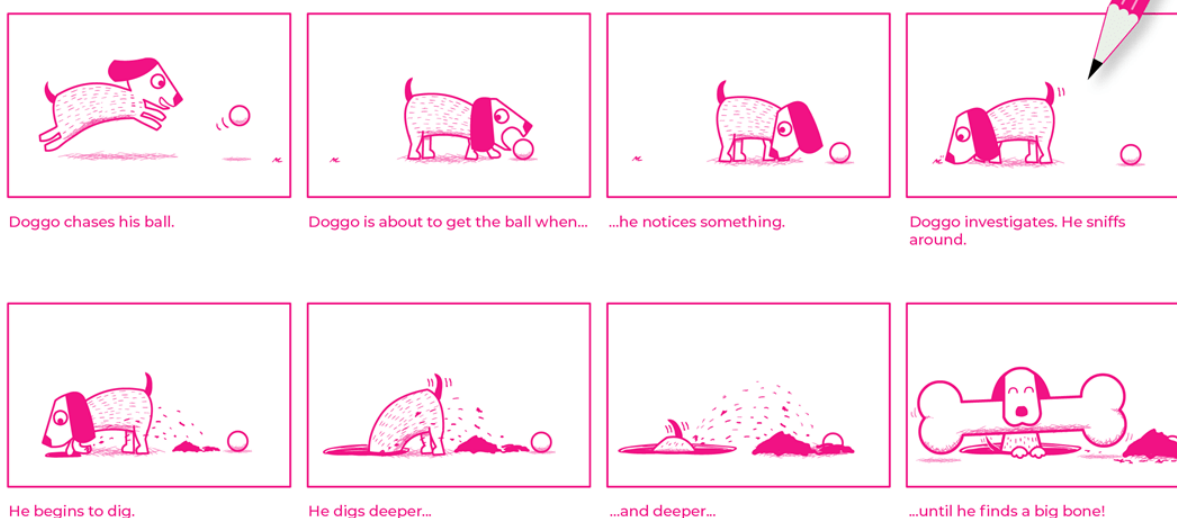
Collaboration is the act of working together with others to achieve a common goal or objective. Group conversations provide a social environment in which the subject matter of the writing work may be discussed with more freedom. The use of talking sessions, particularly peer discussions, seems to facilitate the enhancement of students' repertoire of verbs for incorporation into their written compositions. Moreover, it has been shown that engaging in pre-writing talks might facilitate the expansion of students' vocabulary, which in turn signifies cognitive growth throughout the transition from the pre-writing to writing phases (Shi, 1998). Consequently, these discussions have been

included as an integral component of the storyboarding instructional module discussed in this study.

Students who prioritize social talks over the emphasis on the work's framework during conversations in groups may not necessarily contribute to the improvement of participants' compositional talents via the benefits of collaboration. On the other hand, when the teacher offers explicit guidance, the pre-writing process becomes more structured, enabling students to actively participate in discourse pertaining to both the substance

and structure of their work. As a result, it may be seen that students show increased levels of engagement while engaging in collaborative activities that include the evaluation and provision of feedback on ideas and structure (Neumann & McDonough, 2015; Moore & Caldwell, 1993). Hence, it is recommended to provide clearer and more detailed instructions throughout the joint undertaking as a following course of action while participating in such endeavors. The organized rules specified in the provided training unit exemplify this observation.

