

# Infographic English Literature Textbook: Faster and Better in Function Educational Material in the Disruptive Digital Age

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**Abstract**—In the era of disruptive digital advancements, all institutions must undergo significant transformative changes across all facets, education included. Within the university setting, educators must increasingly embrace media and technology. Similarly, students require educational resources that are more accessible, swifter, and more efficient. To meet the evolving expectations of students and to enhance the efficacy of learning, this research project seeks to create an infographic educational resource for the literature course 146345 Prose, offered as part of the bachelor's degree in English at the University of Phayao. Upon completion of the study, the findings indicated that students expressed high satisfaction with the infographic textbook, with an average score of 4.5. This positive feedback resulted in a heightened comprehension of the text, evident through an average achievement test score increase from 8.34 to 17.92.

**Index Terms**—infographic textbook, literature, educational material, disruptive age

## I. INTRODUCTION

The number of students learning foreign languages has been increasing consistently. Even though, in the present, people undergo the COVID-19 pandemic which leads to disruption in various businesses including education, the higher education curriculum in English has never declined its popularity. The students enroll in the curriculum aiming to achieve their English skills for their future use within four years. During their four-year study period, the student's skills in communication, linguistics, translation, and literature aim to be mastered. This is because the committee establishing Thai Qualification Framework for Higher Education believes that these skills can complete the students' language acquisition and are essential for their future profession.

In enhancing students' English skills, literature courses are believed to be one of the important factors. Brumfit (1981) states that literature can help students develop English skills, especially reading, because "literature is a rich and widely appealing source of material for reading" (p. 105). Apart from developing reading skills, Parkinson and Thomas (2000) believe that literature offers students the chance to enhance their cognitive abilities and broaden their understanding of language and real-life situations, by delving into the experiences of others and grappling with complex issues. However, most students enrolling in literature courses lack enthusiasm for studying literature. This is because they encounter difficulties in studying. Al-Mahroqi and Al-Wahaibi (2012), claim that students' difficulties arise from the students' "deficient proficiency in English and their poor reading skills" (p. 78). Brumfit (1981), on the contrary, believes that students' basic understanding of the language is not the only factor in studying literature. He believes that a strong ability to interpret ideas is also needed.

The problem stated by Al-Mahroqi and Al-Wahaibi (2012) and Brumfit (1981) perfectly presents the situation our students confront. University of Phayao was aimed primarily at solving the problem concerning the low level of education; as a result, educational opportunities have been distributed to every student in all remote areas. We welcome all students without due regard to their proficiency and skills in English. These students must work hard to develop their skills. However, only one year seems not to be enough for them to acquire language proficiency to the level that they can appreciate the beauty of literary pieces or understand complicated issues.

To help the students to overcome these difficulties, the teachers not only have to enhance the student's language proficiency, but I believe that the student's comprehension of the lessons can also be provided through effective educational material used in the class. According to Wyles (2016), a textbook is an important material that should be developed. This is because it serves as a valuable tool in the ongoing endeavor to motivate students to actively participate in classroom activities and facilitate their engagement with specific aspects of a foreign language. The very same idea is also stated by Cruishshank et al. as cited in Guha et al. (2017) that textbooks are essential because they play a crucial role as a valuable resource for educators in facilitating student learning.

In the disruptive digital age, students seem to expect faster and better-functioning material. This makes infographic educational material or textbooks one of the most interesting choices for both teachers and students. According to Naparín and Saad (2017), infographic material has two prominent advantages. The first one deals with its ability to draw students' attention. Naparín and Saad explain that the way infographic presents complex information visually through visualization, colors, and images helps draw the student's attention better than plain texts. Moreover, an

infographic is also a good tool to enhance students' ability to learn new and complex things, because it "can transfer knowledge about a topic faster and more effectively than pure text" (p. 15).

As a result, the researcher is interested in developing the 146345 Prose infographic textbook which can draw students' attention and satisfaction as well as help them comprehend complicated issues presented in the lessons.

