The impact of using digital kinetic storytelling on self-esteem and innovative thinking capacity among sixth grade primary school girls

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Abstract:

The aim of the research was to develop self-confidence and creative thinking among sixth grade primary school pupils by exploring the effect of digital kinetic stories. The study, conducted using an experimental approach, involved 40 pupils aged 11–12 from the Sixteenth Elementary School in Al-Hofuf. The pupils were divided into two equal groups: one engaged with teacher-narrated kinetic stories, while the other used computer-based digital kinetic stories. Results showed that the digital kinetic storytelling method led to greater improvements in self-esteem and innovative thinking compared to teacher narration, with improvement percentages of 47.68% and 18.57%, respectively. The study highlights the effectiveness of digital kinetic storytelling as a tool to enhance key developmental skills. The researcher recommends adopting digital kinetic storytelling in educational practices, providing teachers with training and ready-made templates, and extending its application to other age groups. Future research should explore alternative methods for developing self-esteem and innovative thinking and assess the long-term effects of digital storytelling on learners' growth.

Keywords: Digital kinetic story, self-esteem, innovative thinking, kinetic innovation, IQ.

1. Introduction

Childhood is that stage of human life that has immense value for the future development of a person. At this stage, the child acquires skills, his potential is revealed, and the child becomes moldable, or, in other words, one can say that the child can be taught. Thus, the care for childhood and attention to its activities is one of the greatest factors in human cultures to help them progress. Basic education is the first systematic stage for teaching and educating the child. It is the first cycle of basic education. It has a strategic place in the laid-out educational system since it defines the education level of the large population base. Hence, a need to support the child at this age, as pointed out

by other authors in the study. The significance of this stage makes it a starting stage in the development of the child's mind as well as offering him his first tools for learning and skill development. This is why it is possible to dedicate some attention to the child at this stage and attempt to take advantage of all that is new and practical in the spheres of child education and talent management.

Self-concept is central to the personality and psychological well-being, behavior, and learning processes of a child. It involves what the child thinks about himself or herself and the things that others think about that child and provides a foundation for personality. Self-concept is important in influencing positive psychological outcomes in children, which is why it is important to understand it. Self-concept boosts the capacity of children to be able to cope with and find acceptance in their environments or contexts, therefore leading to higher and clearer goals and achievement expectations (Dzaid & Nurhidayah, 2024). Further, self-concept helps in moderating moral development and various forms of risk-taking, which are important to ethical decision-making and social relationships (Waqar, Bibi 2019). According to Dzaid and Nurhidayah (2024), self-conception enhances learning effectiveness since children who have a clear view of who they are will be more receptive.

To enhance the educational process and efficiency, it has been deemed appropriate to invite technological devices and contemporary methodologies to perform conceivable educational assignments (Yu J-E. 2022). Education and the enhancement of the education process in the field of physical and health education is not only a process of adding new educational details and forms, Educational technology new curricula, and adding new devices, machines, and tools in educational systems, but through the effective use of educational technology to serve the educational process, which is provided through the new technology technologies to achieve the maximum level of performance and to achieve the educational objectives (Al-Hail M Furthermore, incorporating modern technology into learning makes us eliminate the traditional education method, which is only applicable if the applications are done systematically and integrated as a part of the

basic education system (Kerimbayev, N. et al., 2023; Granić, A., 2022).

Design-based learning involves practice and work in groups and therefore encourages creativity among the learners. With a view to facilitating students' open-ended inquiries that draw on prior knowledge into various topics and concepts in the curriculum, as proposed by Chang, Peng, Lin, and Liang (2015), teachers can adopt Digital storytelling (DST) in enabling the student groups to design their digital stories. While in text- or image-based form, the students need to think and create to be able to submit texts of high quality and reasonable storyboards (Kobayashi, 2012). They work on their game scripts more in cooperation with other individuals, as the design entails an interaction process where people reveal information with a view of learning from others. Those learners who do this later enhance their skills in collaborative learning and come up with innovative reflections (Novakovic, 2016).

Learners' competencies are not equal, and levels of knowledge range from one educational phase to another as well as the teacher's strategies in teaching (Mensah, N. et al. 2023; Thambu, N. et al. 2020; Barut MEO., Retnawati, H. 2020). Therefore, the teacher must look for the method which fits both the learner and the characteristics of the stage and the content of the subject. Instruction that delivers various educational contexts and considers facts and differences of learners is the right approach to obtaining the educational objectives, which educators pursue (Bonoli, L., & Gonon, P. 2022; Berkovich, I., & Benoliel, P. 2020; Sparkes JJ. 2020). For the teacher to improve the educational process and increase its effectiveness, he called for thinking about using technological devices and modern methods to carry out possible educational tasks. Developing education and advancing the educational process does not necessarily mean adding new educational materials or programs to the curricula and adding devices, machines, and tools to the educational systems only, but this is done through the optimal use of educational technology that serves the educational process and which modern technologies provide to provide the best performance and help achieve the desired goals of learning (Daher, 2023). In addition,

introducing modern technology into learning makes us get rid of outdated educational systems, provided that they are used systematically and coordinately in the basic educational process (Topping, 2022).

