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A special *mahalo* to Charles-James Bailey for introducing our Departmental
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TOWARDS REGIONALLY CUSTOMIZED ENGLISH AI DIGITAL TEXTBOOKS

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For over three decades, Korean elementary schools have relied on standardized, paper-based English textbooks. This pilot study examines how these textbooks represent regions such as Jeju and Busan, aiming to inform the development of the Artificial Intelligence Digital Textbook (AIDT), set to launch in 2025. Drawing on Holliday's (1999) cultural paradigm, which differentiates between 'Large culture' and 'Small culture,' this study utilizes a mixed-methods approach, incorporating both qualitative and quantitative analyses. The analyses focus on textbooks from two publishers widely patronized on Jeju Island. The findings reveal a lack of regional references in textbooks for lower grades (grades 3 and 4). Specific regions, such as Jeju, Busan, and Gangneung, are mentioned in textbooks for higher grades (grades 5 and 6), but primarily as weekend or summer travel destinations. Seoul is presented as the main character's place of origin, implicitly positioning it as the central place of residence. Jeju, which appears frequently, is consistently depicted as a tourist destination, reinforcing an oversimplified and peripheral image of the region. This study emphasizes the significance of AIDT in providing regionally tailored English education that reflects the lived experiences of students outside Seoul, fostering a more inclusive and realistic understanding of various regions in Korea. Recommendations include collaboration between AIDT developers and regional experts to ensure accurate and comprehensive regional data, training for regional English teachers in local knowledge, and the development of a region-based English curriculum supported by an efficient administrative structure.

Keywords: English textbooks, AI digital textbook (AIDT), large culture, small culture, region

1. INTRODUCTION. English textbook analysis has predominantly applied the categorization framework of Kachru and Nelson's (1996) model of English spread, focusing on whether textbooks include various World Englishes, reflect Korean/native cultures and multicultural aspects of the Expanding Circle,¹ and achieve a gender balance (e.g., Gong and Seong 2021; Hino 1988; Im and Heo 2020; Jang 2011; Jang and Kim 2018; Matsuda 2002; Park et al. 2022; Shin et al. 2011). These studies indicate that English textbooks tend to concentrate on American and British English from the Inner Circle and that the cultural context of the Inner Circle can pose challenges for non-native learners in acquiring English. They also highlight the importance of including native culture, noting that such representations should go beyond traditional, factual, and knowledge-based content to incorporate cultural elements like beliefs and values. Moreover, these studies argue for the avoidance of gender-based stereotypes.

In recent years, attention has begun to focus on previously under-represented minorities. For instance, some studies have noted that depictions of ethnic minorities (Xiang and Yenika-Agbaw 2021), indigenous peoples (Véliz-Campos et al. 2024), and individuals with disabilities (Jensen et al. 2023) are either missing from textbooks or are imbalanced in terms of quantity and diversity compared to majority depictions. These portrayals have been criticized for sometimes reinforcing stereotypes or biases (Jensen et al. 2023; Véliz-Campos et al. 2024; Xiang and Yenika-Agbaw 2021).

¹ Kachru and Nelson (1996: 77–78) proposed a model categorizing English-speaking countries and users of English into three concentric circles: the Inner Circle, the Outer Circle, and the Expanding Circle. The Inner Circle consists of countries like the United States, the United Kingdom, Canada, Australia, and New Zealand, where English is spoken as the first language. The Outer Circle includes countries such as Nigeria, Singapore, Pakistan, South Africa, the Philippines, and India, where English is widely used as a second language due to historical ties, often stemming from colonization by English-speaking nations. The Expanding Circle encompasses countries where English is primarily regarded as a foreign language, such as Korea, Japan, and China.

Despite discussions on diverse social classes, ethnicities, cultures, and varieties of English, as seen in the studies above, there has been limited attention to how regional differences and characteristics within a country are depicted. To address this research gap, the current study aims to analyze and critically discuss whether and how English textbooks used in Korean elementary schools incorporate diverse regional characteristics of Korea. Based on this analysis and discussion, it is emphasized that the Artificial Intelligence Digital Textbook (AIDT), to be introduced in 2025, should be developed to provide regionally customized content and learning activities. This study, as a preliminary investigation prior to a broader review of elementary English textbooks across all publishers, focuses on textbooks from two publishers, Cheonjae Education and Daekyo Publishers.

