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A Survey of College Students' Use of Pictorial Storybooks for English Learning: A Case of Fu Jen Catholic University

Chien-Tai Hsu[1], Lih-Juan ChanLin[2], Te-Lien Chou[3]

Abstract

Conventional approaches to teaching and learning English can lead to pressure and create obstacles for learners. Using pictorial storybooks for English learning might offer students motivation to learn English. This study aimed to study several issues related to college students' English learning, including reactions to barriers to English learning, reactions to pictorial storybooks for supporting English learning, essential characteristics of pictorial storybooks, expectations of library acquisitions and promotion of pictorial storybooks, and the design of pictorial storybooks. The subjects of the study were undergraduate students at Fu Jen Catholic University. A questionnaire with a 5-point Likert scale was employed to assess students' responses. According to the 253 data gathered, the majority of students spent less than 1 hour per week on English learning, and they preferred visual and kinesthetic learning. The English learning barrier with the highest rating was limited lexical resources. Results reflect several points, namely the importance of integrating English pictorial storybooks to ensure enjoyment of knowledge acquisition, applicable length and amount of content for learning, expectations of multicultural topics, and appropriate design of English pictorial storybooks for supporting reading. Several suggestions are provided for fostering learning enjoyment and fulfilling students' needs in visual and kinesthetic learning. Library development and the promotion of pictorial storybooks regarding multicultural topics are also suggested.

Keywords: Pictorial Storybooks; Storybooks; English Learning; Collections of Pictorial Storybooks; Second Language Acquisition

1. Introduction

As global learning gains prominence worldwide, English learning is becoming important in diverse settings, including universities, professional training, and K-12 education. To follow the trend of globalized learning, authorities in many countries are providing leadership and are gradually moving towards a "bilingual education nation" setting (Ferrer & Lin, 2024). In higher education in many countries, English is a compulsory course. Students need to reach a certain level of English proficiency to fulfill the requirements. In Taiwan, "Bilingual 2030" was launched by the government for the younger generations to achieve English proficiency and international mobility. At the university level, it is necessary that students achieve the required English proficiency, with communication skills and global perspectives on formal international

[1] Municipal Wu Chang Elementary School, Taipei, Taiwan
[2] Department of Library and Information Science, Fu Jen Catholic University, New Taipei City, Taiwan
[3] Department of English and Literature, Fu Jen Catholic University, New Taipei City, Taiwan
* Corresponding Author: Lih-Juan ChanLin, E-mail: lins1005@mail.fju.edu.tw

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opportunities in their future job market. With a policy of fostering global competitiveness, the bilingual curricula in universities must be extended to professional courses (National Development Council, 2021).

Differing from traditional approaches to learning English, many universities have advocated for an EMI (English as a medium of instruction) curriculum in professional subjects including medical, philosophical, economic, and embedding English content and learning activities in diverse professional fields into university curricula to revitalize course content (Dearden, 2014; Kao, 2024). EMI courses also advance the progress of English learning in universities and institutions to engage students in learning different subjects and to motivate them to learn (Iwaniec & Wang, 2023; Le & Nguyen, 2023). The EMI approach is expected to enhance English learning in a more positive way by helping learners develop professional skills (Dang et al., 2013).

In the past, Second Language Acquisition (SLA) has extensively discussed English learning difficulties faced by college students (e.g., Amoah & Yeboah, 2021; Miles et al., 2016; Purwanto et al., 2021). The lack of knowledge of lexical resources and dialogue practices also frustrate students with communication problems in SLA (Y. Chen, 2005). Without practicing higher level learning strategies, students can only learn English by memorizing. As a result, they are unable to enhance their learning as expected (J. Liu, 2008).

In line with lexical processing, Suriyatham and Paisart (2018) suggested the use of pictorial storybooks as an effective lexical approach to English learning. The implementation of "pictorial input" enhances students' retention of vocabulary. Pictorial storybooks, including the elements of imagery, pragmatic function, simple manipulation, and contextual topics, can not only trigger students' imagination, but also help them to keep the lexical resources in mind.

The use of pictures and graphics is considered an effective approach for conveying meaningful interpretation to enhance listening comprehension in English learning (Mukarrama et al., 2022). Pictorial storybooks facilitate imagination and thinking processes in English listening comprehension, helping students relate the content to things they are already familiar with. With visual aids, students can comprehend English learning content more easily (Mukarrama et al., 2022; Suriyatham & Paisart, 2018). Associating reading materials with pictures also encourages students to comprehend the text descriptions and reflect on the reading content, making them more confident in reading (Alesandrini, 1984; Tee, 2025). To motivate college students, the use of children's pictorial storybooks has been discussed as a way to enhance their English learning (Huang, 2015). As they convey meaningful interpretation to support listening comprehension and vocabulary learning, the use of pictorial storybooks provides interest and meaningful interpretation to engage students in English learning (Mukarrama et al., 2022; Suriyatham & Paisart, 2018) Several studies have adopted pictorial storybooks to help college students with their English learning (Lee, 2015; Wu, 2017; Zhu, 2022). However, there might be debates among academic libraries about the development of pictorial storybooks due to concerns about the core purpose of academic libraries for providing resources appropriate to support research and teaching (Hurst et al., 2017).

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Most studies about pictorial learning are conducted among children at younger ages. However, little research has been conducted on the use of pictorial storybooks to support college students' English learning. Therefore, college students' use of pictorial storybooks for learning English was studied. The research questions raised in this study are listed as follows:

(1) How do students react to barriers to and difficulties in English learning?
(2) How do students react to the positive influences of using pictorial storybooks for English learning?
(3) What are the essential characteristics of pictorial storybooks?
(4) What are the students' expectations of library acquisitions and promotion of pictorial storybooks to encourage English learning?
(5) What are the students' expectations of the design of pictorial storybooks?
(6) Are there differences in responses among students with different levels of English proficiency?

2. Literature Review

With the global learning trend, English plays an important role in diverse sources of learning and is considered an essential tool for global interactions, accessing entertainment and varied information, and taking part in diverse social and business activities (Zuparova et al., 2020). English learning broadens students' vision of the world. Students learn from diverse cultural perspectives and special festivals from many countries. English learning also encourages cross-cultural communication, friendships building, and understanding of language among different ethnic groups. The process of acquiring English skills widens students' understanding and perceptions via interactions with intercultural materials (Cruz Arcila, 2007). However, students' learning of English is not limited to formal courses. Diverse approaches, such as accessing live and entertainment information, offer a wide variety of learning opportunities (Alhadad et al., 2021). These approaches encourage students' willingness to acquire language skills. The popularity of mobile media also enables individuals to obtain, perceive, and communicate in language learning more easily. Past literature has addressed learning difficulties among learners, while practices in learning English as a second language have also emphasized teaching strategies and learning motivation needed to encourage students' learning interest. The use of pictorial books to integrate into students' preferable learning styles was emphasized in this review. Several issues are discussed, including: *Problems for English learning and teaching practices, Pictorial learning in SLA*, *Students' learning styles for processing pictorial storybooks*, and *Library resources for pictorial storybooks/comics*.