Digital kinetic storytelling is a new development in education curricula in that it combines well-developed visual stories with movement and interaction, making changes to lesson plans more effective. This approach not only hooks learners but also engages them in educational content in a way that fosters skills required in contemporary society. According to the works by Moody et al. (2024), digital stories enhance students' learning by telling narratives in a more fulfilling manner, integrating media and learning materials. Studies proposed that this paradigm enhances the interest and enrollment of students, particularly in the generation area of computer science (Oliveira and Klass, 2024). In digital storytelling, everyone is an active participant, and this active participation defines learning, problem-solving, critical thinking, and imagination, and these skills should all be developed by the year 2024 (Tyler and Moore, 2024). Problem-solving is a generic competency needed in today's educational setup; interactive storytelling has been seen to develop this among students.

Digital storytelling (DST) is the art of creating individual stories that use text, images, graphics, music, and sound. It has been established that digital storytelling helps in creating an effective learning environment through improvement on students' interaction, teamwork, and knowledge acquisition and presentation (Robin, 2008; Sadiq, 2009). Academic researchers have examined the impact of digital and traditional effected achievement within learning environments where oral activities are most associated with outcomes (Gomez, 1995, Kim et al., 2021, Marais 2022). Digital stories come under the purview of digital technologies; digital stories are defined as different software tools to attract the participation of students in various learning activities (Hong et al., 2012). simultaneously, they convey the intended viewpoints and values of the narrator through other digital forms of media such as images, videos, music, and audio (De Castro & Levesque, 2018; Lowenthal, 2009). With

images, audio, and text, it can complement students' interest and learning results (Bran, 2010; Maleta and Martin, 2010; Xu, Park, and Peck, 2011); in critical thinking (Gaita et al., 2014); and in problem solving (Yang and Wu, 2012).

Digital storytelling (DST) is a versatile educational tool that effectively taps into students' cognitive strengths and interests, resulting in enhanced motor skills and a deeper understanding of educational, ethical, historical, and national concepts (Trichopoulos, G. et al. 2023). By leveraging its narrative structure and character development, DST helps achieve behavioral objectives, making it an indispensable component of educational settings. Moreover, this innovative method fosters a broad range of skills and competencies (Toyin & Mewomo, 2023). ultimately enriching the learning experience and promoting academic success (Römhild & Hollederer, 2023). Therefore, it is the researcher's view that learners, particularly schoolgirls, always require something to probably compel them to pay attention; hence, when one uses whatever means or methods to attract their attention, it is more effective and positive. It was therefore possible to take advantage of the advantages of the digital kinetic story in an interrelated manner in a technological educational environment based on multimedia systems, images, and sound in the achievement of set goals to the desired high standard. According to the importance of kinetic story activity in the educational process and according to the limited number of studies that aim at knowing the extent of using this method at that stage, the researcher conducts this research as one of the scientific attempts to know the impact of the digital kinetic story on the self-esteem and on the ability of the sixth primary school pupils to think creatively.

Importance of research:

Recent research has followed the ways students learn, how information is stored in the human mind, and how optimal conditions can be provided for learning, which in turn has given rise to new methods and techniques through which utmost benefits, when used in harmony with every one of these methods, can be derived, which include the digital kinetic story through which the benefit is gained to offer new more effective and

efficient learning practices and presentations based on the learner's needs, possibilities, and preparedness. Through the above, the researcher believes that the importance of this research lies in the following points:

- It can provide opportunities in an attempt at a new method, which underlines the importance of optimal learning conditions provided through an interaction environment and some of the electronic educational media with sound and image in achieving the desired goals to a greater extent.
- It can assist in increasing and enhancing the use of the digital kinetic story through the integration of storytelling and the computer.
- As far as the researcher is aware, this possibly could be one of the initial studies in addressing digital kinetic stories and understanding their effect on self-esteem as well as cognitive flexibility among sixth-grade primary school students.

Study limitations:

This research was identified in: A group of kinetic stories that were addressed in two forms:

Kinetic stories arise from the classroom teacher's narration.

Stories are based on a kinetic computer.

A sample of sixth-grade primary school schoolgirls that were divided into two groups:

1. The first experimental group with whom the researcher maintained the kinetic stories following the narration of the classroom teacher.
2. The second experimental group with which the researcher accompanied the books—digital kinetic stories based on the use of the computer.

Research objective:

The current study seeks to establish whether there is a change in self-esteem as well as innovative thinking among 6th-grade primary school schoolgirls after using a digital kinetic story.

Research hypotheses:

Considering the research objective, the researchers assume the following:

1. There are statistically significant differences in the pre- and post-measurements of the first experimental group in the variables

that were evaluated and the percentage of improvement in favor of the post-measurement.

2. There are statistically significant differences in the pre- and post-measurements of the second experimental group in the variables that were evaluated and the percentage of improvement in favor of the post-measurement.

3. There are statistically significant differences between the average post-evaluation scores of the first experimental group and the second experimental group in self-esteem and creative thinking in favor of the second experimental group.