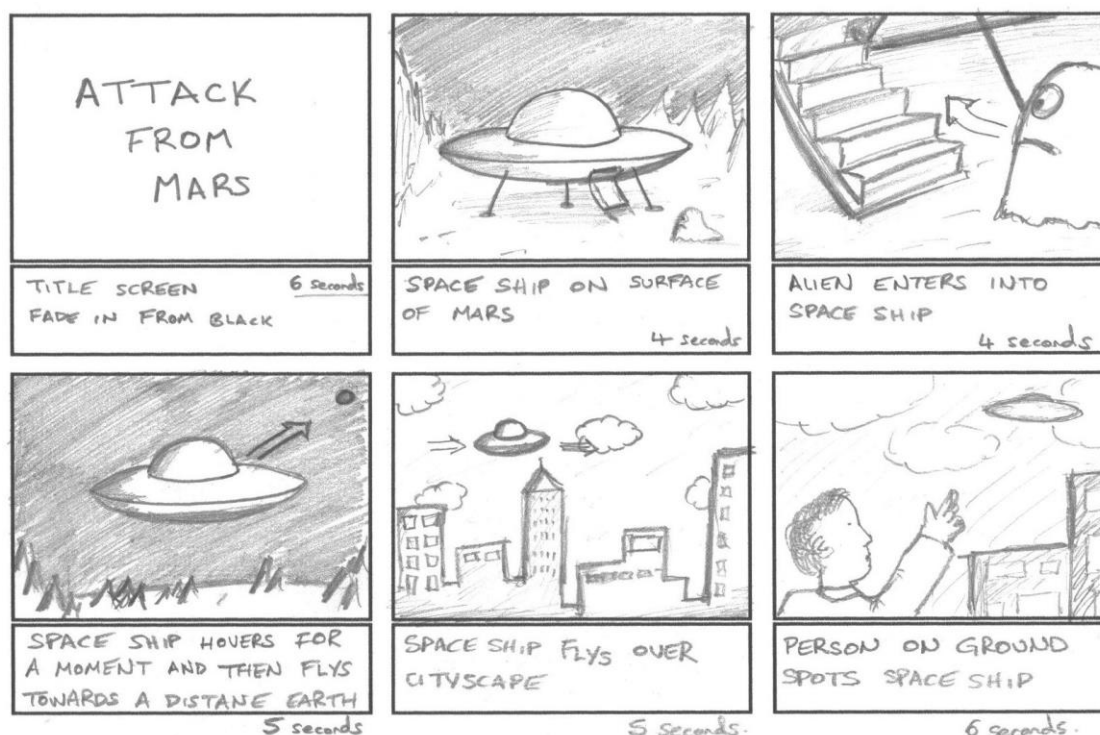
## Make a storyboard



**Figure 1: A storyboard to illustrate the learning process for beginners to improve their language skills**

According to Rahmi *et al.*, (2020), The storyboard refers to the overall layout and arrangement of an application, organized sequentially to facilitate its presentation on the display screen. Furthermore, it is essential to provide a comprehensive elucidation and detailed description for every picture, display, and textual element. The storyboard serves as a tool for

interface design, especially for the components of a program that have a direct relationship or interaction with users. In this particular instance, the use of the teaching storyboard application in early childhood education is a noteworthy and relevant approach that aligns with the contemporary era and the integration of technology in instructional practices.



**Figure 2: The student's storyboard as an example to show their skills**

In order to maximize its advantages, educators should consolidate all concepts into a visual presentation comprising specific material sections, an outline, and specific methodologies and tools aligned with learning goals that students may use to comprehend the module. Moreover, storyboarding offers advantages for learners of all modalities, including visual, aural, and kinesthetic (Gardner, 1983). In a similar vein, it has been suggested by Spada and Lightbown (2013) that students who possess a variety of personality characteristics and multiple intelligences, as proposed by Gardner (1999), might benefit from the use of storyboarding. For instance, those with extroverted tendencies and exceptional cognitive abilities may assume leadership roles within a team-based setting, while others with average or worse aptitudes may find motivation and opportunities for learning via their participation in group activities. According to Essley and Rocci (2008), those who identify as introverts also demonstrate their performance and talents more effectively. Furthermore, it is also advantageous in reducing the emotional filter (Krashen, 1982) in order to maximize the advantages of the learning process.

## CONCLUSION

In summary, it can be said that there should be no restrictions on the kinds of educational techniques used. Teachers need to investigate a variety of teaching methods and strategies that may achieve pedagogy's objectives. Because storyboarding encourages students to participate actively, artistically, and intellectually in-class activities, it may be a helpful tool for instructors to provide a range of teaching methods. In addition, it helps students build their leadership, problem-solving,

cooperation, and organizing abilities. As a result, this method equips them with the confidence to tackle real-world obstacles. Creating an electronic learning storyboard is wider than achievement principles that both parties can agree upon. It is also an application that helps people find the opportunities that are out there. Instructional approach, and ensure that they support your educational objectives. Because storyboarding enables you to examine each of these visual building blocks from a different viewpoint, it also helps you break down your ideas into their component pictorials, allowing you to assess your idea more closely and identify any minor flaws in the way you have chosen to communicate any difficult conceptual concepts. You may also adjust your communication style using this strategy based on the kind of learners you are trying to reach. Within the framework of the teaching-learning process, the storyboarding approach can prove to be a more effective communication tool. In addition to these advantages, it is a more economical and time-efficient mode of instruction, which further lends itself to reaching a larger student body. The concepts discussed above show that, although traditional classroom instruction and newly developed electronic teaching methods will work together to transform the educational landscape in the future, stability between the two modes of instruction is necessary to improve student outcomes and effectiveness.

## REFERENCES

- Abuzaid, H., & Al Kayed, M. (2020). The impact of using storyboards on improving reading skills of third-grade students with reading disabilities in Jordanian context. *International Journal of Learning, Teaching*