2. THE NECESSITY OF REGIONALLY CUSTOMIZED ENGLISH TEXTBOOKS. This section discusses the need for English textbooks to shift away from centralized standardization and to adopt regionally adaptable versions that reflect local contexts and diversity.

2.1 THE ERA OF DECENTRALIZED EDUCATION. South Korea currently faces a crisis of regional depopulation due to a declining populace in rural areas, as much of the younger population migrates from local areas to the capital, Seoul. To address this social issue, experts emphasize the need to strengthen education centered around local regions. This would foster the development of local talent, enabling individuals to lead fulfilling lives within their communities and establish a sustainable, positive cycle for a community-centered educational ecosystem (Chun 2021; Kim 2020; Son 2020). In other words, it is crucial to equip students not with the sole aim of relocating to Seoul for employment or higher education but with the ability to strengthen decentralized solidarity based on their regional communities (Jung 2023; Kim 2020). To achieve this, experts argue that the educational system should be structured to support local autonomy (Baek et al. 2019; Yang 2020).

Additionally, the development of region-based curricula should involve opening the framework to local and municipal educational offices, district offices, schools, and classrooms (Jung 2023). In other words, merely disseminating and implementing a curriculum developed centrally cannot fulfill the goals of educational decentralization, diversity, and autonomy. The direct adoption of a centralized curriculum and educational materials does not reflect the characteristics of regional learners who experience different environments, histories, customs, societies, cultures, languages, and identities. Therefore, it is necessary to move beyond a state-driven, top-down curriculum and to develop materials directly linked to the lives of learners in specific regions.

Above all, to maintain a sustainable local education ecosystem, it is essential to produce and distribute textbooks that incorporate a regionally based curriculum. However, studies on the localization of English textbooks are rare in Korea. This is because the culture of a specific country where English is the native language has traditionally been regarded as foundational knowledge for learning the target language and understanding this culture has been believed to be crucial for international communication. For this reason, textbooks have promoted English from predominantly white, Inner-Circle countries (e.g., the United States and the United Kingdom) as a global language (Jang et al. 2011; Matsuda 2002; Xiang and Yenika-Agbaw 2021). Furthermore, as the importance of native culture grows, textbooks sometimes reflect a nationalist tendency that reproduces national pride and a sense of the 'other' by projecting universal values at the national level (Hino 1988; Jang et al. 2011; Véliz-Campos et al. 2024). Additionally, with the expansion of multicultural education in Korea, there is an increasing tendency to include the cultures of various countries in the Expanding Circle (e.g., China, Thailand, Vietnam) in English textbooks (Park et al. 2022).

However, for learners residing in local regions, this multicultural, multi-country, and centrally focused Korean culture can be quite different from their actual lives, challenging to understand, and even burdensome (Alzubi et al. 2023; Richards 2001). Discussions related to second language acquisition suggest that when learning materials include cultures familiar to the learner, it can enhance English learning (Alzubi et al. 2023; Krashen 1985). In other words, when socio-cultural content from a learner's region is included in English textbooks, it can make language acquisition easier for regional learners. This approach can also be supported by sociocultural learning theory. Bruner's (1996) theory of cultural psychology emphasizes that education related to the learner's culture enhances comprehension and memory. Vygotsky's (1978)

sociocultural theory also asserts that integrating learning materials with students' cultural contexts makes learning more effective and supports internalization and development. This approach makes learning more engaging by enabling students to use their existing experiences and knowledge, thereby facilitating language acquisition.

2.2 CRITICISM OF TEXTBOOKS THAT EXCLUDE MINORITIES. Previous studies on textbooks that marginalize minorities, using a critical content analysis approach, have conducted qualitative and quantitative analyses to demonstrate how these groups are excluded and how stereotypes and biases are presented to learners. Such narrow perspectives in textbooks also reveal the beliefs held by textbook authors and may be due to curricula that lack inclusion of diversity, inclusivity, and fairness. In a study by Jensen et al. (2023), an analysis of texts and images in 78 textbooks for grades 5-10 in Norway found that only 49% included representations of people with disabilities, and only 29% featured images of disabled individuals. In a survey conducted among textbook authors, the two main reasons cited for the absence of disabled representations were that the authors had overlooked disabled individuals and that the Norwegian national curriculum lacked explicit references to this minority group. Based on these findings, Jensen et al. (2023) emphasized that this omission of minorities is likely intentional rather than unconscious.