2. Materials and Methods

2.1. Design and Participants

The researcher opted to use the quasi-experimental method since it is the standard research method for the nature of the study. The researcher used one of the quasi-experimental designs, which is the experimental design for two experimental groups as well as the pre- and post-measurements for both groups. The study sample consisted of sixth-grade primary schoolgirls at the Sixteenth Elementary School in AlHofuf-Rawdah District, and their ages were extended between 11 and 12 years during the academic year 1446/1447, and the total number of students was 115. The researcher Intentional chose 40 schoolgirls, which is 34.78% of the research community, as a sample through which the researcher is going to apply the research. They were randomly divided into two groups, both of which comprised twenty equal and equally qualified schoolgirls. The researcher used kinetic stories with the first experimental group (EG1) based on the narration of the class teacher and followed the second experimental group (EG2) with digital kinetic stories. The researcher selected this sample because the school administration permitted the researcher to conduct the study with the provision of the required capabilities and equipment for the study. The schoolgirl who never attended school were eliminated, as were the female students who took part in the experimental study.

2.2. Methods

2.2.1. Distribution of the sample in moderate distribution:

The researcher confirmed the degree of the moderation of the distribution of the individuals of the two experimental groups with the following characteristics: age, intelligence (IQ), social level "economic and cultural" of the family, self-esteem, innovative thinking skills and From Table 1.

Table 1. The arithmetic mean, standard deviation, and Skewness coefficient of the two research groups concerning age, intelligence (IQ), the social level of the family economically and culturally, self-esteem, and innovative thinking (n = 40).

Outcomes	unit	EG1			EG2			t
		Mean	Std.	Skewness	Mean	Std.	Skewness	
age	year	11.37	0.25	-.72	11.38	0.25	-0.66	0.188
IQ	Score	8.35	0.49	0.68	8.4	0.50	0.44	0.319
social level								
economically	Score	63.15	7.01	0.27	63.25	7.09	0.25	0.045
culturally	Score	72.10	5.52	-.014	72.05	5.54	0.01	0.029
total	Score	135.25	11.39	-.094	135.3	10.49	-0.19	0.014
self-esteem	Score	53.55	2.86	-.713	53.6	2.78	-0.73	0.056
innovative thinking								
Motor fluency	Score	16.30	1.75	0.21	16.4	1.57	0.16	0.190
Motor imagination	Score	12.65	1.14	0.30	12.75	1.02	0.23	0.293
Motor originality	Score	7.45	1.23	-.25	7.5	1.32	-0.31	0.124
total	Score	36.40	2.66	-.09	36.65	2.52	-0.26	0.305

Table 1. shows that the values of the skewness for each of age, intelligence, the social status of the family (economic and cultural), self-estimation, and innovative thinking for both the first and second experimental research groups are range of (+3, -3) which may suggest that the distribution of the research sample students is moderately skewed. Equivalence was also observed between the two study groups because with calculated “t” values less than tabular (t) values at a significance level of 0.05, there were no significant differences between the two groups in these variables.

2.2.2. Tests and Measures:

John Raven's Color Progressive Matrices Test (Appendix A):

The tool we used in measuring the intelligence of the children in the research sample was a test of sequential matrices, which is made up of three groups of twelve matrices and six little matrices at the bottom of each of the groups' matrix. To record the child's mental growth until they get to the standard thinking level that is considered a method of deduction, which is the stage of mental age, the examiner chooses one matrix that will be complementary to the matrix that is above and puts the previous three groups in an order form. In this configuration, there is, therefore, the creation of a harmonized line of thought and a written documentation about the manner of work. Moreover, it is also important to mention that the different color of the test cards is to attract the children to take the test and distract them from what is around them (Gonthier, C. 2023), It has high scientific transactions since the coefficient test of the testimony (0.92) also arrived. The values of the stability coefficient for the test ranged between 0.94 and 0.97 using the test a few times and then using it again.

Social level scale (economic - cultural): (See Appendix B)

This was developed by Al-Qattan S. (1974) and seeks to quantify the socio-cultural status of a child's family. The scale includes two dimensions: the first that is the "economic" social level and the second that is the "cultural" social level. It is composed of twelve items of each dimension that help establish features such as the number of family members, the income of the family, the available tools and devices, both parents' educational levels, and culturally or recreationally activities that a family does. The correction key with which the scale is assessed has reasonable scientific validity depending on the result's type. The validity of the scale has been confirmed; the internal consistency coefficients of the dimensions of the scale are 0.68 and 0.73, and the stability coefficients when the scale is applied and in the second application are 0.65 and 0.69.

Self-estimation measure: (see Appendix C)

This scale was developed by Ashwal A**.** (1984) with the purpose of assessing self-esteem in children. The scale is made up of eighty items that are related to the children's personal identity, physical, and social identity. The terms used in the scale relate to the child's self-perception and emotion regarding themselves. The scale was constructed with a reliability and validity analysis yielding the desired confidence level of 0.95. The scoring system is such that the items loaded in the direction of the scale will receive scores ranging from 1 to 0, while those in the opposite direction will receive scores ranging from 0 to 1. Therefore, the maximum attainable total score on the scale is eighty, while the minimal attainable score is zero.

