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ARTICLE

Enhancing Innovative Thinking Skills via Digital Narratives in Translation Training

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ABSTRACT

In this study, the authors take the presented pedagogical approach, Digital Narratives in Translation Training (DNTT), as the starting point to promote innovative thinking in translation education. Specifically, it evaluates the framework's impact on three dimensions of cognitive creativity: associative reasoning, visual structuring, and ideational fluency. In the present study, a quasi-experimental research design was employed, and the participants were 63, divided into two experimental and control groups to assess the impact of integrating digital storytelling in translation training. The results presented have revealed a relatively significant improvement, particularly in the conceptual fluency that has dramatically enhanced the generation of multiple and novel ideas. This means that the performance of associative reasoning was moderately improved to support the enhanced creative ideas connected to the translation tasks. Visual structuring, however, only needed moderate advance, indicating specific problems in transferring spatial and visual factors into cognitive processes of interpretation. The quantitative data and graphical illustrations serve as evidence of those outcomes and underscore the value of the DNTT framework for developing mental and creative skills. All these outcomes show that the integration of the use of digital stories is a strategic factor in the training of translators. The study encourages higher learning institutions in translation to embrace progressive, creativity-based strategies alongside mainstream strategies to train translation students in innovative skills. This study attempts to contribute to reducing cognitive creativity gaps in translation training to enhance the field's educational model.

Keywords: Translation Pedagogy; Creative Cognition; Digital Storytelling; Language Education; Innovative Learning

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1. Introduction

The translation profession involves translators who work at the interface of language, culture, and creativity. In addition to language proficiency, successful translators must apply innovative thinking skills to translate messages as efficiently as possible. These skills include associative reasoning and coherence between cultural and linguistic aspects[1].

- *Visual structuring*: Abstract concepts of language and cultural relations[2].
- *Ideational fluency*: Developing innovative ideas for interpretative problems.

For some reason, these skills are poorly developed in traditional approaches, though they ignore such skills as memorization and direct translation[3]. Digital storytelling is a better approach, which involves the learners in building narratives that are linguistically and culturally integrated[4].

1.1. Background and Theoretical Framework of Digital Storytelling as a Pedagogical Tool

Using Creativity in Translation is not just changing one language to another. It is a complex process involving creativity, understanding of culture, and using accurate language[5, 6]. Translators in this context are exposed to several contexts and cultural meanings to ensure that they produce accurate translations[7]. The creative approach helps in this process, providing translators with appropriate mentalities, organizing content to be translated in a given context, and addressing interpretational difficulties[8]. Creativity, problem-solving, and adaptability are all cognitive skills that fall under innovative thinking and are essential in providing meaningful translations[8]. According to Ramalingam et al., creative cognition involves identifying, assessing, and utilizing creativity on problems[8]. Translational competence, in particular, relies on this ability to respond to verbal equations and manage cultural and stylistic aspects of texts. Experience shows that creativity is critical for a translator, making creativity a significant component of a translation curriculum[9]. This framework emphasizes three dimensions of innovative thinking relevant to translation: Associative reasoning, visual structuring, and ideational fluency[8, 9]. Creative thinking in translation has key dimensions. ***Associative thinking*** is a concept that means the capacity to connect concepts, ideas, or elements that seem to have no relation in the first place. In translation, this skill is invaluable when it is necessary to translate, for example, an idiom, a metaphor, or a reference to a culture that is unfamiliar to the translator. For instance, translating "raining cats and dogs" to a culturally equivalent phrase in the target language also involves a fruitful understanding of its literal and metaphorical sense in the source language[6].

Further, Beaty et al. noted associative cognition is essential to creativity because it helps search for connections between concepts[10]. In translation, this process includes searching for intersections of cultural scaffolds to fit the semantic and pragmatic translation better[11]. However, associative reasoning is not inherent and needs to be developed by arranging tasks that comprise a given domain, like thematic mapping or contextual analysis[12, 13]. Finally, associative reasoning threatens conventional didactic methodologies in translation education[14]. Traditional approaches include formal drilling and emphasis on grammar, which may inhibit learners' thinking styles[12, 14]. As Zhan et al. pointed out, associative reasoning entails engaging learning techniques that create an environment of exploration, creativity, and context-based learning[12]. ***Visual Structuring*** refers to the ability to think about relationships, patterns, or structures in a way that assists in comprehension and solving problems. Visual structuring is common when translating texts for visual media, subtitles, or layout of multilingual documents. In addition to its practical use, visual structuring helps to sort the linguistic and cultural information that is often essential in translation[15]. Kosslyn defined mental imagery as a cognitive procedure whereby people visualize ideas, thus improving their understanding. In translation, this ability is vital for such operations as positioning the text in the picture or the correct orientation of the symbols, which is essential for the culture[16]. Ping et al. agreed by showing that visualization increases learners' interest in abstract concepts, especially when combined with multimedia gadgets[15, 17].