Véliz-Campos et al. (2024) examined how indigenous peoples are depicted in illustrations in 12 EFL textbooks used in Chile. They found that indigenous people were simplified into static, historical remnants disconnected from modern society. Publishers failed to recognize the richness and diversity of indigenous cultures, thereby perpetuating cultural stereotypes and contributing to an "othering" process that reinforces the separation between the majority (us) and indigenous minorities (them). The study concluded that a shift in awareness among educators and textbook developers is needed to address this issue.

In another study, Xiang and Yenika-Agbaw (2021) analyzed the frequency of cultural content in six English textbooks used for Mongolian ethnic minority middle school students in Inner Mongolia, China. They applied the Kachru and Nelson (1996) model of English spread to categorize and critically assess power relations depicted in the content. Their findings revealed an imbalanced representation of cultures and multicultural characteristics across the three circles (inner, outer, and expanding), a lack of diversity, and the reinforcement of stereotypes. Quantitative analysis showed that cultural content primarily featured China, the United States, the United Kingdom, and Canada, in that order, while Australia and New Zealand were omitted. For Outer Circle countries, only India was represented, and among Expanding Circle countries, China was most frequently featured, followed by Cuba, Japan, Italy, France, Greece, Egypt, and Spain. Within China, the Han ethnic group appeared in over 97% of the content, with five other minorities mentioned, while the remaining 50 ethnic groups were not included. Qualitative analysis indicated that while Canada was depicted as focusing on daily life, the U.S. and U.K. were associated with renowned historians, artists, and landmarks, suggesting a different power relation, and China was presented in a highly dominant role.

Despite the textbooks being intended for Mongolian minority students, the Han group was portrayed as representative of China, while other minorities were either silent or marginalized. Additionally, children in the textbooks were depicted as coming from affluent, middle-class families, which starkly contrasts with the lives of Mongolian students residing in rural areas. This indicates that English textbooks primarily represent the hegemony of American and Han urban lifestyles, which are not relevant to the sociocultural lives of Mongolian students. In conclusion, Xiang and Yenika-Agbaw argued that the lack of appropriate English textbooks for Mongolian students could result in lower achievement levels and emphasized the need for textbook authors to focus on developing textbooks suitable for Mongolian students.

2.3 ARTIFICIAL INTELLIGENCE DIGITAL TEXTBOOK (AIDT). The AIDT, set to be introduced in elementary, middle, and high school English education in March 2025, is defined as "a textbook equipped with various learning materials and support functions utilizing intelligent information technology, including artificial intelligence, to provide a range of customized learning opportunities tailored to each student's abilities and level" (Ministry of Education 2023: 9). In other words, with the introduction of AIDT, it becomes possible to offer regionally-based content that departs from the general practices of conventional paper-based English textbooks mentioned above. Additionally, since AIDT includes features that allow

teachers to restructure and add content based on their lesson planning, they can also incorporate regionally relevant material if they choose to do so. Of course, private companies developing AIDT need to be prepared to establish accurate and sufficient amounts of regional data. However, from a technical standpoint, there is great potential for AIDT to evolve into a tool that reflects the diverse characteristics of local communities.

Moreover, the Ministry of Education (2023) has set one of AIDT's guiding principles as avoiding standardization in education and providing equal learning opportunities regardless of students' social, cultural, or economic backgrounds, such as language, disability, region, or class. In other words, if discussions on the necessity of regionally based education gain momentum, AIDT could meet these demands in the future. This study, therefore, presents a content analysis of current paper-based English textbooks to illustrate how they marginalize regional aspects and promote overgeneralizations, emphasizing that AIDT should develop further to support regionally customized English education.

3. THEORETICAL BACKGROUND. This section illustrates the role of English textbooks and paradigms of large and small cultures proposed by Holliday (1999).