Innovative Thinking Test: (See Appendix D)

It is prepared by Torrance E. et al. (2008), where the first activities, the third and the fourth, are given degrees of fluency and kinetic originality, and the second activity is given degrees of kinetic imagination only, according to the following clarifications: The kinetic originality is determined by the total of various responses concerning the first, third, and fourth activity. The motor imagination: It is identified in the six segments that are in the second activity, whose accomplishment depends on the execution of the motor activities of several situations and the tradition of unfamiliar roles. The kinetic originality: The degrees of originality are estimated with the help of an unprecedented, unique, or repeated answer, which in very few proportions is appropriate and related to activity and funny. The total degree: This is the overall degree of testing that is really done on fluency, imagination, and originality, which are the innovative aspects of the child. The grades have been calculated where the grades were calculated for the motor fluency: the degree of each new response, similar and rational. As for the motor imagination, its degree is as follows: a degree is given when the child does not move. One degree is given when the child attempts to portray a certain role, but his actions are not proper for that role. A second degree is given when the child portrays some roles but the way he did it was wrong. Three degrees are provided where acting is appropriate and known. Four degrees are provided in cases whenever there is

a new signal in personalized interpretation and elaboration. As for the kinetic originality: how it works Basing on the degrees of freedom concept, the degree in the key to correction is calculated. The validity of the scale has been confirmed; the internal consistency coefficients of the dimensions of the scale are 0.66 and 0.75, and the stability coefficients when the scale is applied and in the second application are 0.63 and 0.70.

2.3.3. Procedures Digital kinetic stories (see Appendix E):

The researcher designed kinetic stories based on the research question of this study in addition to the growth trend of the target population, which is the sixth-grade girls in primary school, by consulting various studies such as OLIVEIRA, EG; CLASSE, TM. (2024), Modi S. et al. (2024), De Castro, A.B., Levesque, S. (2018), Hung, C. (2012), Xu, Y., et al. (2011), Malita, L., Martin, C. (2010), Lowenthal, P. R. (2009).

2.4. Research Timeline

The kinetic stories, when implemented, took four weeks, each of which had two sessions for each kinetic story, each lasting 45 minutes, therefore making the overall rate of the experiment. The organizational form of the session was as follows: Knowledge confirming (5 minutes), where in this part the students are arranged to tell the story to them. Presenting the story in general (10 minutes): In this part, the story is orally presented to the students of the first experimental group, while for the students of the second experimental group, the story is introduced to them through the computer in the television form of a kinetic story. Re-presenting the story with the application (20 minutes): In this part, the story is re-told to translate the situations into any kind of drawing the students wanted to draw based on the nature of the story. Students then must share with the teacher or in small groups what they have just seen in the digital story. Students also illustrate events based on the story through activity or acting. They can describe body movements to depict situations or characters, and this will involve dramatizations with fellow students. Achievement tests are used to assess comprehension and intensive retention of information. Students are also asked questions and solve puzzles as well related to the story. Evaluation

(5 minutes): This entails assessing those students as well. Pre-measurements were taken on either 10-11 September 2024, and the use of the strategy of digital kinetic stories was administered to both research groups from 15 September 2024 to 10 October 2024 for both groups, while the post-measurements were administered on either 12-13 October 2024, following the same process as the pre-measurements and under similar conditions.

2.5. Statistical analysis:

We computed significant statistics: the minimum, maximum, mean, and Std. for the pre- and post-measurements of the EG1 and EG2, the upper and lower limits of the 95% CI, and Cronbach's alpha coefficient using IBM-SPSS 26 statistics. We also computed the t-test t-values, the respective p values, and the effect size in terms of the Coen's d together with the improvement percentages. Therefore, to establish the significance of the change in the pre- and post-measurements between the two groups, an independent t-test was carried out. Moreover, a paired t-test (t, p) was conducted on a single group to determine whether one was able to get the mean values that were obtained from the pre- and post-tests while one test was different from another test. The independent samples t-test (t, p) was also applied to check the hypothesis that two independent values significantly differ. The value of $p < 0.05$ was used as the reference value in placing the focus on the significance of the findings.

4.Results

Table 2. Analysis of the significance between the means of the pre- and post-measurements in the first experimental group concerning the variables in focus (n = 20).

Outcome	Pre-		Post		95% CID		t	Sig.	Imp.
	Mean	Std.	Mean	Std.	Lower	Upper			
self-esteem	53.55	2.856	54.95	3.576	-3.46	0.66	1.42	0.171	2.61%
innovative thinking									
Motor fluency	16.3	1.75	20.75	1.585	-4.94	-3.96	18.95	0.001	27.30%
Motor imagination	12.65	1.137	17.75	1.251	-5.64	-4.56	19.57	0.001	40.32%
%Motor originality	7.45	1.234	11.1	0.641	-4.1	-3.21	17.49	0.001	48.99%
total	36.4	2.664	49.6	2.257	-13.1	-12.40	34.63	0.001	36.26%

As is evident in Table 2, the averages of the first experimental group's pre- and post-measurements in all

investigated variables manifested significant differences in favor of the post-measurement at a level of 0.05; the calculated "t" values were greater than the tabular (t) value The percentages of change vary between (2.61% - 48.99%).

Table 3. Analysis of the significance between the means of the pre- and post-measurements in the second experimental group concerning the variables in focus (n = 20).

Outcome	Pre-		Post		95% CID		t	Sig.	Imp.
	Mean	Std.	Mean	Std.	Lower	Upper			
self-esteem	53.60	2.78	64.95	2.24	-12.34	-10.36	24.06	0.001	21.18%
innovative thinking									
Motor fluency	16.40	1.57	25.95	0.83	-10.22	-8.88	29.83	0.001	58.23%
Motor imagination	12.75	1.02	21.80	1.20	-9.69	-8.42	29.84	0.001	70.98%
Motor originality	7.50	1.32	14.75	0.64	-7.93	-6.57	22.42	0.001	96.67%
total	36.65	2.52	62.50	1.57	-27.26	-24.44	38.36	0.001	70.53%

As is evident in Table 2, the averages of the second experimental group's pre- and post-measurements in all investigated variables manifested significant differences in favor of the post-measurement at a level of 0.05; the calculated "t" values were greater than the tabular (t) value The percentages of change vary between (21.18- 96.67%).

