The Effectiveness of the Different Patterns of the Digital Story in the Development Linguistic Intelligence Skills and Mindfulness Among Jordanian Primary Students During the Corona Pandemic

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Abstract—The purpose of this study was to investigate the effectiveness of the different patterns of the digital story in the development of linguistic intelligence skills and Mindfulness in Jordanian primary students during the Corona pandemic. The study sample consisted of 43 students and was randomly (a simple random sample) selected. The study sample was divided into two groups. The first group consisted of 23 students who studied through a written digital story, as the second group consisted of 20 students who studied through the digital audiovisual story. The dependent variables were linguistic intelligence skills and mindfulness. The researcher used two scales. The first is to measure linguistic intelligence skills, and the second is to measure mindfulness. Data were collected, and appropriate statistical analysis was performed. ANCOVA was used to determine the significant differences between the two groups. Analyses of covariance ANCOVA were performed to examine the main effects of the independent variables on the dependent variables. This study showed that students using the digital audiovisual story model performed significantly better than those using the written digital story in linguistic intelligence skills and mindfulness.

Keywords—digital story, linguistic intelligence, mindfulness, corona pandemic

1 Introduction

During the communications and information revolution that entered all fields, including education, which led to the widespread dissemination of e-learning, it has not been applied effectively and is often limited to virtual university learning [1], [2]. However, the emergence of crises such as the Virus Corona pandemic, which resulted in the closure of schools, which called on all educational institutions to find a quick alternative, facilitates students' learning and provides communication and interaction during the school closure period [3]. According to [4], the Corona pandemic, the various stone measures it has created, and the accompanying closure of schools, universities, and institutes represent a solution to impose social spacing within educational

institutions that have significantly disrupted the education sector. As the world is witnessing today's scientific and technological information revolution [5], e-learning has been implemented whether or not the possibilities are available in some countries, and with the rapid start of e-learning due to the COVID-19 crisis, teachers have been assigned to teach through e-learning [6]. [7] As a result of the Corona pandemic, teachers were forced to move from teaching in traditional classrooms to e-learning while working on its design and development and thinking effectively about using it in the educational process. There have been many opinions and attitudes towards e-learning, some of which see it as a total substitute for traditional education, and others see it as complementary to traditional education.

However, with a multiplicity of opinions and possibilities, there was no alternative to e-learning of all kinds and methods, which allowed educational institutions to continue the teaching process during the corona pandemic. The teacher is now designing, developing, implementing, and evaluating educational materials focusing on the types of interaction in the learning process (student interaction with each other, teacher, content, and technology) through simultaneous and asynchronous e-learning patterns [8]. Some educators may find it difficult to fine-tune e-learning compared to traditional learning. However, the renewed and accelerating developments in e-learning have effectively reflected on the educational reality and the service of its objectives [6]. It enabled students to learn and do all the educational tasks required through many applications and programs that support the educational system and be employed to ensure educational return [9]. [7] believes that plans and strategies for education systems must be built in a crisis that effectively provides solutions that ensure that educational opportunities are not lost or delayed in acquiring them. Through open-source knowledge through digital education and learning management programs, teachers can teach seamlessly through various e-learning patterns to build a unified learning system [10], [11]. Educators have been keen from early periods on employing and making use of communication and technology techniques to serve the process of language learning, so the interest in audiovisual media, then visual methods of presentation, and the emergence of audiovisual means was a new field of modern education fields and among these technologies is the digital story that works to develop imagination. The abilities are enhanced by transferring the learner to imaginative thinking skills for situations, scenes, and events [12]. In educational situations, attention is one of the most critical factors that help learners acquire different knowledge by directing attention to new educational stimuli and situations, which are characteristics of learners [13]. Learning requires mindfulness, which includes students 'awareness of its problems and their impact on cognitive aspects to realize its stimuli. As a learning, attention is an essential process for acquiring skills that focus students' attention on specific situations [14]. Language learning is one of the educational fields that require mindfulness, through which he expresses himself, communicates with his community, expresses his thoughts and feelings. Language is the way for a person to teach, learn and manage his life affairs, as the surrounding environment plays an essential role in the growth and development of their linguistic achievement, specifically in the stages of his life First. Language learning is based on four basic skills: These are: listening, speaking, reading, and writing, and these basic language skills are the basis for students 'academic achievement during their academic life, and they need these skills in the stages of their daily and professional life in the

future, and this requires possession of a stock of vocabulary and fluency in using it, and this is called intelligence The linguist observes fluency in expression, the development of the ability to read, speak, perceive meanings, vocabulary, and sentence structure and use them in daily life [15].