2.1 Problems for English learning and teaching practices

Students with low English proficiency often experience distress, lose motivation to learn English (Hayati & Jalilifar, 2009), and feel panic about understanding and responding to others in face-to-face interactions (Al-Nouh et al., 2015). Inexperienced learners might expend cognitive effort to decipher unfamiliar passages in order to understand the meanings of the text (Kasim & Raisha, 2017). Learners with limited lexical resources might have feelings of distress when

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they are required to learn too many words in a limited time. In oral English communication, learners often experience a lack of confidence in pronouncing words and sentences in public. Most might feel embarrassed and distressed about their inaccurate pronunciation, therefore may be reluctant to communicate orally with others. These negative feelings drastically decrease learners' willingness to talk freely in English. Baran-Łucarz (2013) explained phonetics learning anxiety as speakers' fear of negative evaluation of their oral performance and pronunciation mistakes, therefore it is crucial to reduce students' speaking anxiety.

In SLA, the role of input and output practices has been commonly discussed (e.g., Nguyen, 2011; Papi & Hiver, 2025; Salaberry, 1997). Input Hypothesis claimed by Krashen (1985) suggests that language is acquired primarily through comprehensible input. Learners acquire knowledge when they understand messages being conveyed and are consistently exposed to meaningful communication. This means that effective language learning is enhanced when the SLA content is not only understandable, but also relevant and engaging, allowing learners to reflect and apply in a real-life context. From Output Hypothesis proposed by Swain (1995) in SLA, comprehensive input is necessary, however, not sufficient. Learners need to produce language. Comprehensible output is important to drive learners to convey precise messages. Coherent and appropriate output also encourage learners to produce language. From Swain's argument (1995), students need to move from semantic to syntactic processing for successful SLA. Integrated into SLA, teaching strategies for fostering comprehensive input (listening and reading skills) and output (writing and speaking skills) are both essential to encourage individuals to engage in a wide range of cognitive, metacognitive and affective processing (Papi & Hiver, 2025).

To encourage affective processing in language learning, emotional factors play an essential role in facilitating and promoting non-native English learners' learning. As proposed by Krashen (1981), Affective Filter hypothesis accounts for the emotional factors in monitoring individuals' second language learning, among which motivation, confidence and anxiety play an important role. According to Affective Filter hypothesis, negative emotional states cause internal barriers in learning second language. It is important to provide interesting elements to encourage affective learning. Students with high level of motivation are more easily to cope with personal anxiety and barriers in learning (Zhang, 2023). Creating engaging environment, such as using interesting learning materials, is supportive in learning. The approach helps reduce students' internal barriers, promote deeper cognitive processing. Moreover, it encourages learners to use their own self-regulated strategies. Over time, these experiences help students gain self-efficacy and confidence to use English effectively (Q. Liu, 2021).

2.2 Pictorial learning in SLA

Based on linguistic and psychological theories, Paivio (1971, 2010) proposed Dual Coding Theory (DCT), suggesting that lexical core in language processing is handled with different modalities along with meanings, structures, and the contexts of usage. The memory system contains two distinct systems: verbal and nonverbal (imaginal).

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Language learning will be enhanced when information is encoded both visually and verbally (Paivio, 2010).

Learning with verbal and nonverbal representations (e.g., pictures) reinforces both verbal and imaginary codes in language acquisition and knowledge construction by activating representational, referencing and associative connections in the memory system (Paivio, 2010). To comprehend learning content, learners need to progress with the pragmatics and structure of syntax in the texts, so that they can better and effectively understand English passages. Via the use of pictorial storybooks, learners can comprehend learning content more easily and enjoy learning new concepts and knowledge. Thus, they are likely to be more willing to discuss, reflect on, and express what they have learned (W. Liu, 2017).

Interest and passion are important elements to engage students in English learning (Liando et al., 2022). Providing students with a pleasant atmosphere also encourages them to be involved in the learning content. Interactive or vivid content with pictures makes students attend to the learning content more enthusiastically. Reading materials, such as concurrent events, cultural dramas, or festival blending, are beneficial for reinforcing vocabulary emergence (Demircioğlu, 2010; Liando et al., 2022).

Pictorial storybooks enhance understanding and interpretation of instructional contents through the use of visual-verbal connections for processing information (Halwani, 2017). Learning with interesting stimuli, students are more willing to engage in interaction and communication in learning contents and develop critical thinking skills needed in professional training (Picavet, 2024). In EMI classrooms, pictorial storybooks are used for multimodal meaning-making in specific subject domains. Multimodal representations in instructional approach extend the range of literacy learning in EMI students in diverse learning areas (Custodio-Espinar & López-Hernándezm, 2023). As explained by DCT (Paivio, 1971), pictures serve as tools for forming mental models that aid comprehension and cognitive processing in knowledge acquisition. From this approach, students are more easily to get an in-depth understanding of learning contents, gain confident in learning, and share and communicate in classes activities (Al-Murtadha, 2020; Tee, 2025).

Advocating the adoption of EMI for English learning, Norte and Morell (2024) proposed the use of pictorial models in English content to facilitate students' learning. They suggested that pictorial storybooks allow teachers and students to employ teaching and learning strategies efficiently, and communicate and interact with the EMI content more easily. Impressed by the story content, students actively reflect on the main topics and share their thoughts with others. This self-reflective practice facilitates learners' familiarization with complex English words and their willingness to share ideas for peer discussion (Lacy, 2021).

2.3 Students' learning styles for processing pictorial storybooks

From a psychological perspective, learning is related to individual preferences for processing information. The VARK model (visual, auditory, reading/writing, and kinesthetic) is a widely recognized framework for understanding and

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assessing diverse learning styles (Fleming & Mills, 1992). The model suggests that students learn better when their preferred learning styles are accommodated, whether through visual, auditory, reading/writing, or kinesthetic modes—such as touching, feeling, and experiencing.

Learners with visual learning styles prefer using diagrams, pictures, or images to assist in their learning progress, therefore learn better with pictorial content (Ariastuti & Wahyudin, 2022). For auditory learning style learners, audio sounds, verbal information, and the read-aloud process facilitate their learning. Learners with a kinesthetic learning style learn better by experiencing real environments, and exhibit a keen interest in hands-on activities and practical explorations (Noviska & Anastasia, 2023). Zhou (2011) emphasized that college students are adult learners who are more self-directed, independent, and capable of learning with their preferred learning styles to acquire new information and knowledge from accumulated experiences.

Learning styles are considered as individual learning skills in processing, interpreting and obtaining knowledge from learning experiences thorough interaction with the instructional settings. Instructional materials should be designed and used sensitively with students' learning needs to involve students, attract their interests, motivate learning, and achieve individual mastery (N. Othman & Amiruddin, 2010). By aligning instructional design approach with preferable learning styles, students are encouraged to gain self-awareness and use their metacognitive strategies to achieve learning goals (Noviska & Anastasia, 2023).