Table 4. Statistical significance of differences between the mean values of the post- measurements for the first and second experimental groups on the investigated variables, n = 40.

Outcome	G1		G2		t	Sig.	D.	95% CID	
	Mean	Std.	Mean	Std.			Imp.	Lower	Upper
self-esteem	54.95	3.576	64.95	2.235	10.60	0.001	18.57%	-11.91	-8.09
innovative thinking									
Motor fluency	20.75	1.585	25.95	0.826	13.01	0.001	30.93%	-6.01	-4.39
Motor imagination	17.75	1.251	21.80	1.196	10.46	0.001	30.66%	-4.83	-3.27
Motor originality	11.10	0.641	14.75	0.639	18.04	0.001	47.68%	-4.06	-3.24
total	49.60	2.257	62.50	1.573	20.97	0.001	34.27%	-14.15	-11.65

Table 4. indicates that there are statistically significant differences in the average values of the post-measurements between the first and second experimental groups across all variables examined, favoring the second experimental group. The calculated "t" values exceed the tabular (t) value at a significance level of (0.05), with the percentage changes varying between 18.57% and 47.68%.

4. Discussion:

The results of Table 2 showed that there were statistically significant differences between the averages of the pre- and post-measurements of the first experimental group, which applied the kinetic stories based on the narration of the classroom teacher, in all the variables under study, and in favor of the post-measurement, as the calculated "t" values were greater than the tabular (t) value at a significance level of (0.05), and the percentages of change ranged between 2.61% and 48.99%. The researcher attributes this result to the use of the kinetic story, because it provided a huge number of experiences that helped to revive and release abilities and ideas through exploration, experimentation and imagination so that the student could reach the goal, which helps to develop innovation among the students of the first experimental group. It also made them more attentive and focused on what was asked of them during their teaching of those kinetic stories, which contributes to increasing the opportunities for exploration and self-initiation. It also contributed effectively to raising the level of the students because of the experiences they have that are appropriate for their age and the excitement that drives away boredom and weariness from their souls.

This is consistent with the study Oliveira et al. (2024), Tortella, P. (2020) which demonstrated that kinesthetic learning that integrates movement into lessons increases student motivation and engagement, leading to better focus and behavior in the classroom. Storytelling in kinesthetic education also greatly motivates children, enhances their enjoyment, and improves their performance. Eun-Jung K. et al. (2016) believe that the use of kinesthetic narrative educational content, especially through storytelling and movement, enhances creative thinking and self-esteem by engaging children’s imagination. Designing interactive stories and games that use movement to control characters requires careful planning to ensure that children can actively engage with the content (Huhtanen, 2014). Incorporating kinesthetic elements into educational environments promotes a more inclusive approach to learning, addresses diverse learning needs, and encourages active participation (Oliveira et al., 2024).

Therefore, the first hypothesis is fulfilled: The first experimental group post-measurement presents statistically significant differences as compared to the pre-measurements in the variables assessed and the percentage of improvement in favor of the second post-measuring.

The findings of Table 3. revealed significant differences between the means of the second experimental group, to which the digital kinetic stories were administered for the variables of investigation in the post testing direction, as the calculated "t" values exceeded the tabular (t) value at 0.05 level of significance, and percentage improvement extended between 21.18 and 96.67%. The researcher elaborates these findings on the positive and profound role of digital kinetic stories as kinetic stories afford students the chance of free movement—as they open new and broader spheres for creative and critical thinking—and let them perform their body and mind and tell the story in their own creative way, apart from contributing to expanding the circle of knowledge as they gain many ideas and learn the prevailing environment as well as adapt to sharing, collaborating, and cohesion. The researcher also believes that this result arose from the aspect of using the computer, as it tries to build a good education environment by touching all the specialties of the students as well as motivating on the one hand using kinetic stories on the computer, eliminating boredom in as much as one is made to feel her worth and her personality without hindrance by the teacher through the times, and the rate at which she presents is all determined by the desires and capabilities.

Taliak et al. (2024) have noted that the use of digital stories makes the learning experience engaging, less monotonous, and motivates students. The use of digital story aspects makes use of analytical thinking and problem solving. Both Salyuk and Shkola (2023), Hamouda, (2023), and Yang, et al. (2020) proved that through creating digital stories, self-identity and relationship skills, for subsequent social integration, are also built, as each learner demonstrates storytelling individually, which fosters imagination and self-expression.

Digital stories have been related to enhanced motivation and effective learning. Students consider the digital stories as enjoyable and captivating, which make them more engaged and motivated during learning (Başar, 2022) (Aktaş & Yurt, 2017). Therefore, the second hypothesis is fulfilled: The second experimental group post-measurement presents statistically significant differences as compared to the pre-measurements in the variables assessed and the percentage of improvement in favor of the second post-measuring.