## II. LITERATURE REVIEW

### A. *Studying and Teaching Literature*

In EFL or ESL classes, teachers' major concern is to master their students' ability to communicate. In doing so, Savvidou (2004) presents, teachers aim to expose their students to a diverse range of discourses. This includes expressive forms like letters and diaries, which allow for personal expression. Additionally, they introduce transactional discourses, centered around readers and messages, such as advertising, business letters, editorials, and instructions. However, the one that seems to be the most problematic type of discourse in EFL or ESL class is poetic. According to Savvidou, poetic discourse refers to a type of communication that prioritizes form and language, encompassing drama, poetry, novels, and short stories. She argues that teaching about poetic discourses presents challenges as it demands more than just the students' capability to grasp the structures and forms of language. Apart from linguistic ability, it is also necessary for the students to acquire "the ability to interpret discourse in all its social and cultural contexts" (p. 1).

Brumfit (1981) introduces quite the same idea as Savvidou. He believes that literature is very important, especially in EFL or ESL classes, but it is also the most difficult one. He holds the view that literature classes can assist students in mastering their skills, particularly in reading. However, the students who enjoy literature class are more likely those whose understanding of the language as well as their ability to interpret ideas is profound.

This kind of problem concerning teaching and studying literature happens around the world. According to Parkinson and Thomas (2000), Omani students face problems in studying literature because they cannot relate the text to its context. As a result, the interpretation of the literary text seems to be impossible for them. The same situation seems to happen also in Saudi Arabia. Nelson et al. (2019) claim that studying literature in most Arab institutions "is a daunting task for both the instructors and learners" (p. 937). They believe that this happens because they lack the linguistic and cultural background of English Literature.

Difficulty in studying literature for EFL or ESL students is not caused only by the subject's complexity but it is also arisen by the dull and lifeless literature textbook. According to the questionnaire about textbook selection distributed to 1871 undergraduate American students by Landrum and Hormel (2002), it is found that textbook selection is a very important factor contributing to the achievement of the class. The more experienced the instructors are, the more they place great importance on visualization: graphs, colors, and images. Biden and Beheshti (2017) explain that visualization tends to be used by experienced instructors in the educational sphere because these visualizations or infographics can "illustrate the complex information in a compact form" (p. 101).

Kartal and Arikan (2010) agree with Landrum and Hormel's idea. They oppose studying literature by totally relying on pure and plain textbooks. They suggest all teachers, especially those in the world of the fast proliferation and improvement of information and communication technologies, allow for the use of technologies such as audio and visual materials. It is found that the students who have a chance to use technology take more responsibility in their activities because these activities catch their interest. Moreover, by transferring their research into different types of visual and audio applications, the students also can develop their creativity.

### B. *What is an Infographic?*

Kulenović (2022) defines infographics as graphic visual representations that aim to convey information, data, or knowledge efficiently and clearly. She adds that the combination of text and images is carefully designed for better data comprehension. Additionally, infographics can convey messages swiftly by streamlining the presentation of extensive data and facilitating the identification of data patterns and relationships. Kulenović believes that these kinds of representations are very suitable for today's fast-paced world where there is a high demand for quickly processing a substantial amount of information. To elaborate on this point, Kulenović refers to Smiciklas's idea proposed in 2012 explaining how the human brain works. According to Smiciklas, roughly half of the brain's capacity is allocated to visual processing. Moreover, the brain processes visual information holistically, while text is processed sequentially. In other words, the brain can decode visual images better and faster than text alone. Kulenović also emphasizes the efficacy of infographics by referring to Mawhinney (2018). Mawhinney proposes the result of the studies concerning information transmission during the process of enacting directions. It is revealed that individuals who receive directions accompanied by both text and illustrations outperform those who receive text-only instructions by a significant margin of 323%. Being a powerful tool of communication, infographics become the center of interest. Kulenović posits that the worldwide attention began around 2009 and reached its peak in 2020 as demonstrated by Google searches.