2 Digital story

The proliferation of different communication technologies in the service of the educational process has led to the emergence of modern theories, strategies, and teaching methods [16]. It focuses on performance and capacity development as it is centered on the student and his needs and the awareness of individual differences and psychological specialties among students, such as digital stories [17]. The digital story is one of the modern technologies in education designed, produced, and displayed through computer-based digital software and applications and mobile devices, attracting the students' attention, motivating them, and eagerly increasing their motivation to learn [18]. In addition to developing thinking and imagination skills and enhancing students' abilities, it focuses on higher processes in learning and thinking, such as understanding and creativity. By presenting different students' abilities, a digital story is defined as the process of integrating traditional stories, oral narratives, and modern multimedia-based digital technology in an entertaining way [19]. It provides the learner with many skills, mental and creative abilities [20]. [21] defines it as stories through specialized multimedia programs that give a new form of educational attitude more interesting, attractive, and influential in students, considering the need to accurately identify the objectives contained in the stories before preparing them [22]. In addition, information and knowledge based on events, plot, fun, and entertainment are displayed through an electronic medium [23]. In a fun, exciting, and exciting environment that increases the level of interaction in different educational situations that are in line with students' needs and individual differences, considering their emotions and improving their desired social skills and behaviors, teachers help improve and develop their teaching methods and methods in various subjects [20].

[24], [20], [25] argues that the digital story has several designed patterns according to the purpose, target group, and topic. Among these patterns is the audible pattern of the digital story: here, students learn through listening. It works to create educational experiences by recognizing words and vocabulary, sorting out the information that students have heard, and creating a mental image. The visual pattern of the digital story: This pattern includes multiple visual media such as images, still and moving drawings, colors, and multiple audio media such as sound effects, music, and spoken human sounds. The written pattern of the digital story: this pattern is linked to the written, visual media and develops the ability of learners to think and draw ideas and meanings from the written text. The digital story has a significant role in developing students' imagination in order to analyze events and characters related to a specific topic in addition to acquiring information and knowledge in an educational atmosphere that prevails in entertainment and pleasure, which helps in understanding complex materials and preserving new concepts and linking them to previous knowledge by retrieving previous information quickly. The digital story is also a good model for moving learning

that encourages participatory and collaborative learning among students, ideas, and discussion among themselves, focusing on the appropriateness of content and language for the target group.

The digital story has several components that mentioned in [26], [20], [27]. It is the point of view, which is the main idea around which the story revolves. Dramatic question: It is related to the element of suspense and attracting attention by creating a basic question in the mind of the student that prompts him to follow the events of the story and interact with it and focus his attention from the beginning to the end, to reach an answer to this question. Emotional content: It is a fusion of the story which makes the student imagine himself as one of the characters of the story and live its events and interact with them as if he is going through these circumstances, and this is because of what he sees from the realities of his daily life. Audio media: a human voice (narrator) that tells the story and reacts to the dramatic situations in the story and music and sound effects that give a real impression of the story's events. Economic and savings: to stay away from overfilling and place restrictions on media use while not disrupting content.

3   Mindfulness

Mindfulness is considered an essential requirement of the learning process because of its impact on the cognitive fields despite being affected by students' capabilities, abilities, and motivation, which directs ideas towards a specific goal. Mindfulness is defined as the student's response and interaction to specific educational situations and events with self-motivation. It is complete attention to all experiences that occur at a specific moment. [28] also defines it as the student's ability to receive, process, and acquire various knowledge and information in a focused manner through the mental presence to deal with events. [29] defined it as a set of broad measures during the educational process related to communication and attention. Mindfulness is a state of mental and mental awareness resulting from the individual's concentration in an instant situation and the follow-up to what happens in its moment by moment, without considering the past and thinking about the future [30]. Mindfulness students can receive and process knowledge and information and reach facts and conclusions [31]. This is confirmed by [32], where a mindfulness student can distinguish information from the beginning of its presentation and then address it through a conscious interpretation of it because mindfulness classifies the cognitive input and then processes it. Mindfulness also makes the student responsible for his actions and actions in the agreement of learning and life and his ability to consciously control it by relying on his internal experiences and flexibility in thinking that reflects his creativity and academic achievement. Mindfulness increases students 'focus attention, gains self-confidence, enhances their stress response and increases the individual's sense of happiness [33]. In addition to mastering the student's work that he conducts, which enhances the sense of achievement and happiness, it also increases communication and interaction with achieving one of the requirements for success in social life [34]. [35] suggests that developing mindfulness skills passes through four significant steps. The first step is knowledge: the sum of the facts and skills that have been recognized, learned, or discovered after a particular experience. The second step is awareness, and at this stage, the student learns to

expand his awareness about something specific to a specific moment. The Third Step: Comprehensive attention: This is where developing the ability to observe and focus attention. The fourth step: The student notices the internal and external excitements of thoughts and emotions; all required here is only to tell the events as they appear. Considering this modern technical and digital development, which relies heavily on multimedia of all kinds that may affect the attention of students and their degree of mindfulness through the multiplicity of stimuli, therefore it must work on their development and development, which is reflected in the quality of education [32].

4   Linguistic intelligence

Students' linguistic potential is the ability to read which they can deal with all the changes surrounding them with acumen and caution. Therefore, all societies and at various times have taken care of language abilities as they are of cognitive and social value. It also works to enable the student to express his opinions, feelings, and ideas through written or spoken material, known as linguistic intelligence.