The results of Table 4. also pointed out that there were significant differences between the means of the post-measurements of the first experimental group, which followed the kinetic stories based on the narration of the class teacher and the second experimental group which used the digital kinetic stories in all the studied variables and in favor of the second experimental group as the calculated "t" values were higher than the tabular "t" value at 0.05 level of significance and the improvement rate differences ranged between 18.57% and 47.68. The researcher has attributed this to the fact that use of the computer assisted in the development of this information and the general capacity to think and imagine since it offers the capability to access images and drawings both still and moving and then offers the accompanying narrative audio track connected with these images. The following is a pictorial depiction of the interaction of the various body parts during the performance and the aspect of the body in implementation space. It also has an easy and interesting presentation method considering the coordination in presenting, nice choice of words, and accompanied by a musical. All of this made the digital kinetic stories distinguished from the kinetic stories based on the class teacher's narration as they became able to build the basic knowledge of the students in accordance with the ideas and information they observe.

This can be supported by a study carried out by Başar (2022) that focused on third-grade students, In the study, it was found that the students who were exposed to digital stories had better achievement in science lessons than the students who were grouped out. In this regard, digital stories raise the students'

academic performance to a great extent. Yang and Wu (2012) observed that storytelling improved proficiency in English among high school learners that surpassed conventional lecturing techniques. Digital stories enable thinking and creativity since students engage with content in an interactive and individualized manner.

As noted by Aktas and Yurt (2017), this method has been said to raise students' interest in exploring and reasoning. The author also identified that due to the narrative and engaging nature of digital stories, there is less likelihood of learners getting bored and that they develop enhanced self and confidence levels as a result of the interactive and engaging aspects of the digital stories. As with most technologies, digital kinetic stories have evidenced strong positive results in learning environments and thus it is worthy to note the within and between group variations on the results elicited depending on the context and subject. From this, the researcher concludes that digital kinetic stories enhanced the self-esteem of the student and cultivated the aspect of innovative thinking. From this, the third hypothesis is realized which states that Descriptive and inferential analysis of the results also indicated that There are statically significant differences between the mean scores of the post-assessment of the first experimental group and the second experimental group in self-esteem and creative thinking in favor of second experimental group.

5. Conclusions

Considering the confines of the research problem, its significance for realizing its goal, assumptions, and the type of the sample, which involved 40 students from the primary sixth grade, besides the statistical analysis and the interpretation over the result's discussion, the researcher of the current study allowed for the Motor stories based on the narration of the class teacher used on the first experimental group enabled enhancing the research variables of 'self- esteems and innovative thinking skills as The second set of experiments whose subjects were exposed to the digital kinetic stories showed an improvement of research variables such as self –esteem in The ability to innovative thinking The percentage improvement from 21.18 to 96.67%. Therefore,

the second experimental group which applied digital kinetic stories on the basis of the list of the class teacher in self-esteem, the ability to think about innovative thinking as the improvement rate differences ranged between 18.57% and 47.68 percent necessary for the benefit of the group. The second experiment.

6. Recommendation:

According to the research findings, the researcher would encourage the use of the kinetic storytelling method either by the teacher or using digital kinetic storytelling to promote self-esteem and creativity. In addition, classroom teachers also should be trained in another method, which is known as digital kinetic storytelling, and offer ready-to-print digital kinetic story templates for the classroom teachers to use in classroom teaching practice. In addition, there is digital kinetic storytelling, which means that this method should be employed in other age groups so that the general result can be obtained. Further research should consider other means through which self-esteem and creativity can be fostered and comparative research to compare the application of kinetic storytelling with other instructional approaches. Moreover, research avenues for future research could explore how changes in learners' personal development and cognition occur over time as a result of engagement in digital kinetic storytelling.

References

1. Aktas E., Yurt SU. (2017). Effects of Digital Story on Academic Achievement, Learning Motivation and Retention among University Students, International Journal of Higher Education, 6(1), 180-196. DOI: https://doi.org/10.5430/ijhe.v6n1p180
2. Al -Qattan S. (1974): A comparative study of the level of anxiety in blind and visual teenagers, unpublished Master Thesis, College of Education, Ain Shams University.
3. Al-Ashwal AAE. (1984): The Self -Concept Requirement for Children, "Parking of Stand", Cairo, The Egyptian Anglo Library.
4. Al-Hail M, Zguir MF, Koç M. (2022). Exploring Digital Learning Opportunities and Challenges in Higher Education Institutes: Stakeholder Analysis on the Use of Social Media

for Effective Sustainability of Learning–Teaching–Assessment in a University Setting in Qatar. Sustainability. 2024; 16(15):6413. https://doi.org/10.3390/su16156413