3.1 TEXTBOOKS. The various materials used in curricula are controlled by powerful social groups and reflect the current image of society. These learning materials influence learners' attitudes and dispositions toward themselves, others, and society (Ndura 2004). Textbooks, in particular, serve as tools for dominant social groups to reinforce existing social ideologies and maintain privilege by adding stereotypical role models associated with social/economic status, race, age, ethnicity, and gender (Sleeter and Grant 1991). Such content can perpetuate specific forms of inequality by sustaining particular power structures (Véliz-Campos et al. 2024). English textbooks, specifically, act as an immediate link between the target culture and the learner's own culture, making the way these cultures are depicted impactful on personal identity development. Therefore, a biased English textbook could pose a threat to the learner's positive identity formation.

3.2 PARADIGMS OF LARGE AND SMALL CULTURE. English textbooks are expected to introduce a variety of cultures, yet they have been criticized for disproportionately focusing on certain cultures while overgeneralizing specific minority groups. To address these imbalances and stereotypes, Holliday (1999) emphasized the need to separate culture into the paradigms of "large culture (large C)" and "small culture (small c)." Large culture encompasses static elements at ethnic, national, or international levels such as "history, geography, education, politics, clothing, family, food, films, celebrities, sports, and customs" (Rodríguez 2018). Rodríguez (2018) described large culture as something produced, an artifact, or an externalized behavior. Focusing on these large cultural aspects in curricula and textbooks can lead to excessive generalization and simplification of cultures, reinforcing stereotypes and fostering "otherization."

Holliday argued that the concept of small culture aids in understanding situational dynamics and allows flexibility in the interrelationships between cultures. Small culture refers to nuanced, everyday cultural elements that occur within small organizations and groups, such as communities, workplaces, schools, and classrooms, beyond the national or global perspective. It provides a detailed understanding of everyday culture experienced by individuals. Examples include social interaction and communication styles (individualism/collectivism, face-to-face, formality levels), values and ethics (equality, fairness, competition, rules, and regulations), personal growth and orientation (self-improvement, nurture/education, novelty-seeking, result-orientation), and material and power dynamics (materialism, male orientation, time) (Rodríguez 2018). Rodríguez also referred to this as internal culture. Wilson (2015) noted that while the large culture paradigm is based on essentialism, assuming fixed cultural characteristics, the small culture paradigm is grounded in non-essentialism, which acknowledges situational variability. This understanding of non-essentialism reveals how the concept of large culture can be used to maintain normative values of dominant ideologies, while introducing small culture helps move away from racial and nationalist stereotypes.

As an example, Holliday (1999) introduced the Pune Project, a collaborative educational project between the U.K. and India. He noted that conflicts within the project did not stem from differences at the

national level between the U.K. and India but rather from organizational cultural differences between the British Council and an Indian university's English department. Despite the British Council's team being entirely composed of Indian nationals, conflicts arose due to differences in organizational culture, reflecting dynamic social realities between small cultures rather than nations.

Rodríguez (2018) analyzed six EFL textbooks published by well-known publishers like Oxford, Cambridge, and Macmillan in Spain between 1992 and 2012. The findings indicated that large culture (231 instances) was represented significantly more often than small culture (100 instances), with variation among textbooks. Among them, one textbook presented a relatively balanced ratio of large culture (98 instances) to small culture (64 instances), suggesting a more integrated cultural approach. However, textbooks emphasizing large cultures displayed a stereotypical perspective, portraying specific cultures as objects of tourism. This also indicated that different publishers approach cultural representation differently.

Beyond the opposition between large and small cultures, imbalances can also occur within each concept. Lee (2009) reported that cultural content related to "region and regional diversity," part of large culture, was entirely absent from 11 high school English textbooks in South Korea. Eight textbooks were designed specifically for the Korean context and included aspects of Korean culture, such as national treasures, historical sites, and traditional markets like Namdaemun Market, along with directions to some streets in Seoul, promoting familiarization with popular shopping malls. This indicates that English textbooks reinforce a centralistic and nationalistic perspective.

Similar to Holliday's (1999) cultural paradigm, many researchers advocate for a transnational approach in English education, emphasizing the importance of teachers fostering critical reflection skills. Teachers should help students distinguish between information and misinformation, reality and unreality, and ideology and thought rather than simply delivering textbook content (Kumaravadivelu 2008; Rodríguez 2018). Additionally, the choice of cultural content in textbooks should be determined by the social context in which English will be taught and used (Rodríguez 2018: 285; Saville-Troike 2003). Learners should develop cultural sensitivity, beginning with an awareness and understanding of their own culture to foster respect for other cultures (Lai 2014; Rodríguez 2018). Based on these prior studies and theoretical background, the following research questions are proposed:

- (1) Do elementary English textbooks in South Korea include content related to regions (e.g., Jeju, Busan)?
- (2) If regional content is included, how are these regions represented?
- (3) What role and developmental directions should AIDT pursue for region-centered English education?