However, visual structuring is one of the least emphasized aspects of translation training. This may be so because traditional analysis methods do not consider the part played by imagery in cognitive processing while relying more on text analysis[18, 19]. This shortcoming may prevent learners from developing mental images of complex translation

situations, which implies redesigning the teaching-learning process to include visuals [1, 18]. ***Ideational fluency*** means devising many solutions or meanings for the problem. This skill is helpful in translation as a given text is translated in different ways, each of which is correct in context. Ideational proficiency in translators is advantageous because it allows for the creative adaptation of content close to the owner's purpose [20]. Guilford defined divergent thinking as a subtest of ideational fluency instruction emphasizing originality and flexibility [18]. In translation, these attributes enable practitioners to perform them efficiently due to complicated linguistic and cultural relativity [2]. For instance, when translating a marketing sell-it, ideational fluency helps the translator develop several possible adaptations that belong to the cultural expectations of the target language community. It is well understood that ideational fluency is valuable, but few realize it cannot be achieved without practice [3, 7]. The same authors also showed that brainstorming and open-ended problem-solving enhance this skill [21]. However, conventional approaches to translation education strictly rely on an academic routine by providing a fundamental need to be accurate when translating rather than promoting the need to think creatively. To redress this, there is a need to adopt a learning paradigm that employs discovery and learning by doing.

Digital storytelling has become one of the most effective approaches to encouraging innovative learning in education. Because it is built on the principles of narrative construction with multimedia components that enrich the learning process; it is an excellent learning platform as it targets all aspects [22]. In translation courses, digital storytelling approaches linguistic and cultural elements from an artistic and participative perspective [23]. Robin discussed the educational implications of digital storytelling, which include using text, images, and sounds in a coherent teaching and learning process [23]. While this approach improves students' technical knowledge, it also develops their capacity to integrate and appreciate different information and presentation skills. These skills help translators deal with work that offers perfect and meaningful translations [24]. As stated by Yilmaz and Goktas, storytelling activities in learning increase learners' imaginative processes and are crucial in developing creative solutions in translation [4]. Likely, Coventry facilitated the realization that the application of digital storytelling assists learners in understanding the abstraction of theory, particularly the direct application of concept and knowledge in practice. Therefore, these results support the incorporation of digital storytelling into translation education. However, as we have seen, digital storytelling has problems [25]. It is also essential to note that implementing both strategies is closely linked to the program's learning objectives. Integrated with this, Moreno and Mayer stated that, to enhance multimedia learning, the cognitive load should be reduced by including relevant graphics and eliminating unnecessary components. In translation training, it can be applied to avoid the dilution of the concept of storytelling activities [19]. The following conceptual framework for the DNTT module has been developed within this context. The DNTT module aims to fill the gaps found in traditional translation education by combining digital narratives with thinking frameworks. Built on Merrill's first principles of instruction, the module focuses on the practice of tasks and their repeated application to improve cognitive activity [20]. These principles are well supported by Vygotsky's theory on social constructivism; in group activities, learners can also practice the creative aspect of problem-solving skills [1].

The DNTT module incorporates a five-stage process: *1) Conceptual Mapping*: Trainees define major translation problems and develop their first solutions. *2) Narrative Construction*: Participants are asked to develop digital stories based on actual translation tasks that include linguistic and cultural aspects. *3) Visual Representation*: The stories are created using technology, enabling the students to think abstractly and develop spatial intelligence. *4) Collaborative Revision*: People in the same group improve their stories by evaluating each other's work, thus improving their associative thinking. *5) Final Presentation*: The work done is presented to the class, focusing on conceptual flexibility and versatility. Thus, by combining these stages, the DNTT module develops the cognitive skills that are required for professional translation and, at the same time, offers a fruitful and enjoyable learning process.

2. Methodology

2.1. Participants

The sample of the study consists of 63 translation trainees, 20–25 years old, studying translation in a trans-

lation training program in Iraq. The participants were chosen from an Iraqi language institute famous for providing extra courses in translation. They were divided into two groups: the experimental group, which used the DNTT module, and the control group, which used a conventional lecturing approach (**Table 1**).