In SLA, learners are encouraged to utilize a variety of multimodal sensory strategies that align with their preferred learning styles to support more efficient language acquisition (Bualat et al., 2023). Modern technology integrates various modalities to support learners' diverse learning style preferences (visual, auditory, and kinesthetic modes). Instructional strategies that match students' learning styles for sensory and cognitive processing of stimuli can enhance their ability to acquire language skills and knowledge more effectively and meaningfully (K. Chen, 2023; Gilakjani, 2012).

The use of digital pictorial books in SLA is highly effective for adapting to diverse learning style preferences. Learners with visual preference can strive to describe pictures by training their speaking ability, including precise pronunciation and correct oral expression (T.-I. Chen et al., 2023). Diverse modes of interactions in digital format make contents more engaging and dynamic. Students' English learning will be more effective through the use of visual and audio aids, as well as the kinesthetic modes of practices, hands-on experiences and active participation (Kim & Gilman, 2008; Shukuronaxon, 2024).

To support SLA, essential elements in pictorial storybooks should be integrated into learning contents to help learners process the content actively. Wiesenberg and Baine (1994) proposed a model for the systematic design in pictorial learning through syntactic, semantic, and pragmatic analyses of the instructional contents. Several issues regarding pictorial design are discussed afterwards. For example, Palis and Quiros (2014) suggested effective pictorial design should be relevant, interactive and congruent with students' learning needs, and link to their previous knowledge and experience. Pearman and Lefever-

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Davis (2006) suggested the use of Q&A as a supporting element for encouraging interactions. Custodio-Espinar and López-Hernández (2023) suggested hands-on collaborative activities based on multimodal meanings in learning contents. To encourage review and prediction strategies in the story plots, Susilowati et al. (2019) used a worksheet for matching or drawing to acknowledge learning of vocabulary and give learners a chance to describe their creations. With practices from the pictorial approach and timely interactions with the learning contents, students are encouraged to actively get involved in learning contents and acquire knowledge.

When applied in SLA contexts, elements of pictorial representation can be designed to fulfill diverse learning contexts and reflect social and cultural ambiances of exploring and experiencing. The design of scenarios from the visual artworks encourages empathy and inspiring perspectives. The scenes blended into English learning can attract learners and trigger learning motivation. The main ideas and concepts of reading passages are easily understood (Kahanurak et al., 2023; Zhu, 2022). Contextual information in visual design also promotes interest and the encoding process in vocabulary learning, making the SLA contents more meaningful to students. Learning becomes easier since they learn how to learn language (Wen & Naim, 2023).

2.4 Library resources for pictorial storybooks/comics

With the emergence of student-centered EMI learning trend in higher education, learning resources that meet students' preferable learning styles have become important. Multimodal views of language learning should go beyond traditional written linguistic modes (Custodio-Espinar & López-Hernández, 2023). The use of pictorial storybooks has extended to many disciplines in higher education, especially in English teaching, where pictorial storybooks can be used to engage students in reading and learning (Lo et al., 2019).

Many cases using pictorial storybooks for diverse contents have been reported in relation to the EMI trend, such as psychology (Meyerson, 2006), reading (Lee, 2015), global cultural (Wu, 2017), civil right movement (Wilkins et al., 2008), mental health and nursing education (Stone & Levett-Jones, 2014), and history (Thomas et al., 2018). From these examples, it can be seen that pictorial storybooks are influential in motivating students' learning interest in different content, and encouraging them to learn actively to achieve the intended learning purposes.

Pictorial storybooks are increasingly used as teaching and learning resources in academic libraries, playing an important role in supporting leisure reading in academic libraries and professional training (O'English et al., 2006). Many libraries have enhanced their services related to pictorial storybooks due to the increasing demand among students of all ages for leisure or learning purposes (Vitella, 2022). The development of pictorial storybooks in libraries benefits English learning and teaching by motivating English learners to access these books freely and voluntarily. Digital storytelling tools also engage students in learning EMI resources more easily (Basyoni et al., 2020). The integration of multimedia in story reading encourages multisensory processing in comprehension and retention. This reading trend highlights the need for research on how academic libraries conduct

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reading promotion activities to meet students' reading requirements and encourage the use of library resources (Yu et al., 2023).

In summary, related research analyzing students' reactions to the use of pictorial storybooks for the enhancement of English learning is needed in the EMI learning and teaching trend. Such efforts can provide suggestions for the developments of collection and evaluation of future attempts by libraries to encourage a culture of reading among university students. With appropriate pictorial storybooks that interest students and guidance tailored to their individual needs, college students will benefit from improving their English proficiency and acquiring required knowledge.

3. Methodology

This study aimed to analyze college students' reactions to pictorial storybooks. College students' responses to questions about English acquisition through diverse opportunities and the use of pictorial storybooks were assessed via an online questionnaire. The subjects of the study were college students at Fu Jen Catholic University (FJCU), who stands out as a comprehensive institute of higher education in Taiwan. To improve students' English abilities and implement EMI courses, Bilingual Education Center was established in the campus. Additionally, FJCU offers a wealth of English learning resources and organizes various activities to support EMI initiatives. To collect research data, convenience sampling was used to recruit participants on campus. Invitations to access the questionnaire link and QR code were posted on the university library site and diverse social media, including FJCU's Facebook group, LINE group, Dcard, and so on. The questionnaire items were reviewed by 2 experts for face validity and reliability, and were revised based on their suggestions. Students' responses to the statements in the questionnaire were assessed using a 5-point Likert scale to reflect their agreement level (from 1 = Strongly Disagree to 5 = Strongly Agree). In addition, the first part of the questionnaire was designed to obtain students' basic information and cognitive (learning) styles. The classification of cognitive (learning) styles was adapted from Gilakjani's (2012) categorization, which identified preferences for visual, auditory, and kinesthetic learning. This was conducted via a designated website using a 5-points Likert sale.

Prior to the survey, the questionnaire items were also pilot-tested on 7 students to ensure the clarity of the questions. The organization and framework of the questionnaire, including its specific sections and components, are detailed in Table 1 for clarity and reference. Internal consistency of survey items measured by Cronbach's Alpha is 0.936 for Part 2 *Barriers in English learning*, 0.938 for Part 3 *Positive influences of using pictorial storybooks,* 0.783 for Part 4 *Essential characteristics of pictorial storybooks,* 0.945 for Part 5 *Expectations for library acquisitions and promotion,* and 0.921 for Part 6 *Expectations for the design of pictorial storybooks* (Table 2).