Linguistic intelligence is linked to the skills of speaking and writing, which appears through the ability of individuals to use, remember, understand, think, speak, read, and write the words, words, terms, and concepts in sequence, to remember them, understand them, think about them, speak to them, read and write them to express specific ideas [36]. [28] shows that linguistic intelligence can learn words, expressions, and expressions in a specific order and rhyme and is distinguished by fluency in speaking, communication, persuasion, and presenting consistent information and ideas. [37] defines linguistic intelligence as the ability to convince others of certain behaviors through linguistic expressions. Linguistic intelligence focuses on the scientific use of language, the treatment of linguistic construction, and the linking of previous knowledge with new attitudes and knowledge through the formation and construction of words [38]. [39] showed indicators that show students' linguistic intelligence, which is the passion for reading advertisements, paintings, murals, and publications, and the high ability to memorize vocabulary quickly and love to use it in daily life. Linguistically intelligent students' linguistic ability helps them achieve logical thinking, critical thinking and solve problems through their high ability to communicate effectively and convince by relying on their linguistic inventory to choose the most effective way to reach what they are looking for [40]. It also gives them a linguistic ability that helps them express their fluency clearly and accurately, as a student who expresses his or her feelings easily reflect positively on his relationships with others [41]. Linguistic intelligence appears when individuals speak to each other or in written expression through language metaphors [42]. The primary level for students is a suitable period for detecting the preparations and mental capacities they have to guide and develop them by providing the right conditions and appropriate activities. The students' listening period and ability to listen and express themselves increase through the linguistic stock of vocabulary that is proliferating, as there is an excellent development in language listening, speaking, reading, and writing [43]. [44] has referred to several indicators of verbal-linguistic intelligence for students, such as having excellent initial knowledge of word-of-mouth, enjoying wordplay, enjoying letter exits, explaining the meaning of

written words, referring to something that has been spoken or read, and the ability to write poetry. [43] believes that the scientific and technical progress and the spread of social networks have led to an increase in the volume and quantity of written, audio, and read information and knowledge that the individual receives. Therefore, it is necessary to improve the capabilities of individuals in understanding, deduction, linking, and making judgments.

5   The problem of the study

Speaking and writing skills are of immense importance in the field of educational sciences, which may play an essential role in developing certain behaviors in the student's personality, the ability to communicate, and increasing their ability and linguistic competence, and this requires the existence of teaching methods that work on teaching the language through lively and realistic situations. The current research problem has crystallized in uncovering the linguistic intelligence skills of third-grade students and developing them through the use of one of the technological innovations, which is digital stories. Studies have shown that students need to develop their linguistic intelligence, as the usual teaching methods may not provide sufficient skills for students to develop their linguistic intelligence skills.

Considering the recommendations of studies that talk about the digital story, especially its effectiveness in developing Arabic language skills, which call for the use of digital stories in the development of Arabic language skills, the researcher in this study will try to employ the digital story in the development of language intelligence skills. To treat students' weaknesses in this skill, digital stories are a modern method for integrating exciting elements for students, attraction to attention, details, and ideas, which may affect the degree of mental alertness of students and work on their development. A student who is not mindful cannot remember, focus and mind, making him refuse to change his thoughts. Therefore, this study came as an attempt to develop the mental alertness of students using digital stories. Considering the preceding, the problem can be presented and addressed by answering the following questions:

- What is the effectiveness of digital stories in developing the linguistic intelligence skills of third-grade students in the Arabic language?
- What is the effectiveness of digital stories in developing mindfulness among third-grade students in the Arabic language?

6   The importance of the study

The importance of the study appears through the enrichment of theoretical educational literature concerning the digital story of third-grade students in the schools of the Kingdom of Saudi Arabia, as well as the importance of studying through the rooting and localization of theoretical literature related to linguistic intelligence and mindfulness. The current study may contribute to enhancing the benefit of those interested in teaching methods for primary grades, supervisors, and curriculum developers by

employing the digital story or including it in the computerized curriculum, and this study can benefit teachers and teachers of introductory classes in including learning in the digital story and its impact on the acquisition of skills in linguistic intelligence and mental alertness.

7   Methods and procedures

7.1   Study population and its sample

The study population consisted of all fifth-grade students registered in the Arabic language course in Jourdan in the second semester of the academic year (2020/2021). The sample of the study consisted of (43) male students. It was distributed into two groups randomly. The first group consisting of 23 students, studied through written digital story mode, and the second group, which consisted of 20 students, studied through audiovisual digital story mode. A pre-test measures before the beginning of the study to examine the equality between groups, see Table (1).

Table 1. Equal study groups in linguistic intelligence and mindfulness

		Sum of Squares	df	Mean Square	F	Sig.
Pre linguistic Intelligence	Between Groups	42.605	1	42.605	1.717	.197
	Within Groups	1017.070	41	24.807		
	Total	1059.674	42			
Pre mindfulness	Between Groups	7.034	1	7.034	.312	.580
	Within Groups	925.385	41	22.570		
	Total	932.419	42			

The ANOVA procedure was used results have been shown that there is no significant difference in the pre-test scores between groups. This means that groups of students have the same level of knowledge in linguistic intelligence and mindfulness.