To craft effective infographics, Rajamanickam (2005) suggests a sequence of four crucial stages: planning, designing, reviewing, and finalizing. During the planning phase, creators need to address two key inquiries: the project's objective and its significance. Consequently, the project's subjects, objectives, and goals must be established. Subsequently, attention should be given to contextualizing, structuring, constructing the narrative of the infographics, determining

essential components, and devising both informational and visual concepts. Moving to the design stage, creators should adhere to the established plan. When it comes to tools, a decision must be made regarding the use of professional software, online utilities, or outsourcing. In terms of content, simplicity is paramount, requiring creators to design in the most straightforward manner. Rajamanickam emphasizes that reviewing infographics before publishing is very necessary and if it is possible infographics ought to undergo testing with various specialists. In the final step, the infographic is finalized and made public.

### *C. Infographics Guided by Theories of Second Language Acquisition*

To explain how infographic textbook possibly leads to students' better comprehension, especially in the classroom, it is necessary to refer to a second language acquisition theory, and the theory that possibly explains how infographic works well with students' process of acquiring knowledge is the cognitive theory of multimedia learning. The cognitive theory of multimedia learning or CTML was proposed by Mayer (1997, 2001). Mayer puts forward his fundamental idea that combining words and images enhances learning effectiveness compared to using words alone. To illustrate his point, Mayer (2001) describes the brain's information processing through two distinct channels: one for visual content, which encompasses images, videos, charts, and printed words. The second channel, known as the auditory-verbal channel, is responsible for processing auditory content, encompassing spoken words within a narrative and other non-verbal sounds. Mayer posits that human understanding entails employing these two separate channels and memory routes. During the understanding process, the simultaneous tasks of retaining and handling information within working memory generate a burden often known as cognitive load. Sweller (2008) outlines that there are three categories of cognitive load. The inherent intricacy of the information being processed gives rise to an intrinsic cognitive load that cannot be diminished without affecting the learner's comprehension. The other two types of cognitive load, which can be controlled, are extraneous and germane. Extraneous cognitive load is both superfluous and excessive and should be minimized, whereas germane pertains to an optimal cognitive load that doesn't overwhelm working memory and facilitates the transfer of new information into long-term memory. In the case that the lesson is intricate, the inherent cognitive load will be significant. However, if the lesson is structured incorporating both visual elements like pictures and diagrams alongside text-based instructions, both will be handled within the visual channel of working memory. Sweller insists that the simultaneous presence of both visual instruction formats, alongside the substantial intrinsic load, may result in an extraneous cognitive load, indicating a learner who is overwhelmed. To avoid an extraneous load, we need to transform text-based instructions into audio-based instructions. With this strategy, the learner will concurrently handle images and diagrams in the visual channel of working memory while processing audio instructions in the auditory channel of working memory. This reduction in extraneous cognitive load enables learners to manage the substantial intrinsic load more effectively, utilizing their expanded working memory capacity.

However, CTML researchers believe that not all visual and multimedia presentations are effective for learners. Sorden (2012) suggests that designers should consider and incorporate strategies for crafting instructional multimedia content that supports efficient learning for learners. In 2010, Mayer puts forth a set of 12 instructional principles that should be taken into account during the design of educational multimedia. These principles are categorized according to three instructional design objectives which are, "reducing extraneous processing, managing essential processing, and fostering generative processing" (p. 547). Based on CTML, the infographic learning material can minimize cognitive load because it visualizes the textual input and allows working memory to bypass redundant text processing and instead concentrate on the visual information conveyed through infographics.

### *D. Infographics in Education*

Researchers investigating infographics or visualized learning tools often report positive outcomes. The primary topic of discussion often revolves around how infographics can streamline intricate information, making it more accessible and comprehensible for students (Abilock & William, 2014; Kaya-Hamza & Beheshti-Fezile, 2017). Clark and Lyons (2010) also reveal how infographics reinforce students' understanding, but they do not focus on the process of simplification as others do. They argue that infographics can boost students' understanding by piquing their curiosity and encouraging them to engage with the text for more extended periods compared to other materials. Clark and Lyons also add that by enhancing the grasp of the content and message, learners are also able to retain information over an extended period. The outcome concerning students' ability to remember was also revealed in Yildirim's study conducted in 2016. The result of the study showed that engaging with educational information conveyed via infographics results in lasting learning and a high retention rate.