Table 1. Participants of the study.

Group	Male	Female	Total
Experimental (DNTT)	15	17	32
Control	14	17	31
Total	**29**	**34**	**63**

2.2. Research Design

The DNTT module was implemented over six weeks. It consisted of five structured stages to integrate Iraqi cultural and linguistic contexts into the training: First Conceptual Mapping: Second Translation Difficulties were reported regarding texts that involved the Iraqi cultural domain, including idiomatic expressions, proverbs, and religious aspects. 2. Story Construction: Trainees created story-based scenarios based on the Iraqi cultural background and the contemporary political context to model actual translation situations. Third Visual Representation: These narratives were drawn as diagrams, storyboards, or digital illustrations to represent ideas and cultural practices. Fourth Collaborative Revision: Small groups worked on their narratives by receiving feedback from their peers, which included cultural and linguistic translation accuracy issues. Fifth Final Presentation: Every group showcased the final project and received feedback from fellow students and teachers. A pre-and post-test was used to assess participants' performance on three cognitive creativity dimensions, associative reasoning, visual structure, and ideational fluency according to the ITA, which was modified for the Iraqi cultural and educational setting.

2.3. Data Analysis

2.3.1. Associative Reasoning

Associative reasoning is crucial in enabling individuals to map linguistic features accurately onto corresponding cultural domains. This skill is particularly critical in Iraqi contexts, where language is deeply intertwined with cultural heritage, religious norms, and historical narratives. One specific challenge was the participants' ability to identify culturally appropriate equivalents for idiomatic expressions, such as the phrase "في الميت حرام الضرب" ("beating a dead horse"). This phrase, deeply rooted in Iraqi social and religious values, required participants to go beyond literal translations and engage in cultural decoding. The Digital Narrative Translation Training (DNTT) framework was designed to address this need by emphasizing contextual mapping and co-narration activities. However, the results of the paired-sample t-test revealed that while improvements were observed, they were not statistically significant. The paired-sample t-test compared the experimental and control groups' pre-and post-test scores to assess associative reasoning changes. The descriptive and inferential statistics are summarised in **Table 2** and **Figure 1**:

Table 2. Results of pre-test and post-test and significance value of DNTT.

Group	*Pre-Test Significant (SD)*	*Post-Test Significant (SD)*	*Significant Difference*	*p-Value*
Experimental (DNTT)	64.5 (8.3)	70.2 (7.9)	5.7	0.12
Control	63.8 (7.5)	64.3 (7.2)	0.5	0.81

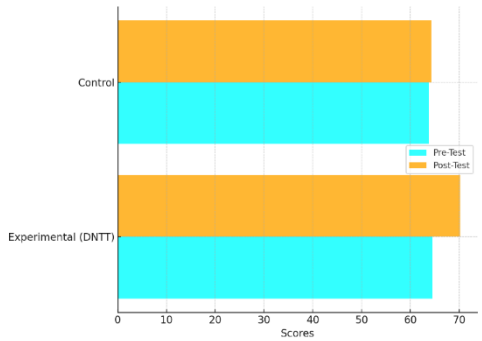

Figure 1. Associative reasoning scores (horizontal bar chart).

The experimental group that received the training on the DNTT framework showed an overall gain of 5.7 points in the associative reasoning subscale. However, this improvement was not statistically significant, with a $p = 0.12$, above the conventional level of 0.05. The control group, which underwent the traditional training mode in translation, only recorded a significant difference of 0.5 ($p = 0.81$).

The results obtained on the experimental group indicate that the DNTT framework has the potential for improving associative reasoning, especially regarding the ability of the

participants to connect linguistic aspects to cultural domains. The contextual mapping and co-narration activities may have led to the observed increases. For instance, they were urged to relate certain cultural proverbs, idioms, and metaphors to their social and historical contexts; apart from that, the process helped to enhance the understanding of Iraqi cultural domains and critical thinking and problem-solving skills. Nevertheless, since the changes are not statistically significant, it can be concluded that the framework needs further enhancement to produce a more substantial effect. There is some evidence that a short duration of the training program may not have been long enough for the participants to develop the necessary associative ability that is a prerequisite for reasoning. Further, difficulties associated with participants with limited prior experience with integrative assignments could have been encountered because the task involves both language and culture. However, due to the low number of participants, the results suggest that the DNTT framework can be beneficial in helping with the issues of cross-linguistic translation. To maximize its effectiveness, future iterations of the framework could incorporate additional support mechanisms, such as:

- Extended Training Duration: They allow more time for practice and skill acquisition and training on associative reasoning among participants.
- Cultural Immersion Activities: To enhance the participants' cultural knowledge, cultural immersion activities like visiting cultural places or interacting with native people are used.
- Interactive Digital Resources: Using multimedia technologies to develop rich learning contexts that support mapping features of language and culture.