To obtain informed consent, students' anonymity was ensured prior to data collection. The procedures for collecting data adhered to the guidelines of the Institutional Review Board (IRB). After data collection, a descriptive analysis was conducted to identify which items or options

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Table 1. Structure of the Questionnaire Items

Research question	Questionnaire category	References
Personal background information	Part 1: Participants' basic information & cognitive (learning) styles.	Gilakjani (2012); Noviska & Anastasia (2023); Shukuronaxon (2024)
How do students react to barriers to and difficulties in English learning?	Part 2: Barriers to and difficulties in English learning.	Al-Nouh et al. (2015); Baran-Łucarz (2013); Y. Chen (2005); J. Liu (2008); Purwanto et al. (2021)
How do students react to the positive influences of pictorial storybooks for English learning?	Part 3: Positive influences of using pictorial storybooks for English learning.	Demircioğlu (2010); Haghanikar & Hooper (2021); Halwani (2017); Kasim & Raisha (2017); W. Liu (2017); Malu (2013); Zhu (2022)
What are the essential characteristics of pictorial storybooks?	Part 4: Essential characteristics of pictorial storybooks.	Custodio-Espinar & López-Hernández (2023); Pearman & Lefever-Davis (2006); Shukuronaxon (2024); Zuparova et al. (2020)
What are the students' expectations for libraries' acquisition and promotion of pictorial storybooks to encourage English learning?	Part 5: Expectations for libraries' acquisitions and promotion of English pictorial storybooks to encourage English learning.	Hurst et al. (2017); Lo et al. (2019); O'English et al. (2006); Smeets & Bus (2013); Vitella (2022); Zuparova et al. (2020)
What are the students' expectations for the design of pictorial storybooks?	Part 6: Expectations for the design of pictorial storybooks.	Ariastuti & Wahyudin (2022); Shukuronaxon (2024); Zhu (2022)
	Part 7: Open-ended suggestions	

Table 2. Reliability Analysis for Questionnaire Items

Questionnaire	Part 2	Part 3	Part 4	Part 5	Part 6
Number of items	15	16	9	20	12
Cronbach's Alpha	0.936	0.938	0.783	0.945	0.921

were most frequently selected or prioritized. In addition, *t*-tests were also conducted to identify response differences between students with high and low proficiency levels. The neutral responses were excluded from the analysis of high and low differences.

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4. Results

4.1 Basic information

The research subjects were college students at FJCU. At the end of data collection, a total of 253 valid data were used for further analysis. In terms of respondents' gender, 207 (81.8%) were female, 41 (16.2%) were male, and 5 (2.0%) did not state their gender. The 253 respondents were gathered from 13 colleges (including the School of Continuing Education), with the highest to the lowest as follows: 52 (20.6%) from the College of Education, 44 (17.4%) from the College of Foreign Languages, 27 (10.7%) from the College of Management, 24 (9.5%) from the College of Medicine, 19 (7.5%) from the School of Continuing Education, 18 (7.1%) from the College of Arts, 17 (6.7%) from the College of Social Science, 12 (4.7%) from the College of Science and Engineering, 11 (4.3%) from the College of Human Ecology, 10 (4.0%) from the College of Law, 9 (3.6%) from the College of Liberal Arts, 7 (2.8%) from the College of Communication, and 3 (1.2%) from the College of Textile and Clothing. The distribution of grade levels of respondents from highest to lowest was as follows: 68 (26.9%) were 4th year students, 65 (25.7%) were 2nd year students, 60 (23.7%) were 1st year students, 51 (20.2%) were 3rd year students, and 9 (3.6%) were delayed graduation students.

The analyses of respondents' English proficiency in different capabilities are listed in Table 3. From the analyses, "reading" was ranked the highest proficiency (M = 3.16, SD = 0.94), followed by "listening" (M = 2.98, SD = 1.05), "vocabulary" (M = 2.77, SD = 0.95), "grammar" (M = 2.73, SD = 1.03), "speaking" (M = 2.45, SD = 0.99), and "writing" (M = 2.37, SD = 0.93). Nevertheless, the proficiency levels of most items (including "listening," "vocabulary", "grammar," "speaking," and "writing") did not exceed the midpoint value of 3.0, indicating that the majority of students self-assessed their English level as below average or lower-middle. The total scores summing up different proficient level ranged from 6 (minimum) to 29 (maximum). To examine the differences in responses to the questionnaire items, students with scores higher than 19 (N = 89) and lower than 15 (N = 102) were selected for further t-test comparisons.

According to students' responses, the distribution of "time for English learning per week" sorted from the highest to the lowest is listed in Table 4, where the top 3 responses were: "less than 1 hour" (132 respondents, 52.2%), "1–2 hours" (65, 25.7%), and "2–3 hours" (25, 9.9%).

A t-test comparison of English proficiency between students who study English for more than 1 hour per week (N = 118) and those who study for less than 1 hour (N = 135) indicates a significant difference in their self-assessed English proficiency. Students who spent more time in learning English (M = 18.04, SD = 4.43) had a

Table 3. Analysis of English Proficiency (N = 253)

Proficiency	Reading	Listening	Vocabulary	Grammar	Speaking	Writing	Total
Mean	3.16	2.98	2.77	2.73	2.45	2.37	16.46
SD	0.94	1.05	0.95	1.03	0.99	0.93	4.65

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Table 4. Analysis of Time for English Learning per Week (N = 253)

Time for English learning per week	Respondents	%
None	3	1.2
Less than 1 hour	132	52.2
1–2 hours	65	25.7
2–3 hours	25	9.9
3–4 hours	13	5.1
4–5 hours	3	1.2
More than 5 hours	12	4.7

higher proficiency level than those who spent less (M = 15.07, SD = 4.40) (t = 5.332, p = .000).

The number of spoken languages is summarized in Table 5: 110 students (43.5%) speak 1 language, 84 students (33.2%) speak 2 languages, and 59 students (23.3%) speak more than 2 languages. One way ANOVA tested for English proficiency among students who spoke 1, 2 and more than 2 languages indicates a significant difference among groups at α = 0.05 level (F = 4.37, p = .014). Post Hoc analyses using Scheffé measure indicate that students who spoke more than 2 languages had a higher proficiency level (M = 18.00, SD = 4.91) than those who spoke 1 language (M = 15.06, SD = 4.06; p = .02) at level of α = 0.05. The differences for other comparisons (more than 2 languages vs. 2 languages; 2 languages vs. 1 language) are insignificant (p > .05).

The analyses of "preferred learning styles" among respondents are listed in Table 6, sorted by average value from high to the low. "Visual" was ranked as the most preferred learning style (M = 3.91, SD = 0.91), followed by "kinesthetic" (M = 3.76, SD = 1.05), and "auditory" (M = 3.47, SD = 0.96). The popularity level for all learning style items (including "visual," "auditory," and "kinesthetic") exceeded the midpoint value 3.0, while the majority preferred visual and kinesthetic learning styles. The correlation analyses were conducted to determine how learning style preference is related to different categories in the questionnaire.

4.2 Barriers to and difficulties in English learning

In the second part of the questionnaire regarding the barriers to and difficulties in English learning, the top 3 responses were: "Limited English lexical resources" (M = 3.76, SD = 1.08), "Unsatisfied with my current learning achievement in English" (M = 3.75, SD = 1.12), and "Lack of confidence in practicing English speaking or pronunciation in public" (M = 3.55, SD = 1.31). Compared with students in high level of proficiency, students in low level of proficiency experienced higher levels of barriers to and difficulties in all of the items (p < .001). The levels of significance are shown in Table 7. From these results, it can be seen that students in low English proficiency level reflected their difficulties in lexical resources. They were not satisfied with their learning achievement, and lack confidence

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Table 5. Analysis of Spoken Language (*N* = 253)

Spoken language	Respondents	%
1 language	110	43.5
2 languages	84	33.2
More than 2 languages	59	23.3

Table 6. Analysis of Preferred Learning Styles

Preferred learning styles	Number of respondents (1–5 from strongly disagree to strongly agree)					*M*	*SD*
	1	2	3	4	5		
Visual	4	12	59	106	72	3.91	0.91
Kinesthetic	7	24	64	85	73	3.76	1.05
Auditory	6	30	94	86	37	3.47	0.96

in speaking, comprehension, writing, and reading. They were also reluctant to communicate with others in English and access English knowledge. These negative feelings about learning pressure and attitudes toward English are worth noting. The correlation analysis between learning style preferences and barriers to English learning is insignificant ($p > .05$).