Kaya-Hamza and Beheshti-Fezile (2017) discuss other advantages of infographics in education by referring to Borucu's ideas presented in 2015. Firstly, it is believed that visuals can effectively convey the significance of the subject taught in class in a straightforward and easily understandable manner. Secondly, infographics enrich students' learning experiences by presenting a wealth of knowledge, ideas, and concepts in a user-friendly format. Finally, infographics facilitate the development of students' critical thinking abilities and help them organize their thoughts. Lastly, they aid in better retention and recall of information throughout the learning process.

### III. RESEARCH METHODOLOGY

#### A. *Developing Infographic Literature Textbook for 146345 Prose*

In the initial phase of the project, the focus was on making a comprehensive plan to guide the development of the literature textbook. This involved several key steps, beginning with a careful analysis of the course description outlined in the curriculum. By aligning the content of the textbook with the themes and objectives specified in the curriculum, the researcher ensured that the material was both relevant and tailored to the needs of the students. In addition, a clear target for the literature textbook was identified during this planning phase. Defining the intended audience, their level of comprehension, and their educational background helped shape the content and style of the textbook. This step was crucial in ensuring that the material resonated effectively with the learners and supported their educational journey. Furthermore, this planning phase included the task of identifying suitable infographic types. Infographics offered an engaging visual means to convey complex concepts and information. By determining the most appropriate types of infographics for the content, the researcher also tried to enhance the overall learning experience and facilitate a deeper understanding of the literary concepts presented in the textbook.

The next phase of the project involved the meticulous design of the textbook in accordance with the previously established plan. This step encompassed organizing the content in a structured and engaging manner, incorporating relevant visuals and examples to enhance the learning experience.

Subsequently, a thorough proofreading process was undertaken to ensure the accuracy and quality of the content. This was complemented by a content validity assessment carried out by subject matter experts. The assessment utilized a 5-point Likert scale, ranging from "Outstanding" to "Poor," to gauge the excellence and appropriateness of the material. This feedback-driven approach guaranteed that the textbook achieved a high standard of clarity and effectiveness.

Once the design and validation stages were complete, the textbook was ready for practical implementation in the classroom. This marked a pivotal point where the material was used, allowing students to engage with the content in a real-world learning environment. This application phase provided valuable insights into the textbook's effectiveness and served as a foundation for potential improvements in subsequent iterations.

#### B. *Students' Comprehension of the Content Investigation*

To evaluate students' capacity to grasp intricate concepts, a systematic approach that encompasses several key steps is involved. Firstly, pre-test and post-test assessments were thoughtfully designed to gauge the participants' comprehension before and after engaging with the material. To ensure the accuracy and dependability of the assessment tool, a thorough evaluation of its validity and reliability was conducted. This step safeguards the integrity of the data collected and the subsequent analysis. With a validated assessment tool in hand, the tests were administered to the participants, allowing us to measure their progress and understanding accurately. Subsequently, the collected data underwent a comprehensive analysis.

#### C. *Students' Perceptions Investigation*

The subsequent phase delves into exploring students' perceptions. To begin, a questionnaire was thoughtfully crafted, utilizing the Likert scale, to gauge participants' perspectives comprehensively. Ensuring the credibility and consistency of the questionnaire was paramount, and as such, a thorough assessment of its validity and reliability was undertaken. Once the validated questionnaire was prepared, it was administered to the participants, thereby eliciting their valuable perceptions. Following this, a meticulous analysis of the gathered data was conducted. This analysis unveiled a deeper understanding of students' viewpoints which in turn informs ongoing enhancements in the educational methodology and content delivery.

#### D. *Participants*

The researcher developed an infographic textbook for 146345 Prose which is a subject designed for second-year students as a part of their Bachelor Degree of Arts in English, University of Phayao. Then the tests and questionnaire were designed and applied to the 50 second-year English major students who enrolled in 146345 Prose in the first semester of the academic year 2022.