7.2   Research design

To answer the study questions, the researchers used a quasi-experiment design to identify how the effectiveness of the different patterns of the digital story in developing linguistic intelligence skills and Mindfulness in Medina primary students during the spread of the Corona pandemic.

7.3   The instruments of study

In this study, the researcher used two instruments: linguistic intelligence scale and mindfulness scale,

Instrument's procedures. Through the researcher's review of the study's questions and objectives and according to the scientific method used in designing the study, the researcher followed the following steps:

— Review the theoretical literature and previous studies related to the topic:

Through electronic learning, mindfulness and linguistic intelligence are among the recent topics that have emerged due to the spread of modern means of communication, and the researcher has focused on reaching measures consisting of paragraphs that cover all possible opinions. Therefore, a number of previous studies, such as a study, [45], [34], [28], [39], [41], [32].

— Defining and drafting the measures paragraphs:

This step may require defining the concept of linguistic intelligence skills and mindfulness clearly and measurably. The researcher relied on previous studies, and by making use of some measures, the researcher wrote the paragraphs of the measures and took care in writing the scale paragraphs and drafting them in the respondent's language in order to describe the amount of response expressed by the paragraph/as Taking into account: that the paragraphs are written in the language of the present. Avoid writing paragraphs in the form of facts. In addition to avoiding paragraphs that give more than one meaning. Moreover, avoid paragraphs that are not appropriate for the psychological dimension to be measured and paragraphs that lack discrimination, such as those agreed to by everyone and everyone opposed to them—taking into account the language of the paragraphs to be easy, clear, and straightforward direct—taking into account the shortness of the paragraphs. Avoid inserting two ideas in the same paragraph. Avoid using words like all, absolutely, only, and just. Avoid using negative negation in a single paragraph.

Linguistic intelligence scale. Based on the literature review conducted on linguistic intelligence, the researcher developed the scale to identify students' views regarding linguistic intelligence. The scale consisted of 19 items. The students receive a score of 2 for Always, 1 for sometimes, and 0 for Never for positive items, a score of 0 for Always, one sometimes, and 2 for Never for negative items.

Mindfulness scale. After surveying related literature, the researcher developed a scale to assess mindfulness. The scale consisted of 17 items. The students receive a score of 2 for Always, 1 for sometimes, and 0 for Never for positive items, a score of 0 for Always, one sometimes, and 2 for Never for negative items.

Instruments validity. The Instruments were reviewed and confirmed by experts in Arabic language, psychology, talent and creativity, educational technology, curriculum development, measurement, and evaluation. The feedback and comments received from the panel of experts were employed to establish the necessary clarifications, changes, and modifications before and after piloting the study.

Correlation coefficient. To extract the indications of the validity of the Instruments, the paragraphs correlation coefficients were extracted for the scale, where the study was applied to an exploratory sample consisting of (17) students who were outside the study sample. The correlation coefficient here represents the significance of each paragraph's validity and the total score, as shown in Table (2).

Table 2. Correlation coefficients between the instruments items and the overall scale

Linguistic Intelligence Scale					Mindfulness Scale			
1	.851**	**9**	.848**		**1**	.802**	**7**	.769**
2	.754**	**10**	.851**		**2**	.804**	**8**	.796**
3	.676**	**11**	.770**		**3**	.708**	**9**	.853**
4	.826**	**12**	.676**		**4**	.750**	**10**	.840**
5	.744**	**13**	.773**		**5**	.742**	**11**	.842**
6	.787**	**14**	.744**		**6**	.787**	**12**	.752**
7	.860**	**15**	.787**					
8	.717**	**16**	.702**					

Table (2) shows the statistical significance and the value of the correlation coefficient for all items in the instruments with the total score of the overall instruments.

Instrument's reliability. A reliability coefficient helps in evaluating the consistency of the score created. The pilot studies consisted of 17 students from the study population but were not included in the actual study. The researchers used Test-Retest to check the reliability of the instruments. The reliability coefficient of the instruments was computed by the implementation of Cronbach Alpha, as shown in Table (3).

Table 3. Instrument's reliability

Instruments	Reliability	Consistency Coefficient
Linguistic Intelligence Scale	0.81	0.84
Mindfulness Scale	0.79	0.76

8 The variables of the study

- **Independent variable:**
  - Written Digital Story Mode
  - Audiovisual Digital Story Mode
- **Dependent variable:**
  - Linguistic Intelligence
  - Mindfulness

9 Results and findings

The first question: What is the effectiveness of digital stories in developing the linguistic intelligence skills of fifth-grade students in the Arabic language? To answer this question, the means and standard deviations were extracted as shown in Table (4).

Table 4. Post-test Scores in linguistic intelligence skills of students

Variables	Mean	Std. Deviation	
Written Digital Story Mode	35.8261	4.63830	23
Audiovisual Digital Story Mode	41.0500	4.46595	20
Total	38.2558	5.21944	43

From Table (4), there is an apparent variation in the means and standard deviations of students 'responses to the linguistic intelligence scale. To identify the significance of the statistical differences between the arithmetic means, (ANCOVA) was used, as summarized in Table (5).