4.3 Positive influences of using pictorial storybooks for English learning

Table 8 summarizes the evaluation of the positive influences of using pictorial storybooks for English learning as assessed in the third part of the questionnaire. Among the questionnaire items, the top 3 responses were: "Integrating pictorial storybooks into instructional materials provides enjoyment of knowledge learning in English" ($M = 4.08$, $SD = 0.80$), "Integrating technology into pictorial storybooks helps the application of English learning from instructional materials" ($M = 4.03$, $SD = 0.81$), and "The use of digital pictorial storybooks provides visual stimuli to help predict reading content and reduce English learning pressure" ($M = 3.94$, $SD = 0.83$). Students with a high level of English proficiency scored higher than those with a low level of English proficiency (at $\alpha = 0.05$ level) in the items related to the enjoyment of knowledge learning in English, technology-mediated application, visual prediction, and devotion of interacting and communicating with pictorial books ($p < .05$). The correlation analysis between learning style preferences and positive influences of using pictorial storybooks is insignificant ($p > .05$).

4.4 Essential characteristics of pictorial storybooks

Responses to the fourth part of the questionnaire analyzed the essential characteristics

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Table 7. Analysis of Barriers to and Difficulties in English Learning

Barriers to and difficulties in English learning	*M*	*SD*	Significant difference between high and low proficiency
Limited English lexical resources.	3.76	1.08	L = 4.29; *SD* = 0.87; H = 3.13; *SD* = 1.09 *t* = 8.584; *p* = .000***
Unsatisfied with my current learning achievement in English.	3.75	1.12	L = 4.17; *SD* = 0.97; H = 3.18; *SD* = 1.173 *t* = 6.357; *p* = .000***
Lack of confidence in practicing English speaking or pronunciation in public.	3.55	1.31	L = 4.09; *SD* = 0.91; H = 3.07; *SD* = 1.06 *t* = 6.986; *p* = .000***
Time-consuming to comprehend main ideas of unfamiliar paragraphs.	3.55	1.11	L = 4.13; *SD* = 1.01; H = 2.72; *SD* = 1.30 *t* = 8.226; *p* = .000***
Lack of confidence in my English writing ability.	3.50	1.17	L = 3.99; *SD* = 1.17; H = 2.92; *SD* = 1.04 *t* = 6.630; *p* = .000***
Insufficient time for reading English materials.	3.32	1.18	L= 3.78; *SD* = 1.16; H = 2.84; *SD* = 1.09 *t* = 5.772; *p* = .000***
Difficulties in learning many new words in English reading.	3.13	1.22	L = 3.83; *SD* = 1.08; H = 2.35; *SD* = 1.00 *t* = 9.80; *p* = .000***
Lack of confidence in my English listening comprehension ability.	3.11	1.34	L = 3.75; *SD* = 1.20; H = 2.28; *SD* = 1.17 *t* = 8.584; *p* = .000***
Reluctance to communicate with others in English orally due to my inaccurate pronunciation.	3.08	1.36	L = 3.80; *SD* = 1.24; H = 2.19; *SD* = 1.11 *t* = 9.411; *p* = .000***
Reluctance to speak in English due to the barriers of English learning.	3.05	1.35	L = 3.83; *SD* = 1.20; H = 2.12; *SD* = 1.04 *t* = 10.421; *p* = .000***
Difficulties in reading diverse knowledge content in English.	3.04	1.30	L = 3.75; *SD* = 1.11; H = 2.24; *SD* = 1.23 *t* = 9.353; *p* = .000***
Inability to comprehend the main ideas when reading English.	3.02	1.15	L = 3.72; *SD* = 1.05; H = 2.31; *SD* = 0.94 *t* = 9.686; *p* = .000***
Barriers to understanding English materials.	2.94	1.24	L = 3.72; *SD* = 1.64; H = 2.31; *SD* = 0.88 *t* = 9.686; *p* = .000***
Negative feelings from the pressure in English learning.	2.81	1.34	L = 3.44; *SD* = 1.28; H = 2.16; *SD* = 1.20 *t* = 7.134; *p* = .000***
Negative attitude toward extensive use of English required by professors in courses.	2.80	1.24	L = 3.31; *SD* = 1.17; H = 2.18; *SD* = 1.10 *t* = 6.837; *p* = .000***

Note. H: High proficiency level; L: Low proficiency level.
*** $p < .001$.

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Table 8. Analysis of Positive Influences of Using Pictorial Storybooks for English Learning

Positive influences of using pictorial storybooks for English learning.	*M*	*SD*	Significant difference between high and low proficiency
Integrating pictorial storybooks into instructional materials provides enjoyment of knowledge learning in English.	4.08	0.80	L = 3.94; *SD* = 0.84; H = 4.26; *SD* = 0.78 *t* = -2.693; *p* = .008**
Integrating technology into pictorial storybooks helps the application of English learning from instructional materials.	4.03	0.81	L = 3.89; *SD* = 0.87; H = 4.13; *SD* = 0.80 *t* = -2.000; *p* = .047*
The use of digital pictorial storybooks provides visual stimuli to help predict reading content and reduce English learning pressure.	3.94	0.83	L = 3.83; *SD* = 0.86; H = 4.00; *SD* = 0.84 *t* = -2.693; *p* = .008**
The use of pictorial storybooks helps me comprehend English material content despite my limited lexical resources.	3.90	0.91	No significant diff.
The integration of pictorial storybooks provides reading enjoyment and encourages English learning.	3.89	0.86	No significant diff.
The use of pictorial storybooks stimulates my learning of reading skills.	3.84	0.89	No significant diff.
Integrating pictorial storybooks into instructional materials enhances learning of English vocabulary.	3.81	0.89	No significant diff.
The use of digital pictorial storybooks encourages me to devote myself to interacting and communicating in English learning.	3.81	0.87	L = 3.62; *SD* = 0.81; H = 3.98; *SD* = 0.89 *t* = -2.924; *p* = .004**
The use of pictorial storybooks helps me grasp the main ideas of English narrations and encourages reflections.	3.77	0.90	No significant diff.
The integration of new vocabulary in pictorial storybooks encourages interaction and motivation in learning.	3.76	0.93	No significant diff.
The use of pictorial storybooks helps me gain learning confidence during English learning.	3.74	0.90	No significant diff.
Integrating pictorial storybooks into instructional materials of professional subjects enhances learning of English.	3.73	0.92	No significant diff.
The use of pictorial storybooks encourages me to share and communicate willingly with teachers and peers in English learning.	3.61	0.96	No significant diff.
The use of pictorial storybooks stimulates my learning of listening skills.	3.22	1.07	No significant diff.
The use of pictorial storybooks stimulates my learning of speaking skills.	3.17	1.04	No significant diff.
The use of pictorial storybooks stimulates my learning of writing skills.	3.13	1.09	No significant diff.