The data was collected after being approved by Ethical Considerations Involved in Research on Human Subjects of University of Phayao Human Ethics Committee. The initial steps involved ethical considerations. The researcher began by seeking ethical approval, a vital process to ensure the study's adherence to ethical guidelines. Subsequently, upon receiving the necessary ethical clearance, the researcher introduced herself to the participants and transparently outlined the study's objectives. To ensure participant consent, the approved consent form, sanctioned by the University of Phayao Human Ethics Committee, was employed. This step exemplifies the commitment to upholding ethical standards and respecting participants' autonomy. Finally, participants were engaged in a comprehensive process, involving the review of the infographic literature textbook, as well as the completion of tests and a questionnaire. This holistic approach facilitates a robust understanding of their perspectives and insights while maintaining ethical rigor throughout the study. The data was kept for three years. The digital information was transferred into a computer that requires a

password for access. The physical printout of the information was destroyed using a document shredder, and the digital files were subsequently removed.

#### E. Data Analysis

The collected quantitative data was analyzed by average values to determine the influence and perception towards utilization of infographic teaching material in higher education literature textbook.

### IV. RESEARCH RESULT AND DISCUSSION

#### A. The Validity of the Textbook

Three experts who hold doctoral degrees in English and Education assessed the validity of the textbook and employed a 5-point Likert scale, spanning from "Outstanding" "Very Good" "Good" "Fair" to "Poor," in the following aspects: textbook design, the appropriate and up-to-date content, the coherence of the content and the usefulness to measure the quality and suitability of the textbook. The results of the validity test from the experts showed that the textbook gained an average score of 4.26 which means that the textbook's quality is very good and proper to be used in the classroom. The result obtained as follows:

TABLE 1  
THE VALIDATION RESULT

Aspect	Average Score	Criteria	Judgement
Design	4.33	Very Good	Proper to be used
Appropriate Content	4.33	Very Good	Proper to be used
Up-to-date Content	4	Very Good	Proper to be used
Coherence	4.33	Very Good	Proper to be used
Usefulness	4.33	Very Good	Proper to be used

#### B. Students' Comprehension of the Content Investigation

To investigate the students' comprehension of the learning content enhanced by the infographic textbook, a set of pre and post-achievement tests were given to 50 second-year English major students who enrolled in 146345 Prose in the first semester of the academic year 2022. The pretest was distributed before the students interacted with the material and the posttest was circulated after their engagement. The result revealed as follows:

TABLE 2  
AVERAGE SCORE AND STANDARD DEVIATION FOR PRE AND POST-ACHIEVEMENT TEST

Population	Size	Pretest		Post-test	
		Average	SD	Average	SD
2nd-year students	50	8.34	2.81	17.92	1.76

According to the table, the average score of the students in the pre-achievement test is 8.34 and the post-test is 19.92 with a difference of 9.58 in favor of the post-test. This result indicated that the infographic may be distributed to students' academic achievement in the class.

#### C. Students' Perceptions Investigation

The data concerning students' satisfaction with the Prose infographic textbook was obtained by the 5-point Likert scale questionnaires which were administered to 50 students. The questionnaire was divided into three parts concerning the students' perception of the textbook design, its content, and its utility respectively. The result showed that the students have a positive attitude towards the infographic textbook in all aspects with an average score of 4.45. The highest average score belongs to the textbook's utility (4.48), then the content (4.45) and the design (4.41) as follows:

TABLE 3  
AVERAGE SCORE FOR STUDENTS' SATISFACTION OF TEXTBOOK'S DESIGN

Aspect	Average Score
The visual design aligns with the content.	4.54
The illustrations in the textbook are clear.	4.52
There is creativity in the design of the textbook.	4.48
The use of colors in the textbook is suitable.	4.44
The imagery enhances and reinforces understanding of the lesson.	4.42
The design of the textbook is aesthetically pleasing.	4.40
The layout is appropriate for educational content.	4.40
The typography in the textbook is easy to comprehend.	4.40

According to Table 3, the students were very satisfied with two aspects which concerned how the design aligns with the content (Average score = 4.54) and its illustration (Average score = 4.52); while other aspects obtained a satisfied level (Average score = 4.48, 4.44, 4.42 and 4.40 respectively). The typography of the textbook is the aspect the least likely of all aspects they appreciate (Average score = 4.40).