Table 5. ANCOVA of the post-test scores in linguistic intelligence skills of students in various treatment groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	397.657[a]	2	198.828	10.653	.000
Intercept	5909.218	1	5909.218	316.624	.000
pre	105.725	1	105.725	5.665	.022
Groups	215.422	1	215.422	11.543	.002
Error	746.529	40	18.663		
Total	64075.000	43			
Corrected Total	1144.186	42			

Notes: [a]R Squared = .348 (Adjusted R Squared = .315).

In order to know the effect on the effectiveness of Digital Story on the development of linguistic intelligence skills, the researcher calculated the ETA Square η^2.
The ETA square value is interpreted according to the following distribution:

The value of the ETA square (η^2) is interpreted according to the following division:
From ($0.01 \leq \eta^2 < 0.06$) the effect size is minimal.
From ($0.06 \leq \eta^2 < 0.14$) the effect size is moderate.
From ($0.14 \leq \eta^2$), the size of the effect is large.

The (η^2) results (.520), Digital Story, impact developing linguistic intelligence skills among students.
The percentage of earnings for Black was also calculated to ensure the effectiveness of the digital classes on developing students' linguistic intelligence skills. Where it reached (1.24). Black considered that the threshold for considering the application effective is (1.2). This indicates that teaching through the digital story is effective in developing students' linguistic intelligence skills.
The second question: What is the effectiveness of digital stories in developing mindfulness among fifth-grade students in the Arabic language? To answer this question, the means and standard deviations were extracted as shown in Table (6).

Table 6. Post-test scores in mindfulness of students

Variables	Mean	Std. Deviation	Std. Deviation
Written Digital Story Mode	28.6957	3.86634	23
Audiovisual Digital Story Mode	31.8500	3.45307	20
Total	30.1628	3.96971	43

From Table (6), there is an apparent variation in the means and standard deviations of students 'responses to the linguistic intelligence scale. To identify the significance of the statistical differences between the arithmetic means, (ANCOVA) was used, as summarized in Table (7).

Table 7. ANCOVA of the post-test scores in mindfulness skills of students in various treatment groups

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	127.871[a]	2	63.936	4.789	.014
Intercept	6132.852	1	6132.852	459.399	.000
pre	21.430	1	21.430	1.605	.212
Group	97.535	1	97.535	7.306	.010
Error	533.989	40	13.350		
Total	39783.000	43			
Corrected Total	661.860	42			

Notes: [a]R Squared = .193 (Adjusted R Squared = .153).

In order to know the effect on the effectiveness of Digital Story on the development of mindfulness, the researcher calculated the ETA Square η^2.

The ETA square value is interpreted according to the following distribution:

The value of the ETA square (η^2) is interpreted according to the following division:
From ($0.01 \leq \eta^2 < 0.06$) the effect size is minimal.
From ($0.06 \leq \eta^2 < 0.14$) the effect size is moderate.
From ($0.14 \leq \eta^2$), the size of the effect is large.

The (η^2) results, (.161), Digital Story, impact developing mindfulness among students.

The percentage of earnings for Black was also calculated to ensure the effectiveness of the digital classes on developing students' mindfulness. Where it reached (1.33). Black considered that the threshold for considering the application effective is (1.2). This indicates that teaching through the digital story is effective in developing students' mindfulness.

10   Discussion

Discussing the first question, what is the effectiveness of digital stories in developing the linguistic intelligence skills of third-grade students in the Arabic language?

The results showed that there were differences in the mean scores of students in the scale of linguistic intelligence and in favor of the students who studied through digital audiovisual stories, and it was more effective than written digital stories in developing linguistic intelligence skills, as it showed an essential role in the educational process.

The researcher attributes this result to the great interaction between digital audiovisual stories and the presented content that simulates students' lives through visual and audio media. These media played an essential role in reflecting the realistic character of the story, which helped students understand the content, and the integration between audio media and the visual in the story helped this result, as the different sound effects (voices of the characters or the voice of the narrator or the effects) that were used in the digital story were the main engine of the story.

Also, this result is attributed to the students' information processing system, which works to reduce the load on optical channels. Each channel has a specific capacity to bear a specific number of stimuli, so digital audiovisual stories distribute visual and audio stimuli on the information receiving channels (The auditory and visual channel), which reduced the load on working memory.

There have been changes in the cognitive structure through an interest in acquiring knowledge, which plays the voice and dialogue within the story to develop the thinking skills of what students hear. Furthermore, thus, imitating and using the words they acquired in their interactions between them in addition to visual stimuli. It had tangible elements that helped to develop the cognitive structure. It also affected learning, which became more permanent by integrating the symbols and concepts in the digital story and linking them to some of them so that the learner has meaning for what is presented to him.