Thus, the skills to map linguistic features to cultural domains are essential for translators, educators, diplomats, and businesspeople. Therefore, the DNTT framework might help develop a workforce capable of addressing global communication challenges due to the improvement of associative reasoning. Hence, this skill is indispensable for creating a good understanding of the local culture in Iraq and for preserving cultural and language diversity in Iraq. To sum up, the results of the present study indicate the difficulties of enhancing associative reasoning with the help of the DNTT framework and provide evidence of its further research and development. Future research may extend this study to examine other instructional approaches and how they affect participants' performance in mapping linguistic and cultural features.

2.3.2. Visual Structuring

Man has used drawings and sketches to illustrate ideas that cannot be explained orally throughout history. This practice has been most evident in passing down folk tales, poetry, and religious scriptures in the Iraqi context. Elements of these artifacts include concepts, lessons in moral codes, and complex allegories that have a concrete connection to Iraqi culture. They benefit trainees who translate or interpret such texts because visualizing these ideas connects language and culture. The results obtained in this research point to the use of visual structuring in the understanding of abstract concepts. The experimental group trained under the DNTT framework revealed a slight enhancement in their performance in using visuals to interpret culturally dense texts. Group Pre-test 21.45 (2.88) 27.45 (3.47) 6.00 < 0.01 Experimental (DNTT) 58.9 (6.4) 62.7 (6.9) 3.8 0.09 Control 58.7 (5.9) 59.1 (5.8) 0.4 0.67d on visual aids, such as drawings and sketches, to convey ideas that are difficult to articulate in words. This practice has been particularly prominent in transmitting folk stories, poems, and religious texts in Iraqi culture. These cultural artifacts often encapsulate abstract concepts, moral lessons, and intricate metaphors deeply rooted in Iraq's rich traditions. Visualizing these ideas is vital for trainees who translate or interpret such texts, as it helps bridge the gap between linguistic elements and cultural meanings. The data collected during this study highlights the role of visual structuring in facilitating the comprehension of abstract concepts. The experimental group, trained under the Digital Narrative Translation Training (DNTT) framework, demonstrated modest improvements in their ability to use visual aids for understanding culturally rich texts. A paired-sample t-test was conducted to evaluate the pre-and post-test performance of both the experimental and control groups, as summarised in **Table 3** and **Figure 2**:

Table 3. Results of t-tests and significance value of DNTT.

Group	Pre-Test Significant (SD)	Post-Test Significant (SD)	Significant Difference	p-Value
Experimental (DNTT)	58.9 (6.4)	62.7 (6.9)	3.8	0.09
Control	58.7 (5.9)	59.1 (5.8)	0.4	0.67

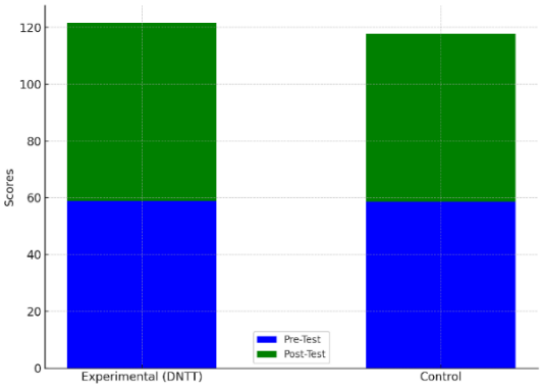

Figure 2. Visual structuring scores (stacked bar chart).

The experimental group scored a significant gain of 3.8, while the control group only gained 0.4 points. Despite the increase in the experimental group being non-significant ($p = 0.09$), the result demonstrates the effectiveness of visual aids in training programs designed to improve trainees' ability to interact with culturally diverse texts.