TABLE 4  
AVERAGE SCORE FOR STUDENTS' SATISFACTION OF TEXTBOOK'S CONTENT

Aspect	Average Score
The content of the textbook aligns with the learning objectives of the subject.	4.52
The subject matter is organized sequentially.	4.46
The content is coherent throughout the entire topic.	4.42
The content in the textbook is engaging.	4.42
The content is divided appropriately.	4.32
The lesson content in the educational media is easy to understand.	4.32

Table 4 revealed the students' satisfaction with the textbook's content. The result was shown in the same manner as the student's perception of the textbook's design. That is, the result varied from very satisfied to satisfied level. In this part, the only issue that gained great satisfaction from the students was how the content of the textbook aligns with the learning objectives of the subject (Average score = 4.52); whereas other aspects of the textbook's content attained a satisfied level (Average score = 4.46, 4.42 and 4.32 respectively).

TABLE 5  
AVERAGE SCORE FOR STUDENTS' SATISFACTION OF TEXTBOOK'S UTILITY

Aspect	Average Score
The textbook can be used effectively in the classroom.	4.62
The textbook is suitable for learners.	4.52
The textbook leads to students' better comprehension.	4.50
The textbook is beneficial for learning and practical.	4.46
The textbook helps learners remember the content better.	4.32

The highest average score gained in this part revealed the students' very positive attitude towards the infographic textbook. They strongly believed that the textbook could be used effectively in the classroom (Average score = 4.62). They also firmly claimed that the book is very suitable for them as learners and could lead them to a better comprehension of the content (Average score = 4.52 and 4.50 respectively). The textbook's practicality and its function in enhancing learners' ability to memorize were less satisfied. These two aspects gained only a satisfactory level with an average score of 4.46 and 4.32.

In the last part of the questionnaire, the researcher left the area for the students to write down their further suggestions and comments they might have about the requirement of the literature textbook used in their class. There were 20 students out of 50 giving some suggestions and comments to the researcher and 60% of these 20 students gave their comments concerning the overwhelming content and letters of the literary textbook. They claimed that the textbook with loads of letters made them bored. They believed that the textbook with the short phrases and summarized content might help them more in memorizing and understanding. Moreover, another 40% of the students talked about how pictures and graphics could help them in learning. They believed that pictures and graphics could increase the student's interest and their ability to comprehend the complicated content in the class.

## V. CONCLUSION

In the disruptive digital age, every institution needs dramatically transformative changes in every aspect including the educational one. In the university, teachers must rely more on media and technology; in the same way, students need educational materials that are easier, faster, and more effective. To fulfill the changing attitude of the students and achieve the effectiveness of the study, this study aims to develop an infographic educational material for 146345 Prose, a literature subject in Bachelor Degree of Arts in English, University of Phayao. After conducting the research, the result showed that the students felt very satisfied with the infographic textbook, and this led to the students' better understanding of the text which can be seen by the average score on the achievement test which increased from 8.34 to 17.92.

However, this research focused only on the development of the textbook, the students' satisfaction, and their better understanding after engaging with the infographic material. The researcher did not include the investigation on how infographic material can enhance student's responsibility as proposed by Kartal and Arikan's (2010) idea or how infographic textbooks can develop students' critical thinking and memorization as presented in Kaya-Hamza and Beheshti-Fezile (2017). As a result, it will be beneficial if there is research studying the other possible advantages of the infographic textbook so that a better understanding of the infographic education material can be gained.

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## REFERENCES

- [1] Abilock, D., & Williams, C. (2014). Recipe for an infographic. *Knowledge Quest*, 43(2), 46-55.