5. Barut MEO., Retnawati H. Geometry learning in vocational high school: Investigating the students' difficulties and levels of thinking, Journal of Physics Conference Series, 2020, 1613(1):012058. DOI: 10.1088/1742-6596/1613/1/012058
6. Başar, T. (2022). The Effect of Digital Stories on 3rd Graders' Achievement, Attitudes and Motivation in Science Lesson. Participatory Educational Research, 9(5), 127-142. https://doi.org/10.17275/per.22.107.9.5
7. Berkovich, I., & Benoliel, P. (2017). The educational aims of the OECD in its TALIS insight and lesson reports: exploring societal orientations. Critical Studies in Education, 61(2), 166–179. https://doi.org/10.1080/17508487.2017.1370428
8. Bonoli, L., & Gonon, P. (2022). The evolution of VET systems as a combination of economic, social and educational aims. The case of Swiss VET. Hungarian Educational Research Journal, 12(3), 305-316. https://doi.org/10.1556/063.2021.00062
9. Bran, R. (2010). Message in a bottle telling stories in a digital world. Procedia: Social and Behavioral Sciences, 2(2), 1790–1793. https://doi.org/10.1016/j.sbspro.2010.03.986
10. Buseyne, S., Libot, C., Van Lier, T., & Raes, A. (2024). Every Lesson Needs a Gandalf: How Interactive Storytelling can Enhance the Collaborative Learning Experience!. International Journal of Designs for Learning, 15(2), 65–78. https://doi.org/10.14434/ijdl.v15i2.35644
11. Chang, C. C., Peng, L. P., Lin, J. S., & Liang, C. (2015). Predicting the creativity of design majors based on the interaction of diverse personality traits. Innovations in Education and Teaching International, 52(4), 371–382. DOI: 10.1080/14703297.2014.999697

12. Daher W. (2023). Saturation in Qualitative Educational Technology Research. Education Sciences; 13(2):98. https://doi.org/10.3390/educsci13020098
13. De Castro, A. B., & Levesque, S. (2018). Using a digital storytelling assignment to teach public health advocacy. Public Health Nursing, 35(2), 157–164.
14. Dzaid A., Nurhidayah S. Sosialisasi pengenalan konsep diri siswa pada masa pra pubertas. An-Nizam,2024, Vol. 3 No. 1, 101-107. doi: 10.33558/an-nizam.v3i1.8888
15. Eun-Jung K., Dongil S., Keum-Sun K. (2016). A study of kinetic narrative educational contents based on English literature: A convergent approach. *Journal of Digital Convergence* , *14* (4), 43–53. https://doi.org/10.14400/JDC.2016.14.4.43
16. Gaeta, M., Loia, V., Mangione, G. R., Orciuoli, F., Ritrovato, P., & Salerno, S. (2014). A methodology and an authoring tool for creating complex learning objects to support interactive storytelling. Computers in Human Behavior, 31, 620–637. DOI: 10.1016/j.chb.2013.07.011
17. Gomez, L. M., Arai, P. J., & Lowe, L. (1995). English language learners and computers: A literature review with annotated bibliography. San Mateo, CA: Aguirre International.
18. Gonthier, C. (2023) Should Intelligence Tests Be Speeded or Unspeeded? A Brief Review of the Effects of Time Pressure on Response Processes and an Experimental Study with Raven's Matrices. J. Intell, 11, 120. https://doi.org/10.3390/jintelligence11060120
19. Granić, A. Educational Technology Adoption: A systematic review. Educ Inf Technol 27, 9725–9744. https://doi.org/10.1007/s10639-022-10951-7
20. Hamouda, H. (2023). Digital Stories for Enhancing Palestinian Refugee School Children's English Reading Micro-skills: Action Research Study. International Journal of Linguistics, Literature and Translation, 6(8), 93-115. https://doi.org/10.32996/ijllt.2023.6.8.9
21. Huhtanen M. (2014). Kinetic kid – Guiding child interaction within a motion game, Department of Media,

School of Arts, Design and Architecture, Master's thesis, Aalto-University Helsinki, Finland, Pixar printing, Italy Year. Available in; https://urn.fi/URN:NBN:fi:aalto-201409172628.

22. Hung, C. M., Hwang, G. J., & Huang, I. (2012). A project-based digital storytelling approach for improving students' learning motivation, problem-solving competence and learning achievement. Journal of Educational Technology & Society, 15(4), 368–379.
23. Kerimbayev, N., Umirzakova, Z., Shadiev, R. et al. A student-centered approach using modern technologies in distance learning: a systematic review of the literature. Smart Learn. Environ. 10, 61 (2023). https://doi.org/10.1186/s40561-023-00280-8
24. Kim, D., Coenraad, M., & Park, H. R. (2021). Digital storytelling as a tool for reflection in virtual reality projects. Journal Of Curriculum Studies Research, 3(1), 101-121. https://doi.org/10.46303/jcsr.2021.9
25. Kobayashi, M. (2012). A digital storytelling project in a multicultural education class for pre-service teachers. Journal of Education for Teaching, 38 (2), 215–219. DOI: 10.1080/02607476.2012.656470
26. Lowenthal, P. R. (2009). Digital storytelling: An emerging institutional technology? In K. McWilliam & J. Hartley (Eds.), Story circle: Digital storytelling around the world (pp. 252–259). Malden, MA: Wiley-Blackwell.
27. Malita, L., & Martin, C. (2010). Digital storytelling as web passport to success in the 21st century. Procedia-Social and Behavioral Sciences, 2(2), 3060–3064. DOI: 10.1016/j.sbspro.2010.03.465
28. Marais, E. (2021). A journey through digital storytelling during COVID-19 Students preparedness to use technology for learning in the language classroom. Research in Social Sciences and Technology, 6(2), 169-182. https://doi.org/10.46303/ressat.2021.17
29. Mensah, N., Barton Odro, E., & Williams, D.A. (2023). Examination of 9th graders' levels of geometric thinking. International Journal of Research in Education