This is in addition to the great fun and great demand for the digital story. Hearing a visual and listening to the vocabulary and terms in the content through the characters and the narrator's voice, which increased their linguistic ability and linguistic outcome, which was reflected in the linguistic intelligence skills, also developed fluency in speaking skills and correct vocabulary pronunciation. This was also reflected in an increase in the ability to write, have new vocabulary, and a higher ability to communicate and interact through linguistic combinations and grammatical rules in a natural way that helped students understand the meanings involved.

Also, the sounds that were used in the digital audiovisual story worked to transform the displayed content into multi-source content closer to the students because it includes verbal and non-verbal signals and a change in the vocal expression according to the situation and the character that expresses the response of the character and the narrator and this affected the work of memory and the processing of information. As the stories simulated the natural world and increased their sense of belonging to the learning environment through semi-realistic experiences, which was considered an essential linguistic resource for them, It also allowed students to discover, interact and

communicate with others, develop their imagination and ability to organize, plan and move them to new worlds. This is in line with linguistic intelligence, as it is considered one of the primary mental abilities that are represented in knowing the meanings of the vocabulary and arranging the sentences by understanding the stories and commenting on them fluently by engaging in the sequence of the story and searching for an answer to the dramatic question that the story contains by anticipating the event that he will see. This helped develop their cognitive prediction and link the information contained in the story with the external environment. This study agrees with the results of the following studies [18], [39], [45], [21], [20], [41], [28], [26], [12], [46].

Discuss the second question: what is the effectiveness of digital stories in developing mindfulness among third-grade students in the Arabic language?

The results showed that there were differences in the mean scores of the students in the measure of mindfulness and for the benefit of the students who studied through digital stories, audiovisual, and they were more effective than authored digital stories in developing mindfulness skills, as they showed an essential role in the educational process.

The researcher attributes this result to the fact that students in this age group prefer to use multimedia in their learning because of its positive effect in attracting their attention, increasing their motivation, and developing their ability to remember. This is what the digital story provided by visual hearing by focusing students' attention on specific topics and minute parts within the content Displayed through the digital story, through an excellent technical and educational construction of the digital story, which affected their emotional atmosphere and directed them towards the source of excitement in the events of the story, which was reflected in their mental alertness.

Also, the multimedia, audiovisual in the digital story helped students improve the ability of the mind's work represented in working memory capabilities and activate it through the ability to process information, which coded the visual and auditory stimuli that work to attract attention and increase the concentration in the different educational situations presented by the digital story. This helped to understand complicated terminology and quickly acquire it through the integration of visual and audio media, such as seeing the actual and accurate movement of the characters in sync with the sound effects within the digital story and not feeling bored.

This is due to the integration and compatibility of the visual and audio media with each other, which helps to acquire the knowledge contained in these media, as the visual media worked to develop visual perception, beginning through the perception of the most specific features of the elements within the digital story through the eye's collection of different information and then selective attention in processing the different information contained in the digital story. In contrast, the audio media helped provide real learning experiences that attracted students' attention and developed the cognitive abilities reflected in their mental alertness.

Presenting information that stimulates students 'activities through electronic learning environments, especially the digital story, which is rich in visual and audio media activities, helped develop students' mindfulness skills. This study is in agreement with the results of the following studies [17], [22], [23], [34], [32].

11   Conclusion-future work

Attention to linguistic intelligence and mindfulness and their effects on language learning among primary school students. in addition to paying attention to the teaching method through digital stories, especially in developing linguistic intelligence and mindfulness skills and encouraging the teaching of various Arabic language lessons through digital stories. Work on training students to produce and use digital stories in primary school teaching and activating the role of digital stories in the different courses aligns with the human senses and the information processing system. In addition to conducting studies dealing with programs based on digital stories and their impact on different subjects and stages of study and multiple dependent variables Especially the motivation to learn

12   References

[1] M. Kalogiannakis, S. Papadakis and A. Zourmpakis. (2021). Gamification in Science Education. A Systematic Review of the Literature. *Education Sciences, 11(1)*, 22. https://doi.org/10.3390/educsci11010022

[2] S. Papadakis. (2020d). Apps to Promote Computational Thinking Concepts and Coding Skills in Children of Preschool and Pre-Primary School Age. *In Mobile Learning Applications in Early Childhood Education,* 101–121. IGI Global. https://doi.org/10.4018/978-1-7998-1486-3.ch006

[3] S. Aleanzi. (2021). Distance learning as a strategic option in Finland in confronting Covid 19 crisis and its possibility to benefit from it in the state of Kuwait: a comparative study. *Journal of Educational Studies and Research, 1(1)*, 252–276.

[4] P. Salovey. (2020a). COVID-19 – Moving courses online and other significant updates. [Community Update]. Yale University. https://covid19.yale.edu/university-announcements-about-covid-19/covid-19-moving-courses-online-andother-significant-updates.

[5] T. Nguyen. (2021). Boosting Motivation to Help Students to Overcome Online Learning Barriers in Covid-19 Pandemic: A Case study. *International Journal of Interactive Mobile Technologies, 15(10),* 4–20. https://doi.org/10.3991/ijim.v15i10.20319

[6] M. P. Murphy. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy,* 1–14. https://doi.org/10.1080/13523260.2020.1761749

[7] B. Raheem and A. Khan. (2020). The role of e-learning in covid-19 crisis. *International Journal of Creative Research Thoughts, 8(3),* 1–4.