- [2] Al-Mahroqi, R., & Al-Wahaibi, T. (2012). EFL student attitudes towards studying literature at a higher education institution in Oman. *European Journal of Social Sciences*, 32(1), 77-83.
- [3] Biden, H., & Beheshti, M. (2017). The psychological impact of infographics in education. *BRAIN: Broad Research in Artificial Intelligence and Neuroscience*, 8(4), 99-108.
- [4] Borucu, A. (2015). *Güzel Sanatlar Liselerinde Grafik Dersinin İşlenişinde İnfografik'in, Öğrenme Yöntemine Katkısı*. Süleyman Demirel Üniversitesi. Yüksek Lisans Tezi, Süleyman Demirel Üniversitesi, Isparta. Cited in Kaya-Hamza, A. T. O. S., & Beheshti-Fezile, F. S. M. (2017). An investigation toward advantages, design principles and steps of infographics in education. *Il Ponte*, 73(7), 157-166.
- [5] Brumfit, C. J. (1981). *Language and literature teaching: from practice to principle*. Pergamon Press.
- [6] Clark, R. C., & Lyons, C. (2010). *Graphics for learning: Proven guidelines for planning, designing, and evaluating visuals in training materials*. John Wiley & Sons.
- [7] Guha, R., Hyler, M. E., & Darling-Hammond, L. (2017). The power and potential of teacher residencies. *Phi Delta Kappan*, 98(8), 31-37.
- [8] Kartal, E., & Arıkan, A. (2010). A recommendation for a new Internet-based environment for studying literature. *Online Submission*, 7(7), 93-99.
- [9] Kaya-Hamza, A. T. O. S., & Beheshti-Fezile, F. S. M. (2017). An investigation toward advantages, design principles and steps of infographics in education. *Il Ponte*, 73(7), 157-166.
- [10] Kulenović, B. K. (2022). Employing students' creativity and computer skills: using infographic-creation as a tool in business English classes. *Journal of Teaching English for Specific and Academic Purposes*, 10(1), 159-170.
- [11] Landrum, R. E., & Hormel, L. (2002). Textbook selection: balance between the pedagogy, the publisher, and the student. *Teaching of Psychology*, 29(3), 245-248.
- [12] Mawhinnney, J. (2018). 45 visual content marketing statistics you should know in 2018. <https://blog.hubspot.com/marketing/visual-content-marketing-strategy>. Cited in Kulenović, B. K. (2022). Employing students' creativity and computer skills: using infographic-creation as a tool in business English classes. *Journal of Teaching English for Specific and Academic Purposes*, 10(1), 159-170.
- [13] Mayer, R.E. (1997). Multimedia learning: are we asking the right question? *Educational Psychologist*, 32(1), 1-19.
- [14] Mayer, R.E. (2001). *Multimedia learning*. Cambridge University Press.
- [15] Nelson, D., Salmeen, A. S., & Alyalak, S. (2019). Challenges facing English language Saudi students when studying literature courses in English language programs at the undergraduate level: Problems and recommendations. *American Journal of Educational Research*, 7(12), 930-938.
- [16] Naparin, H., & Saad, A. B. (2017). Infographics in education: Review on infographics design. *The International Journal of Multimedia & Its Applications (IJMA)*, 9(4), 15-24.
- [17] Parkinson, B., & Thomas, H. R. (2000). *Teaching literature in a second language*. Edinburgh University Press.
- [18] Rajamanickam, V. (2005). *Infographics: handout*. National Institute of Design.
- [19] Savvidou, C. (2004). An integrated approach to teaching literature in the EFL classroom. *The Internet TESL Journal*, 10(12), 1-6.
- [20] Smiciklas, M. (2012). *The power of infographics: Using pictures to communicate and connect with your audiences*. Que Publishing. Cited in Kulenović, B. K. (2022). Employing students' creativity and computer skills: using infographic-creation as a tool in business English classes. *Journal of Teaching English for Specific and Academic Purposes*, 10(1), 159-170.
- [21] Sorden, S. D. (2012). The cognitive theory of multimedia learning. *Handbook of educational theories*. Information Age Publishing.
- [22] Sweller, J. (2008). Human cognitive architecture. *Handbook of research on educational communications and technology*. Routledge.
- [23] Wyles, C. (2016). "Patience, please" Vocally disruptive behaviours in dementia care. *Journal of Language Aggression and Conflict*, 4(1), 90-113.
- [24] Yildirim, S. (2016). Infographics for educational purposes: Their structure, properties and reader approaches. *Turkish Online Journal of Educational Technology-TOJET*, 15(3), 98-110.



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