and Science (IJRES), 9(3), 688-703. https://doi.org/10.46328/ijres.3184

30. Modi S., Gupta T. (2024). Rahmatullah M. Digital storytelling as a tool for global citizenship and sustainability: Enhancing cross-cultural understanding in education, Journal of Interdisciplinary Studies in Education, 13(S1), 65-104. https://doi.org/10.32674/s817ax14
31. Novakovich, J. (2016). Fostering critical thinking and reflection through blog-mediated peer feedback. Journal of Computer Assisted Learning,32, 16–30. https://doi.org/10.1111/jcal.12114
32. Oliveira, EG; Classe, TM. (2024). Digital Storytelling as an Active Learning Tool in the Introduction to Computer Science Discipline. In : WORKSHOP ON COMPUTING EDUCATION (WEI), 32, 2024, Brasília/DF. Proceedings Porto Alegre: Brazilian Computer Society,. p. 160-171. DOI: https://doi.org/10.5753/wei.2024.2535 .
33. Robin, B. R. (2008). Digital story-telling: A powerful technology tool for the 21st century classroom. Theory into Practice, 47(3), 220-228. https://doi.org/10.1080/00405840802153916
34. Römhild, A., & Hollederer, A. (2023). Effects of disability-related services, accommodations, and integration on academic success of students with disabilities in higher education. A scoping review. European Journal of Special Needs Education, 39(1), 143–166. https://doi.org/10.1080/08856257.2023.2195074
35. Sadik, A. (2009). Digital story-telling: A meaningful technology-integrated approach for engaged student learning. Educational Technology Research and Development, 57(4), 487-506. https://doi.org/10.1007/s11423-008-9091-8
36. Saliuk B., Shkola I. (2023). Digital storytelling as a tool for socio-emotional competencies development in the English language classroom, Scientific papers of Berdiansk State Pedagogical University Series Pedagogical sciences, 1(2):298-305. doi: 10.31494/2412-9208-2023-1-2-298-305

37. Sparkes JJ. (2020). On Choosing Teaching Methods to Match Educational Aims " Distance Education: International Perspectives", 2020. DOI: https://doi.org/10.4324/9781003033950-25
38. Taliak, J., Amaliah, A., Nugroho, A., Mubarak, M., & Putro, A. B. P. (2024). Advancements in Educational Technology: Cultivating Critical Thinking Proficiency among Students Through Innovative Learning Models. Global International Journal of Innovative Research, 2(1), 355–363. https://doi.org/10.59613/global.v2i1.56
39. Thambu N., Othman MKH.,Naidu NBM. (2020). Using Forum Theatre To Develop Various Levels Of Thinking Skills Among Moral Education Students In Secondary School, Malaysian Journal of Learning and Instruction, 17(2):167-194. DOI: 10.32890/mjli2020.17.2.6
40. Topping KJ. (2022). Educational Systems for Disruptive Adolescents, Routledge Library Editions: the Adolescent Series. DOI: 10.4324/9781003343394
41. Torrance E. , Ball O. , Safter H. (2008) Torrance Tests of Creative Thinking : streamlined scoring guide for figural forms A and B ; to be used in conjuction with the TTCT Norms-Technical Manual, Scholastic Testing Service, Bensenville, IL, pp. 42.
42. Tortella, P. (2020). A storytelling in motor education contributes to motivate kindergarten children to physical activity. Formazione & Insegnamento, 18(1 Tome I), 376–387. https://doi.org/10.7346/-fei-XVIII-01-20_30
43. Toyin, J. O., & Mewomo, M. Assessing the innovative skills and competencies required of construction management graduates. Organization, Technology, and Management in Construction: an International Journal, 2023, 15(1):90-106. DOI: 10.2478/otmcj-2023-0002
44. Trichopoulos G, Alexandridis G, Caridakis G. (2023). A Survey on Computational and Emergent Digital Storytelling. Heritage; 6(2):1227-1263. https://doi.org/10.3390/heritage6020068

45. Tyler C., Moore S. (2024). Storytelling To Ignite Learning, Germanic Philology, Journal of Yuriy Fedkovych Chernivtsi National University, 848,149-61, https://doi.org/10.31861/gph2024.848.149-161.
46. Waqar M, Bibi S. (2019). Mediating Role of Self-Concept in Moral Development and Risk-Taking Behaviours Among Children". *JECCE*, 3, 76-88. doi:10.30971/jecce.v3i.483.
47. Xu, Y., Park, H., & Baek, Y. (2011). A new approach toward digital storytelling: An activity focused on writing self-efficacy in a virtual learning environment. Journal of Educational Technology & Society, 14(4), 181–191.
48. Yang YC., Wu WI. (2012). Digital storytelling for enhancing student academic achievement, critical thinking, and learning motivation: A year-long experimental study. Computer Education, 59(2), 339-352. doi: 10.1016/J.COMPEDU.2011.12.012
49. Yang, Y. T. C., Chen, Y. C., & Hung, H. T. (2020). Digital storytelling as an interdisciplinary project to improve students' English speaking and creative thinking. Computer Assisted Language Learning, 35(4), 840–862. https://doi.org/10.1080/09588221.2020.1750431
50. Yu J-E. Exploration of Educational Possibilities by Four Metaverse Types in Physical Education. Technologies. 2022; 10(5):104. https://doi.org/10.3390/technologies10050104