- and Educational Research*, 19(1), 172-187. <https://doi.org/10.26803/ijlter.19.1.10>
- Adoniou, M. (2013). Drawing to support writing development in English language learners. *Language and Education*, 27(3), 261–277.
  - Andersson, J., Obery, A., & Eriksson, Y. (2011). The use of a storyboard to capture experiences. Paper presented at 18th International Conference on Engineering Design, Eskilstuna, Sweden.
  - Balzotti, J. (2016). Storyboarding for invention: Layering modes for more layering modes for more composition classroom. *Journal of Basic Writing*, 35(1), 63–84.
  - Barrows, H. S. (2001). *The tutorial process*. Springfield, IL: Southern Illinois University School of Medicine.
  - Caldwell, H., & Moore, B. (1992). The art of writing: Drawing as preparation for narrative writing in the primary grades. *Studies in Art Education*, 32(4), 207–219.
  - Denison, G. L. (1995, April). Storyboarding: A brief description of the process. Paper presented at the Annual International Convention of the Council for Exceptional Children 73rd, Indianapolis.
  - Dirckinck-Holmfeld, L. (2010). Design of a networked learning master environment for professionals: Using the approach of problem-based learning to establish a community of practice. Paper presented at the 7th International Conference on Networked Learning.
  - Doherty, J., & Coggeshall, K. (2005). Reader's theatre and storyboarding: Strategies that include and improve. *Voices from the Middle*, 12(4), 37–43.
  - Dupen, B. (2005). Teaching problem solving by storyboard. Proceedings of the 2005 American Society for Engineering Education Annual Conference and Exposition.
  - Essley, R. L., & Rocci, A. (2008). What are storyboards? Retrieved from <https://www.scholastic.com/teachers/articles/teaching-content/what-are-storyboards/>.
  - Fried-Booth, D. L. (2002). *Project work*. Oxford: Oxford University Press.
  - Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
  - Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.
  - Hafour, M. F., & Al-Rashidy, A. S. M. (2020). Storyboarding-based collaborative narratives on Google Docs: Fostering EFL learners' writing fluency, syntactic complexity, and overall performance. *The JALT CALL Journal*, 16(3), 123–146. <https://doi.org/10.29140/jaltcall.v16n3.393>
  - Jantke, K. P., & Knauf, R. (2005). Didactic design through storyboarding: Standard concepts for standard tools. Paper presented at the 4th International Symposium on Information and Communication Technologies, Workshop on Dissemination of e-Learning Technologies and Applications, Cape Town, South Africa.
  - Knauf, R., & Jantke, K. P. (2006). Storyboarding-an AI technology to represent, process, evaluate, and refine didactic knowledge. Paper presented at the First International Core-to-Core Workshop on Knowledge Media Technologies, Herausgeber.
  - Krashen, S. D. (1982). *Principles and practice in second language acquisition*. Oxford: Pergamon Press Inc.
  - Lightbown, P., & Spada, N. (2013). *How languages are learned* (4th ed.). Oxford: Oxford University Press.
  - Moursund, D. G. (2003). *Project-based learning using information technology*. Eugene, OR: International Society for Technology in Education.
  - Neumann, H., & McDonough, K. (2015). Exploring student interaction during collaborative pre-writing discussions and its relationship to L2 writing. *Journal of Second Language Writing*, pp. 27, 84–104.
  - Patton, A. (2012). *Work that matters: The teacher's guide to project-based learning*. London: The Paul Hamlyn Foundation.
  - Rahmi, A., & Mahyuddin, N. (2020, July). Design and application of storyboard in teaching characters for children aged 6–8 years. In *International Conference of Early Childhood Education (ICECE 2019)* (pp. 97-100). Atlantis Press.
  - Ramasari, D., Erlina, E., & Anggraini, H. W. (2020). The use of storyboard: Project-based learning implementation in teaching speaking to the 10th grade students. *Advances in Social Science, Education, and Humanities Research*, 513, 387- 394. <https://doi.org/10.2991/assehr.k.201230.135>
  - Rehberg S., McQuillan, J., Stanton L., & Eneman, S. (2001). Storyboarding worksheet. Retrieved from <http://www.uncc.edu/webcourse/worksheet.html>
  - Rossetto, M., & Chiera-Macchia, A. (2011). "Visual learning is the best learning--it lets you be creative while learning": Exploring ways to begin guided writing in second language learning through the use of comics. *Babel*, 45, 35-3, p.35-40.
  - Shi, L. (1998). Effects of pre-writing discussions on adult ESL students' compositions. *Journal of Second Language Writing*, 7(3), 319–345.
  - Tanrikulu, F. (2020). Students' perceptions about the effects of collaborative digital storytelling on writing skills. *Computer Assisted Language Learning*, 35(5-6), 1090-1105. <https://doi.org/10.1080/09588221.2020.1774611>
  - Varvel, V. E., & Lindeman, M. (2005). Online courses as learning scripts: Using storyboards in online course design. Retrieved from [https://moam.info/online-courses-as-learning-scripts-using-storyboards-in-online-\\_5a1913b51723ddd65570efb4.html](https://moam.info/online-courses-as-learning-scripts-using-storyboards-in-online-_5a1913b51723ddd65570efb4.html)
  - Walker, R., Cenydd, L., Pop, S., Miles, H., Hughes, C., Teahan, W., & Roberts, J. (2015). Storyboarding for visual analytics. *Information Visualization*, 14, 27-50. <https://dx.doi.org/10.1177/1473871613487089>