Note. H: High proficiency level; L: Low proficiency level.
* $p < .05$. ** $p < .01$.

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of pictorial storybooks, and reflected the significance of visual support in enhancing language learning. The highest-ranked responses were: "Pictorial storybooks must have applicable length and amount of content" (M = 4.35, SD = 0.75), "Pictorial storybooks must contain interesting elements" (M = 4.33, SD = 0.77), and "The images used in storybooks should help comprehension of the English text" (M = 4.30, SD = 0.79). A detailed breakdown of the responses is listed in Table 9. In this category, there is no significant differences between students with different level of proficiency ($p > .05$). The essential characteristics of pictorial storybooks were responded equally by both groups of students. The correlation analysis between learning style preferences and essential characteristics of pictorial storybooks is insignificant ($p > .05$).

4.5 Expectations for library acquisitions and promotion

Table 10 summarizes the items in the fifth part of the questionnaire regarding respondents' expectations about library acquisitions and the promotion of pictorial storybooks to encourage English learning. Among the questionnaire items, the top 3 rankings were: "I suggest that libraries acquire English pictorial storybooks on multicultural topics" (M = 4.16, SD = 0.84), "I suggest that libraries acquire English pictorial storybooks for enhancing reading comprehension" (M = 4.05, SD = 0.87) and "I suggest that libraries

Table 9. Analysis of Essential Characteristics of Pictorial Storybooks

Essential characteristics of pictorial storybooks	*M*	*SD*	Significant difference between high and low proficiency
Pictorial storybooks must have applicable length and amount of content.	4.35	0.75	No significant diff.
Pictorial storybooks must contain interesting elements.	4.33	0.77	No significant diff.
The images used in storybooks should help comprehension of the English text.	4.30	0.79	No significant diff.
Pictorial storybooks should match my favorite illustration styles.	4.26	0.85	No significant diff.
The images used in storybooks should encourage personal use of learning strategies, such as bookmarks, notes, mnemonics, simplified content, etc.	3.99	0.94	No significant diff.
Pictorial storybooks must be interactive, such as using visual or audio interactions.	3.95	0.92	No significant diff.
Pictorial storybooks must be appropriate to my comprehensive level.	3.77	1.12	No significant diff.
Pictorial storybooks must use animations and refer to electronic resources.	3.71	1.08	No significant diff.
Pictorial storybooks should contain many pictures.	3.49	1.06	No significant diff.

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Table 10. Analysis of Expectations for Library Acquisitions and Promotion of Pictorial Storybooks

Expectations for library acquisitions and the promotion of pictorial storybooks	*M*	*SD*	Significant difference between high and low proficiency
I suggest that libraries acquire English pictorial storybooks on multicultural topics.	4.16	0.84	No significant diff.
I suggest that libraries obtain English pictorial storybooks to improve reading comprehension.	4.05	0.87	No significant diff.
I suggest that libraries acquire English pictorial storybooks for learning vocabulary.	4.04	0.90	No significant diff.
I suggest that libraries obtain pictorial storybooks to promote English learning.	3.98	0.88	No significant diff.
I suggest that libraries acquire English pictorial storybooks embedded with visual or auditory interactive features.	3.94	0.96	L = 3.75; *SD* = 0.94; H = 4.22; *SD* = 0.82 *t* = -3.656; *p* = .000***
I look forward to new book introductions and recommendations related to English pictorial storybooks.	3.94	0.91	No significant diff.
I expect to have multiple learning programs for promoting English reading of pictorial storybooks, such as arts, science, etc.	3.92	1.00	No significant diff.
I suggest that libraries purchase pictorial storybooks related to enhancing English capabilities.	3.92	0.89	No significant diff.
I suggest libraries acquire pictorial storybooks featuring multi-media.	3.90	0.95	No significant diff.
I suggest libraries acquire English pictorial storybooks related to my professional subjects.	3.89	0.95	L = 3.64; *SD* = 1.04; H = 4.10; *SD* = 0.87 *t* = -3.317; *p* = .001**
I hope to find English pictorial storybooks on various themes online.	3.89	0.99	L = 3.76; *SD* = 0.99; H = 4.06; *SD* = 1.02 *t* = -2.009; *p* = .046*
I hope that libraries can invite the authors and illustrators of English pictorial storybooks for promotional activities.	3.83	1.08	L = 3.57; *SD* = 1.14; H = 4.08; *SD* = 1.03 *t* = -3.234; *p* = .001**
I suggest that libraries acquire pictorial storybooks related to pop culture.	3.81	0.93	No significant diff.
I hope to have activities for creating English pictorial storybook to encourage creativity.	3.79	1.04	L = 3.68; *SD* = 1.04; H = 4.03; *SD* = 0.99 *t* = -2.423; *p* = .016*

(continued)

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Table 10. Analysis of Expectations for Library Acquisitions and Promotion of Pictorial Storybooks (continue)

Expectations for library acquisitions and the promotion of pictorial storybooks	*M*	*SD*	Significant difference between high and low proficiency
I hope that libraries can offer activities such as reward point collection and book exhibitions to encourage reading pictorial storybooks.	3.70	1.04	No significant diff.
I hope to have English-mediated courses focusing on reading of English pictorial storybooks.	3.68	1.06	L = 3.47; *SD* = 1.15; H = 3.96; *SD* = 0.98 *t* = -2.693; *p* = .008**
I hope to have study groups for reading English pictorial storybooks.	3.50	1.01	L = 3.33; *SD* = 1.01; H = 3.69; *SD* = 1.04 *t* = -2.372; *p* = .019*
It is expected that libraries purchase pictorial storybooks related to sports and leisure.	3.42	1.01	No significant diff.
I hope there can be live broadcast programs to encourage students' reading and appreciation of multiple English pictorial storybooks.	3.37	1.12	L = 3.22; *SD* = 1.10; H = 3.57; *SD* = 1.18 *t* = -2.824; *p* = .031*
I hope that libraries can hold competitions for the creation of English pictorial storybooks.	3.32	1.14	L = 3.15; *SD* = 1.19; H = 3.62; *SD* = 1.10 *t* = -2.824; *p* = .005**

Note. H: High proficiency level; L: Low proficiency level.
* $p < .05$. ** $p < .01$.

acquire English pictorial storybooks for learning vocabulary" ($M = 4.04$, $SD = 0.90$). Students with a high level of English proficiency scored higher than those with a low level of English proficiency (at $\alpha = 0.05$ level) in items related to acquisition with visual or auditory features, professional subjects, varied online themes, meeting authors and artists, fostering creativity, course focus, study group, live broadcast programs, competitions for creation of works ($p < .05$). The correlation analysis between learning style preferences and expectations for library acquisitions and promotion of pictorial storybooks is insignificant ($p > .05$).