[8] S. Papadakis. (2021a). The Impact of Coding Apps to Support Young Children in Computational Thinking and Computational Fluency. A Literature Review. Front. Educ. doi: 10.3389/feduc.2021.657895. https://doi.org/10.3389/feduc.2021.657895

[9] L. Bacow. (2020). COVID-19 – Moving classes online, other updates. [Community Message]. Harvard University. https://www.harvard.edu/covid-19-moving-classes-online-other-updates.

[10] S. Papadakis. (2021b). Tools for evaluating educational apps for young children: a systematic review of the literature. *Interactive Technology and Smart Education, 18(1),* 18–49. https://doi.org/10.1108/ITSE-08-2020-0127

[11] S. Papadakis. (2020). Robots and Robotics Kits for Early Childhood and First School Age. *International Journal of Interactive Mobile Technologies (iJIM), 14(18),* 34–56. https://doi.org/10.3991/ijim.v14i18.16631

[12] H. E. Çocuk and T. Yanpar Yelken. (2018). The Effect of the Web-Based Digital Story Applications on the Digital Literacy Levels of Turkish Teacher Candidates. *Asian Journal of Education and Training, 4(2),* 132–136. https://doi.org/10.20448/journal.522.2018.42.132.136

[13] H. Suliman and S. Riad. (2020). The effectiveness of a behavioral training program used brain gym to reduce attention deficit disorder accompanied by hyperactivity in primary school student with academic learning difficulties. *Journal of the College of Education, Al-Azhar University, 185(2),* 672–623. https://doi.org/10.21608/jsrep.2020.84728

[14] Yassin., F. Mohsen and A. Mohsen. (2020). Mindfulness and its relation to the dynamic creativity of volleyball and soccer players for the teams of Diyala University. *Sports Science Journal, 40(12),* 167–179.

[15] N. Barzawi. (2020). Effect of Gillingham's strategy adapted to the characteristics of the Arabic language on improving reading performance in dyslexic children: pupils of the primary cycle. *The Arab Journal of Educational and Psychological Sciences, 19(5),* 449–474.

[16] O. Aldalalah and S. F. Fong. (2010). Effect of Computer-Based Instructional Design among Internals-Externals: A Cognitive Load Perspective. *European Journal of Social Sciences. 14(1),* 164–182.

[17] B. Dogan. (2020, Apr 07). A decade of digital story telling contents (disco) research results: students perspectives; motivational factors and preferred content areas for digital storytelling; and impact on K-12 students 21st century skills and self-efficacy. Society for information technology & teacher education international conference. Ferit, K. &Yapici, U.(2016). Use of Digital Storytelling in Biology Teaching, *Universal Journal of Educational Research, (4),* 895–903. https://doi.org/10.13189/ujer.2016.040427

[18] E. Aktas and S. U. Yurt. (2017). Effects of digital story on academic achievement, learning motivation and retention among university students. *International Journal of Higher Education, 6(1),* 180–196. https://doi.org/10.5430/ijhe.v6n1p180

[19] H. Abdul Basit. (2014). Practical situations for using digital storytelling in teaching courses. *E-learning journal at Mansoura University.* 13, http://emag.mans.edu.eg/index.php?page=news&task=show&id=431.

[20] O. Allan. (2019). *The effectiveness of using digital story in developing the reading skills in the Arabic language for 2nd grade students and their motivations towards it. Unpublished master's thesis*, Middle East University

[21] S. Al-Harbi. (2016). the effectiveness of digital stories in developing the critical listening skills in the english course for the students of the secondary stage in Riyadh. *The Specialized Educational International Journal, 8(6),* 276–308. https://doi.org/10.12816/0035730

[22] Y. Kurniawan., R. Muliyani and S. Nassim. (2019). Digital story conceptual change oriented (DSCC) to reduce students' misconceptions in physics. *Al-Biruni Journal of Physics Education/Jurnal Ilmiah pendidikan Fisika Al-Biruni, 8(2),* 211–220. https://doi.org/10.24042/jipfalbiruni.v0i0.4596

[23] T. Moeke-Maxwell., K. Mason., L. Williams and M. Gott. (2020). Digital story-telling research methods: Supporting the reclamation and retention of indigenous end-of-life care customs in Aotearoa, New Zealand. *Progress in Palliative Care, 28(2),* 101–106. https://doi.org/10.1080/09699260.2019.1704370

[24] A. Bea and A. Leonard. (2017). Digital storytelling as student-centred pedagogy: empowering high school students to frame their futures. *Research and Practice in Technology Enhanced Learning 12(1),* 21. https://doi.org/10.1186/s41039-017-0061-9

[25] S. Ribeiro. (2015). Digital storytelling: An integrated approach to language learning for the 21st century student. *Teaching English with Technology, 15(2),* 39–53.