The slight increases noted in the experimental group reveal the difficulties inherent in using visual structuring to comprehend abstract concepts in texts that are already complex and culturally rich. For example, traditional Iraqi folk stories use a lot of figures of speech, notably allegory and symbolism, when making ethical statements. Likewise, religious scriptures and poems often contain only comprehensible images where cultural and historical meanings are concerned. During the training sessions, the participants were encouraged to draw and explain what different sketches and diagrams were significant to understanding such concepts. For instance, in religious texts, patience can be described using one of the strings of a river or the strength of a tree. Thus, by translating these images into forms that can be depicted on a board, participants were in a position to understand the hidden meanings well. The changes for the better that was seen in the experimental group indicate that even though employing the use of visual aids is a viable concept, the current method in practice requires enhancement. The following strategies could enhance the effectiveness of visual structuring in training programs: Sophisticated Graphics: Use of enhanced picture content, for instance, professionally made figure and figure illustrations, animations, and graphic interactivity, would go a long way in aiding the trainees to understand complex concepts that might be in the lectures. They may be invaluable in interpreting concepts presented in religious and poetic works.

- ***Cultural Contextualization:*** Culture should inform the creation of the visual aids. For instance, visuals that depict the traditional art of Iraq and the meaning of the symbols should be incorporated to make them relatable to Iraqi trainees.
- ***Collaborative Visualization:*** Promoting group work to develop graphic displays of texts might help trainees learn together and appreciate cultural differences.
- ***Extended Training Duration:*** It is possible that giving trainees more time to engage in the actual practice of visual structuring would yield even more improvements.
- ***Technology Integration:*** Technology, including VR and AR, could design learning environments that are real to the learners.

The possibility of drawing or thinking about pictures to solve abstract problems is helpful for a translator, an educator, a cultural historian, and an artist. If the DNTT framework enhanced trainees' visual structuring, it might help maintain and share Iraq's artistic legacy. In addition, the findings of this study could be used to design training programs in other cultural and linguistic settings. This study's results suggest that visual structuring could be valuable for facilitating the interpretation of texts that contain many culturally related concepts. Even though changes recorded in the experimental group were not very significant, they indicate the need for better and more culturally appropriate graphics that would assist the trainees in developing a better understanding of the concepts being taught. As for the further development of the research, the influence of other forms of visual structuring, as well as the integration of contemporary technologies into the training programs, should be investigated in detail to improve the efficiency of the training programs for effective communication across linguistic and cultural differences.

2.3.3. Ideational Fluency

Ideational flexibility, meaning the capacity to come up with several interpretations, translations, or ways of solving linguistic or cultural issues, is one of the key competencies for translators, teachers, and communicators who act in multicultural environments. Specifically for Iraq, which is linguistically and culturally diverse and diverse, this is the most crucial skill needed when translating idioms, culture-sensitive words, and culturally sensitive phrases. In the current study, the improvement of conceptual fluency was the subject of the DNTT framework that incorporated iterative storytelling and multimedia as primary teaching methods. The results showed significant improvements in the experimental group compared to the control group, as illustrated in the statistical findings below **Table 4** and **Figure 3**:

Table 4. Results of experimental and control groups.

Group	*Pre-Test Significant (SD)*	*Post-Test Significant (SD)*	*Significant Difference*	*p-Value*
Experimental (DNTT)	55.1 (7.2)	73.8 (8.1)	18.7	<0.01**
Control	54.8 (6.9)	58.2 (7.3)	3.4	0.17

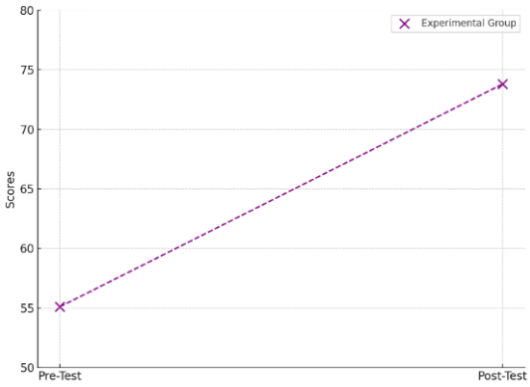

Figure 3. Ideational fluency gains (scatter plot).