4.6 Expectations for the design of pictorial storybooks

In the sixth part of the questionnaire regarding students' expectations for the design of pictorial storybooks, the top 3 ranked items were: "It is expected that future design of English pictorial storybooks can emphasize the representation of reading content" ($M = 4.34$, $SD = 0.79$), "It is expected that future design of English pictorial storybooks can reduce learning pressure in English reading" ($M = 4.33$, $SD = 0.78$), and "It is expected that future design of English pictorial storybooks can help trigger reading imagination" ($M = 4.32$, $SD = 0.78$). There was strong agreement with most of the items in this part ($M > 4.0$) (Table 11). In this category, there

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is no significant differences among students with different level of proficiency ($p > .05$). The results indicated that both groups equally expect for all of the items in the design of pictorial storybooks. The correlation analysis between learning style preferences and expectations for the design of pictorial storybooks is also insignificant ($p > .05$).

4.7 Open-ended suggestion

In the open-ended responses at the end of the questionnaire, students provided suggestions for the future promotion of English pictorial storybooks, including: (1) diverse approaches to stimulating students' interest, (2) designs with audio-visual media (such as online animations, audio-lingual aids, videos, etc.), (3) easily

Table 11. Analysis of Expectations for the Design of Pictorial Storybooks

Expectations for the design of pictorial storybooks	*M*	*SD*	Significant difference between high and low proficiency
It is expected that future design of English can emphasize the representation of reading content.	4.34	0.79	No significant diff.
It is expected that future design of English pictorial storybooks can reduce learning pressure in English reading.	4.33	0.78	No significant diff.
It is expected that future design of English pictorial storybooks can help trigger reading imagination.	4.32	0.78	No significant diff.
It is expected that future design of English pictorial storybooks can focus on interesting content.	4.30	0.79	No significant diff.
It is expected that future design of English pictorial storybooks can put more effort into delicate illustrations and unique styles.	4.28	0.79	No significant diff.
It is expected that the design of English pictorial storybooks can be integrated into general subject learning.	4.28	0.78	No significant diff.
It is expected that future design of English pictorial storybooks can be read in multiple media.	4.20	0.82	No significant diff.
It is expected that the design of English pictorial storybooks can be integrated into various professional advanced subjects.	4.16	0.87	No significant diff.
It is expected that the design of English pictorial storybooks can be embedded with reflections and sharing functions for group discussion.	4.08	0.89	No significant diff.
It is expected that the design of English pictorial storybooks can add videos to facilitate learning interactions	4.06	0.90	No significant diff.
It is expected that the design of English pictorial storybooks can apply innovative technology	4.02	0.92	No significant diff.
It is expected that the design of English pictorial storybooks can use audio-lingual tools to assist learning.	3.96	1.01	No significant diff.

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accessible online versions (such as electronic-based pictorial storybooks, specialized links or downloads, etc.), (4) suitable content (such as comprehensible for different English proficiency levels, diversified story plots, etc.), and (5) needed training activities (such as study groups, elective courses, etc.). Some students suggested that using delicate artwork or interesting graphics on the cover can encourage them to read, while others suggested that using simple and approachable pictorial storybooks can help learn English step by step. The pictures and text should also be presented interspersed to facilitate reading.

From the analysis of learning style preferences, the majority of students were visual and kinesthetic learners. Most of them did not spend much time in learning English and were not proficient in English. They suggested having more interesting design of pictorial storybooks to motivate English learning. They also suggested that the storybooks should be comprehensible for students of varying English proficiency levels and should include diverse story plots. These recommendations stemmed from the understanding that some students may encounter barriers in learning English, and therefore, require appropriately diversified materials and training activities (such as study groups and elective courses) to address their individual learning needs and language abilities.

5. Discussion

In the study, the responses of students from 13 colleges at FJCU were obtained. Their self-evaluation of English proficiency indicated that "reading" was their best ability. However, the mean rating for all proficiency categories remained below the standard of 3.0. Most students spent less than 1 hour per week on English. Similar results were observed from different countries such as Saudi and Yemeni (Ahmed et al., 2020; Alsamadani, 2017). As observed from these studies, students strived to develop English skills for their professional training. Nevertheless, the average score for each proficiency was below the standard level of 3.0. Since students rarely use English for communication, their proficiency did not meet the required standard. From background information, students who spent more time in learning English had a higher proficiency level than those who spent less ($t = 5.332$, $p < .001$). It is inferred that if students are motivated to learn and spend more time with English resources to practice English skills, they may have a better chance of achieving higher English proficiency. It was also found that students who spoke more than 2 languages had a higher English proficiency level than those who spoke only 1 language ($p < .05$). As speculated, trilingual learning helps students become more aware of how languages work in general (Escamilla & Hopewell, 2011). This heightened awareness allows them to analyze and compare language structures, thereby accelerating English learning. Airey (2020) suggested the practical use of English in EMI pedagogical approach to engage students in learning diverse subject domains. The experiences of EMI course strengthen students' awareness of the importance of using English as a medium of learning. As global learning trend continues, the ability to communicate in more than one language has become an essential skill for academic, professional, and social success. Fostering bilingual

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education can enable students to have multiple language skills (Scherzinger & Brahm, 2023).

By analyzing the preferred learning styles of these students, our study reveals that most of them were visual and kinesthetic learners. Without diversification in learning preferences among these students, no significant relationships were found between preferred learning style and other variables in our study ($p > .05$). These students learned better through visual, concrete observation, and hands-on experience. Similar results were observed by Mustapha et al. (2024). Design for easy visual communication is necessary for effective learning and motivation of intended outcomes (Agrawala et al., 2011). To engage students in learning in the digital age, using electronic pictorial materials that cater to students' preferred learning styles can encourage them to interact with the content (Ghafar, 2024).

Statistical analysis of students' barriers indicates that students with low English proficiency report higher levels of barriers on all items compared to those with high English proficiency ($p < .001$). From the questionnaire items, limited English lexical resources, dissatisfaction with their learning achievement, and lack of confidence in speaking were the most common barriers encountered by students. As addressed by Octaberlina et al. (2022), limited lexical resources are the major barriers that most students encounter when learning English, including unfamiliarity with the use of words and insufficient vocabulary to communicate effectively. Individual difficulties in English learning are interrelated, especially lack of satisfaction can make students reluctant to learn English. Motivation, confidence and anxiety have great impact on SLA. To overcome these barriers, integrating pictures into text information can have positive influences on vocabulary acquisition, and can help create a student-centered learning atmosphere. As suggested by DCT, learning with both verbal and nonverbal representations reinforces both verbal and imaginary processing in the memory system (Paivio, 2010). The use of visual scenarios invites thinking and reflection, thus fosters authentic communication in acquiring language skills (Saeed & Muhealddin, 2024).