[26] G. Altowairqi, (2020). The Effectiveness of Digital Storytelling in Developing Some English Language Communication Skills for Second Graders at Middle Schools in Jeddah. *Journal*

of Educational and Psychological Sciences, 12(4), 23–51. DOI: https://doi.org/10.26389/AJSRP.G111119

[27] H. Mahdi. (2018). *E-learning towards a digital world, Amman*: Dar Al-Masirah for publishing and distribution.

[28] F. Al-rabee. (2019). Emotional intelligence and its relation to mindfulness among Yarmouk University students. *Jordanian Journal of Educational Sciences, 15(1),* 79–97.

[29] C. Hassed. (2016). Mindful learning: Why attention matters in education. *International journal of school & educational psychology, 4(1)*, 52–60. https://doi.org/10.1080/21683603.2016.1130564

[30] F. Elsiddig and G. Mahrous. (2020). Mindfulness and its Relationship to Time Management (Field Study on Female Kindergarten Teachers in Ha'il City- Kingdom of Saudi Arabia *Arab Journal of Sciences & Research Publishing,, 4(22),* 46–21. https://doi.org/10.26389/AJSRP.M050220

[31] M. Shaheen and A. Rayyan. (2020). The level of mindfulness Among the Students of the Faculty of Educational Sciences at al-Quds Open University and Its Relationship to Problem Solving Skills. *Palestinian Journal of Open Learning and e-Learning, 8(14),* 1–13.

[32] Al-Hashem. (2017). *The Availability Degree of Mindfulness of Public Secondary School Principals in Amman Governorate and its Relation to the Degree of Practicing the Organizational Citizenship Behavior of Teachers from their Point of View*. Unpublished master's thesis, Middle East University.

[33] X. Bao, S. Xue and F. Kong. (2015). Dispositional mindfulness & perceived stress: The role of emotional intelligence. *Personality &Individual Differences, 78,* 48–52. https://doi.org/10.1016/j.paid.2015.01.007

[34] F. Al-Siddiq and G. Mahrous. (2020). Mindfulness and its Relationship to Time Management (Field Study on Female Kindergarten Teachers in Ha'il City- Kingdom of Saudi Arabia). *Journal of Educational and Psychological Sciences, 22(4),* 21–46. https://doi.org/10.26389/AJSRP.M050220

[35] O. Marianetti and J. Passmore. (2013). Mindfulness at Work: Paying Attention to Enhancement, (edited by P. Alex Linley, Susan Harrington, & Nicola Garcea), The Oxford Handbook of Positive Psychology and Work. New York: Oxford University Press. 189–200.

[36] N. Shakouri., R. Behdan and M. Teimourtash. (2017). On the relationship between individuals' linguistic intelligence and recalling lexical items in SLA. *International Journal of Research Studies in Education 6(4),* 29–36. https://doi.org/10.5861/ijrse.2016.1644

[37] H. Gardner. (2004), Changing Minds: The art and science of changing our own and other people's minds, Harvard Business School Press, ISBN 978-1422103296

[38] F. Nasrallah. (2019).*The effect of the listening triangle strategy on the development of linguistic intelligence among students of the fourth grade basic in the Arabic language subject*. Unpublished master's thesis, Islamic University.

[39] F. Al- Jubouri. (2018). Effectiveness of using linguistic jokes on developing linguistic intelligence of second intermediate pupils' graders in Arabic language. *College of Basic Education Research Journal, 14(3),* 1–44.

[40] Alnjar. (2016). *Linguistic intelligence among ordinary and stuttering children, a comparative study of Damascus Governorate*. Unpublished master's thesis, Damascus university.

[41] Al-momani. (2018). The use of social networking sites and their relationship to the social and linguistic intelligences for the Yarmouk university students. *Journal of the Association of Arab Universities for Research in Higher Education, 38(4),* 149–163. DOI: 10.36024/1248-038-004-008

[42] T. Jawda and S. Abdul Amir. (2019). Linguistic intelligence and its relationship to spelling errors among university students. *Journal of Education College Wasit University 1(35),* 499–534. https://doi.org/10.31185/eduj.Vol1.Iss35.844

[43] B. Huseen. (2020). The impact of employing the information gap strategy in the acquisition of rhetorical concepts and developing linguistic intelligence among fifth grade literary students. *Alfth journal, 82,* 453–488.

[44] H. Cahyo and F. Ayu. (2020). Verbal Linguistic Intelligence of the First-Year Students of Indonesian Education Program: A Case in Reading Subject.

[45] Al-amari and R. Al-Saiari. (2020). The effect of using digital stories on female students with learning difficulties in improving reading skills reading aloud /Discrimination/analysis. *Taibah University Journal of Arts and Humanities, 21(1),* 515–567.

[46] S. Papadakis and M. Kalogiannakis. (2019). Evaluating the effectiveness of a game-based learning approach in modifying students' behavioural outcomes and competence, in an introductory programming course. A case study in Greece. *International Journal of Teaching and Case Studies*, *10(3),* 235–250. https://doi.org/10.1504/IJTCS.2019.10024369; https://doi.org/10.1504/IJTCS.2019.102760

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