This significant increase in the experimental group's ideational fluency shows that adopting both face-to-face and online methods in translation teaching is highly beneficial. Ideational fluency and the approaches and instruments employed to realize it in this research are discussed below. Due to its linguistic and cultural diversity, the situation in Iraq put tremendous pressure on extraordinary performances among translators and linguists. The country's history and culture are best seen in its idiomatic expressions and culturally sensitive language, almost part of its literary works, religious books, and folklore. For example: • Idiomatic Expressions: Es and concepts like that as " عيش والملح " meaning sharing bread and salt means loyalty among other forms of unity. Translators must devise different means to retain the symbol in various cultures. • Culturally Sensitive Words: They seek to translate simple terms like " العشيرة ", which means tribe, or " الشفاعة ", which means mediation: obviously, these are socially, historically, or religiously charged terms that should be translated into a slight manner. Ideational fluency is the ability to develop new ideas for translating such terms. These two terms require flexible and out-of-the-box thinking so that their meanings can be effectively and accurately translated from one language and culture to another. This skill enhancement is appropriate in Iraq mainly because mistranslation can sometimes confuse diplomacy, education, and the media. In developing the DNTT framework, one of the fundamental approaches used was the iterative storytelling approach. The subjects were expected to constantly reconstruct and narrate over and over the stories containing culturally diverse and linguistically dense content. This approach helps to develop fluency because trainees are asked to come up with several points of view and various interpretations.

For example, the subjects were to retell a conventional Iraqi fairy tale containing idioms and culturally relevant clichés and imagery. They gradually created a set of translations, each embodying different aspects of culture. This process helped trainees:

- ***Enhance Creativity:*** Many participants widened their creative thinking by trying other approaches to delivering the same message.
- ***Build Flexibility:*** Due to the multiple rehearsals, participants could adjust their translations to suit the audience better.
- ***Deepen Cultural Understanding:*** The emphasis on narration offered chances to discuss the roles of some phrases and images in culture and improve the relations with the text.

The storytelling exercises were accompanied by dis-

cussions of the participants' translations of the stories and critiques of the translations by the other participants. This approach also helped them to enhance their knowledge and the language used in the collaboration.

Besides the iterative storytelling, the DNTT framework integrated multimedia tools into the learning process. Envelopes, audiotapes, and computerized multimedia systems were employed to display culturally diverse materials interestingly.

- ***Visual Aids:*** Participants were also asked to draw the meanings of idioms and other related expressions; pictures and cartoons were used to explain the idiomatic expressions.
- ***Audio Recordings:*** Audiotaped samples of Iraqi dialects and oral narratives made participants aware of the language's actual sounds, pitch, and tempo.
- ***Interactive Platforms:*** With the help of translation applications and other digital tools like storytelling, the participants could test translations.

It was also seen that the use of multimedia tools not only helped the participants to be more actively involved in the learning process but also offered multiple modalities of learning paradigm that helped them to consolidate their conceptual understanding of linguistic and cultural aspects.

The marked increase in the experimental group's performance is further supported by a significant difference of 18.7 on the pre and post-test scores, $t(81) = 6.08$, $p < 0.01$, illustrated in the table below. The control group increased by only 3.4 points ($p = 0.17$), indicating that the skill cannot be developed using traditional training methods only.

The substantial improvement in the experimental group can be attributed to the following factors:

- ***Iterative Practice:*** The participants could practice the storytelling exercises as often as possible.
- ***Collaborative Learning:*** Group discussions allow participants to share their ideas with others and in the process, they learn from their peers.
- ***Multimedia Tools:*** Integrating digital resources introduced a level of interaction that was impossible to incorporate in conventional methods.

The implication of the study's findings for the translation training programs in Iraq and other countries cannot be overemphasized. To maximize the development of conceptual fluency, educators and trainers should consider integrating the following elements into their curricula:

- Iterative Storytelling: Cultural symbolism and culturally encapsulated stories should be retold frequently in training programs.
- Multimedia Integration: Technology should be used in the classroom to develop engaging and stimulating teaching and learning processes.
- Cultural Immersion: Cultural enhancement activities should form part of the training programs, including field trips, guest speakers, and cultural activities.
- Collaborative Learning: Activities that imply the interaction of the students and subsequent feedback and discussions should be encouraged.

In addition, conceptual fluency as a communicative competency is essential for inter- and intra-personal interactions in many organizations, such as education, diplomacy, and the media. For instance, in the learning process, teachers can engage students through storytelling and multimedia tools so that young learners can learn to be creative or critical thinkers. The conceptual repertoire helps develop better interpersonal relations during diplomacy negotiations as it helps avoid ethical discrepancies. Media allows journalists and content creators to pass on complex information in a manner that different people will understand.