Regarding influences of using pictorial storybooks in English learning, students with high level of English proficiency responded more positively than those with low level of English proficiency in the items about enjoyment of knowledge learning in English, technology-mediated application, visual prediction, and devotion of interacting and communicating with pictorial books. As observed by J. Othman (2024), enjoyment from learning experiences helps reduce students' cognitive difficulties when dealing with unfamiliar content. Students with high level of English proficiency are also keen to use different tools and strategies for visual prediction, and are more involved in application of skills learned. The use of their own cognitive, metacognitive, and affective strategies helps English learning in various ways (Lai et al., 2022).

Among the essential characteristics of pictorial storybooks, there is no significant differences among students with different level of proficiency ($p > .05$). The listed elements of pictorial storybooks were responded equally essential by both groups of students. In the items, the most agreed one was applicable length and amount of content, which enabled students to gradually recall the main ideas of the learning materials.

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Within a manageable framework, students are given the opportunity to explore and use the language to help them develop cognitive abilities in specific domain (Ibrahim, 2001; Toprak-Yildiz, 2022). As suggested for effective learning of EMI content, the layout and the number of words in the instructional materials must be well-structured and balanced with students' English proficiency levels for their reading comprehension (M. L. Chen, 2012; Kang et al., 2023).

In the items related to the expectation of library acquisition, students strongly expected to have pictorial storybooks on multicultural topics. As suggested by Kahanurak et al. (2023), college students need to develop global professional competence in higher education. Multicultural topics are important for learning intercultural skills to communicate appropriately and effectively in diverse cultural contexts. University libraries play a critical role in fostering a supportive learning environment for all students on campus. To address intercultural learning needs, libraries should develop collections and services that enhance students' language learning experiences and promote cross-cultural understanding (Trembach, 2022). Statistic comparisons of students with different levels of English proficiency indicate that students with high level of English proficiency have higher expectation for several library services, including acquisition with visual or auditory features, professional subjects, varied online themes, meeting with authors and artists, creativity fostering, course focus, study group, live broadcast programs, and competitions for creation of works ($p < .05$). These services are relevant to their professional growth and involve the use of technology-based social activities to encourage interest and creativity. Students with higher proficiency levels may need more of these experiences to help them advance further.

In terms of expectations for the design of pictorial storybooks, there is no significant differences between students with different level of proficiency ($p > .05$), with listed expectations responded equally by both groups of students. In the items, emphasis on the representation of reading content was rated the highest. As implied in DCT, representational processing is initial activation of cognitive operations perceived by memory system (Paivio, 2010). Effective and sustained language learning with pictorial storybooks should foster enjoyment and enhance the overall learning experience, including reducing learning pressure and stimulating imagination (Sadoski & Paivio, 2004). Design examples of pictorial storybooks, such as story themes and plots providing contexts of intended interaction purposes, use of summarizing and reflective strategies, or incorporation of different modes of communication, including audio, visual, and kinesthetic to reflect on the concepts, are suggested (Kochiyama, 2016; Shen & Huang, 2021; Shukuronaxon, 2024). The engagement of the interactive activities provided by pictorial storybooks not only makes reading and learning more enjoyable, but also aids memory retention.

In Taiwan, many students are taught English through rote memorization and grammar-heavy instruction. Consequently, the effectiveness of English learning is not satisfactory (T.-I. Chen et al., 2023). Storybooks provide a more natural, interactive approach that supports language acquisition through engaging contexts for storytelling. In support of more meaningful

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language learning, the use of pictorial storybooks should therefore reflect multicultural and international perspectives to offer students with greater opportunities to explore and appreciate cultural diversity.

6. Conclusion

This study investigated college students' English learning and their reactions to the use of pictorial storybooks, highlighting the importance of pictorial storybooks and comic collections in academic learning that cater to students' interests. Most students spent too little time learning with English, consequently, did not achieve the expected level of English proficiency. To cope with students' barriers in learning English, the practical use of English in future EMI pedagogical approach is needed to strengthen students' language learning in diverse subject domains. Also, the university library might acquire pictorial storybooks in various subjects to encourage students' reading interests. Promotional activities such as study groups and meetings with authors or artists of pictorial storybooks might also encourage students to engage with the pictorial storybook reading community.

Since most students prefer visual and kinesthetic learning, the use of learning materials should meet their learning needs. Pictorial storybooks might serve as a powerful tool to enrich students' learning experiences. To support students' learning and promote EMI curriculum, academic libraries might purchase more English pictorial storybooks covering multicultural topics. With the emerging national trend of bilingual education, university libraries should collaborate with EMI faculty members to provide English pictorial storybooks as course reading materials.

This study adopted a survey to assess college students' use of and reactions to pictorial storybooks. It is hoped that the research findings will contribute to EMI education and services for library collection development. However, this research is exploratory and context-specific, and has limitations in scope. The sampling procedure and sample size limits the generalizability of the findings. Additionally, utilizing convenience sampling may lead to selection bias. In the future, a more rigorous sampling method should be adopted, along with enhanced statistical analysis, such as factor analysis or comparing differences from multiple perspectives. Furthermore, more subjects should be included to allow for a more in-depth study of the use of pictorial storybooks. Future research that employs experimental design to compare students' EMI learning performance using pictorial storybooks with that of a control group will be able to evaluate the effectiveness of pictorial storybooks more rigorously. In addition, a different research approach using qualitative method to conduct a deeper thematic analysis is required.

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大學生運用繪本學習英文之調查研究—以輔仁大學為例

A Survey of College Students' Use of Pictorial Storybooks for English Learning: A Case of Fu Jen Catholic University

徐千代[1]　林麗娟[2]　周德嬚[3]

Chien-Tai Hsu[1], Lih-Juan ChanLin[2], Te-Lien Chou[3]

摘　要

傳統英文教與學讓學生產生學習障礙與壓力，利用英文繪本能改善英文學習，提升學習動機。本研究在於探討大學生英文學習障礙、繪本能改善的英文學習障礙、繪本必要特質、未來圖書館購置繪本期望，以及繪本內容設計等議題。研究透過李克特五點量表調查輔仁大學大學生之反應，綜整253份問卷結果，多數學生每週學習英文時間少於1小時、偏好視覺與觸覺性學習型態、具詞彙上之障礙。各個層面指標反應的重點包括結合繪本學習英文可提供樂趣、應準備適當長度份量之學習內容、期望多元文化主題繪本館藏，以及適當的繪圖設計可助於閱讀。本研究亦針對未來英文繪本滿足學生所需視覺與觸覺學習，以及圖書館提供多元文化主題之英文繪本館藏與服務提出建議。

關鍵字：圖畫故事書、繪本、英語學習、繪本館藏、第二語言學習

[1] 臺北市立五常國小
Municipal Wu Chang Elementary School, Taipei, Taiwan
[2] 輔仁大學圖書資訊學系
Department of Library and Information Science, Fu Jen Catholic University, New Taipei City, Taiwan
[3] 輔仁大學英國語文學系
Department of English and Literature, Fu Jen Catholic University, New Taipei City, Taiwan
* 通訊作者Corresponding Author: 林麗娟Lih-Juan ChanLin, E-mail: lins1005@mail.fju.edu.tw

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