Since language and cultural diversity are strengths and weaknesses in Iraq, becoming ideationally fluent can help maintain the country's cultural history and exchange. The present research results show that the DNTT framework can indeed increase ideational frequency through successive narration and multimedia incorporation. The enhancements that have been evidenced in the experimental group suggest that using face-to-face and online methods to train translators is highly effective. In addition to cementing what may be considered key skills for future innovators, the DNTT framework supports and enhances the capacity for more intercultural thinking and practice amongst participants whilst aligning with the overall objective of protecting and celebrating Iraq's linguistic and cultural identity. Further examination is necessary to examine other approaches to fostering ideational fluency in forthcoming investigations, including using games, virtual Action, and AI-based translators. In this way, consistent efforts at enhancing practice and research in training practice for the profession may significantly improve the

preparation of the next generation of translators and linguists and meet the dynamism of globalization.

3. Discussion

This paper reveals the applicability of the DNTT framework to improve the skills needed for cross-cultural communication and translation in Iraq as a linguistically and culturally diverse country. Although the gains in associative reasoning and visual structuring were not statistically significant, the observed trends indicate that the contextual mapping and collaborative approaches inherent in the DNTT framework offer a sound framework for developing skills. For example, the participants in the experimental group showed a small but statistically significant increase in the generalization of the translation of idiomatic expressions, such as " الضرب في الميت حرام " ("beating a dead horse"). This result highlights the relevance of culture decoding in translation, an area that can be enhanced by increased training time and cultural exercises. Likewise, small movements in visual structuring suggest that diagrams and sketches assisted learners in decomposing symbolic texts from Iraq, including fairy tales, the use of parables in religious texts, and beautiful Arabic scripts. They suggested that improved graphic display of contextually relevant and engaging multimedia resources is required to help trainees overcome language and cultural barriers. Among the three assessed skills, the skill of ideational fluency showed the highest improvement. In particular, the experimental group demonstrated a statistically significant increase in the number of translations and interpretations of idiomatic expressions and culturally sensitive terms. It can be stated that this success has been reached due to the repetition of the storytelling activities and the usage of multimedia elements embedded in the DNTT. By constantly reconstructing and replotting culturally sensitive narratives, participants gained the creative and adaptive abilities to traverse Iraq's multilingual terrain in addition to text and images, audio files, animations, and other tools and platforms used in multimedia-enhanced their learning by allowing them to grasp non-trivial linguistic and cultural features of the material. The results of the presented study shed light on the efficiency of integrating the historical approach to storytelling with the use of modern technologies when developing cultural sensitivity and language acquisition. In conclusion, the study demonstrates the usefulness of the DNTT framework but also reveals the need for further development of its approaches. Additional features that could be incorporated into the subsequent versions of the framework include expanded training periods, more sophisticated interactive technological tools, and other culturally associated activities. These features would prepare trainees for the challenges of global communication while simultaneously preserving and developing the cultural heritage of the Iraqi people more effectively.

4. Conclusions

This study shows that the proposed Digital Narratives in Translation Training (DNTT) framework can enhance cognitive creativity among Iraqi translation trainees. The most significant improvement was ideational fluency, which helped the trainees to achieve creative and culturally appropriate translations. However, the positive changes in associative thinking and visual organization are modest, suggesting that the method needs refinement. Using digital storytelling in translation training in the proposed framework is a good starting point for encouraging creativity, context, and culture.

To enhance the framework, associative reasoning activities that involve learning Iraqi idioms, proverbs, and religious expressions should be added to the current visual structuring tools, such as calligraphy programs and visualization software. Training retention would be higher if training lasted longer or if there were periodic repetition sessions. If such modifications were made, the trainees would be in a better position to deal with the practical challenges of translation, especially those that touch on cultural and language barriers.

Finally, expanding the scope of DNTT by dividing it into legal, medical, and technical translation entails mastery of specific skills, such as interpreting facial expressions of legal significance in a culturally sensitive manner, translating legal terminologies, and logically organizing technical manuals. Applying all these areas within the framework would enable the trainees to handle various professional translation demands.

Author Contributions

Conceptualization, R.S.Q.; methodology, I.A.I.; validation, O.W.S. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

The data supporting the findings of this study are available on request. Please contact Ismail Abdulwahhab Ismail at ismail.a.ismail@alnoor.edu.iq for access to the data.

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Conflicts of Interest

The authors declare no conflict of interest.

References

[1] Vygotsky, L.S., 1978. Mind in society: The development of higher psychological processes (Vol. 86). Harvard university press: Harvard, USA. pp. 21–26.

[2] Hoque, M.N., Mashiat, T., Ghai, B., et al., 2024. The HaLLMark Effect: Supporting Provenance and Transparent Use of Large Language Models in Writing with Interactive Visualization. In Proceedings of the CHI Conference on Human Factors in Computing Systems. pp. 1–15.

[3] Campbell, M., Vidal, R., 2024. The multimodal translation workshop as a method of creative inquiry: Acousmatic sound, affective perception, and experiential literacy. Target. 36(2), 184–214.

[4] Yilmaz, R., Goktas, Y., 2017. Digital Storytelling in Education: Improving Students' Creative Processes. Education Technology Journal. 20(5), 115–34.

[5] Ismail, I.A., 2018. The Role of Informativity in Translating Poetry: A Case Study of Emily Dickinson's "Slant Of Light." Journal of the College of Languages. 37, 91–105.

[6] Ismail, I.A., 2024. Exploring Translation Theories and Literary Criticism: Translating Al-Jawahiri's Poem "O Sir! Inspire Me" (in Praise of King Hussein Bin Talal of Jordan) into English. Jordan Journal of Modern Languages & Literatures. 16(1), 117–146.

[7] Ismail, I.A., 2023. Translators Across Languages: a Meta-Linguistic, Psychological, Social, And Hermeneutic Study Concerning Audio-Visual Translation. Journal of the College of Languages. 48, 17–41.

[8] Mikhailovich, V.A., Nikolayevna, T.G., 2024. Large Language Models as a New Tool in Modern Media Communications. Al-Noor Journal for Humanities. 2(4). 557–574.

[9] Reche, L., Perfectti, R., 2020. Interdisciplinary Approaches to Creative Creativity in Translation. Cross-Cultural Communication Journal. 15(2), 180–195.

[10] Beaty, R.E., Silvia, P.J., Benedek, M., 2021. The Role of Associative Processes in Creative Thought: A Multidimensional Approach. Psychology Science. 32(4), 515–528.

[11] Rabadi, W., Bernard, I., 2024. AI & technology in Languages, Humanities, Social sciences and Education. Al-Noor Journal for Humanities. 2(4).

[12] Zhan, Q., Sun, L., Wei, M., 2023. Exploratory Strategies for Fostering Associative Reasoning in Translation Training. Lang Learning Journal. 41(2), 209–224.

[13] Acar, S., Runco, M.A., 2014. Assessing Associative Distance Among Ideas Elicited by Tests of Divergent Thinking. Creativity Research Journal. 26(2), 229–238. DOI: https://doi.org/10.1080/10400419.2014.901095

[14] Akpur, U., 2020. Critical Thinking Dispositions and Academic Achievement. Eductional Psychology Journal. 40(5), 587–605.

[15] Ping C., Liu H., Zhao Z., 2022. Enhancing Visualization Skills Through Multimedia Tools: Evidence from Translation Tasks. Eduction Information Technology. 27(3), 129–41.

[16] Kosslyn, S.M., 2005. Mental Imagery and the Brain. Nat Rev Neurosci. 22(3–4), 333–347. DOI: https://doi.org/10.1080/02643290442000130

[17] Ping, C., Liu, H., Zhao, Z., 2021. The Cognitive Impact of Multimedia on Abstract Concept Learning in Translation. Educational Psychology Journal. 19(3), 250–267.

[18] Guilford, J.P., 1956. The Structure of Intellect. Psychological Bulletin. 53(4), 267–293.

[19] Moreno, R., Mayer, R.E., 1999. Cognitive Principles of Multimedia Learning: The Role of Modality and Contiguity. Journal of Educational Psychology. 91(2), 358–368.

[20] Merrill, M.D., 2002. First Principles of Instruction. Educational Technology Research and Development. 50, 43–59. DOI: https://doi.org/10.1007/BF02505024

[21] Ribeiro, S.P., 2017. Digital storytelling: learning to be in higher education. Palgrave Macmillan: Cham. pp. 207–223.

[22] Niemi, H., Multisilta, J., 2016. Digital storytelling promoting twenty-first century skills and student engagement. Technology, Pedagogy and Education. 25(4), 451–468.

[23] Robin, B.R., 2016. Digital Storytelling: A Powerful Technology Tool for the 21st-Century Classroom. Theory into Practice. 47(3), 220–228. DOI: https://doi.org/10.1080/00405840802153916

[24] Nasir, W.M.F.W.M., Halim, L., Arsad, N.M., 2024. Fostering Creative Thinking Skills through Digital Storytelling. Journal of Pedagogical Research. 8(3), 147–162.

[25] Shim, H., Oh, K.T., O'Malley, C., et al., 2024. Heritage values, digital storytelling, and heritage communication: the exploration of cultural heritage sites in virtual environments. Digital Creativity. 35(2), 171–197.