4. METHODOLOGY. This study adopts a critical content analysis approach, previously used in related studies, to analyze inclusivity, diversity, and fairness in elementary English textbooks. It applies Holliday's (1999) cultural paradigm to examine the frequency of regional representations in textbooks and to qualitatively and quantitatively analyze how each region is depicted. Based on this analysis, the study proposes roles and developmental directions for AIDT.

4.1 MATERIALS. Currently, elementary schools selectively use five types of English textbooks published by four companies: Daekyo, Cheonjae Education, YBM (Hye-ri Kim), YBM (Hee-kyung Choi), and Donga. Among these, the study selected the Daekyo and Cheonjae Education textbooks, as they are the most widely used in the Jeju region (Jeju City Office of Education 2024; Seogwipo City Office of Education 2024). All chapters of each grade-level textbook were chosen for analysis, excluding the "Review" sections in Cheonjae Education textbooks, as these are not part of the main text in each chapter.

4.2 ANALYTICAL FRAMEWORK. For the first research question, the study examines all chapters of the textbooks to identify mentions of regional names in South Korea. For the second research question, it employs Rodríguez's (2018) adaptation of Holliday's (1999) cultural paradigm, specifically utilizing the categories of large culture and small culture (Table 1), to conduct both qualitative and quantitative analyses. This mixed-methods approach allows for more comprehensive findings and discussions.

TABLE 1. List of Cultural Categories (Rodríguez 2018: 287–288)

Large Culture	Ethnic groups, geography, history, politics, regional variations, arts, crafts, monuments, historical sites, literature, films, music and mass media, icons, celebrities, currency, shopping, market, industry, business, urban life, infrastructure, housing, transportation, education, dress-style, food, festivals, celebrations, holidays, ceremonies, social customs, leisure, sports, family, non-verbal communication (personal space, oculusics, haptics) ²
Small Culture	Individualism, collectivism, equality, fairness, competition, materialism, confrontation, novelty oriented (newer is better), self-improvement, nurture (up-bringing, education), time, level of formality, communication styles: direct vs. indirect, rules and regulation-oriented, male-oriented, result-oriented

Excel was used to code instances of regional names in each textbook, including details such as chapter, page, content (sentence), and type of culture. Table 2 below provides an example of the coding process. Each unit and page was reviewed to identify which pages (Page) contain regional names (Region), how these regions are portrayed (Interpretation), and the type of culture represented (Culture type).

TABLE 2. Coding example.

Publisher	Grade	Unit	Title	Page	Region	Count	Content	Interpretation	Culture Type
Daekyo	6	5	What's wrong?	0	0	0	0	0	0
Daekyo	6	6	I'm going to go on a trip	21	Jeju-do	1	I'm going to go on a trip to Jeju.	Region name, travel destination	Large C
Daekyo	6	6		92	Sokcho	1	Let's go on a trip to Sockcho.	Region name, travel destination	Large C
Daekyo	6	7	You should wear a helmet	0	0	0	0	0	0
Daekyo	6	8	How can I get to the museum?	120	Incheon	1	Take a bus or subway to Incheon International Airport.	Airport name, transportation	Large C

The coded data were analyzed using both quantitative and qualitative approaches to provide a thorough understanding of regional representation within the textbooks. The quantitative analysis focused on counting the frequency of regional names, offering a statistical perspective on how often each region is referenced. In contrast, the qualitative analysis delved into the manner in which each region is portrayed, allowing for a nuanced exploration of the context and implications of these representations. The following

² Oculusics is the study of eye movement and other nonverbal communication related to the eye; haptics is the perception of objects by touch.

section presents the results in detail and discusses the findings in relation to the study's objectives and theoretical framework.

5. RESULTS AND DISCUSSION. The results in this section report both quantitative and qualitative findings along with a discussion. First, the study presents: 1) an analysis of the 6th-grade textbooks by publisher (Daekyo vs. Cheonjae Education), 2) an analysis across grade levels within the same publisher (Cheonjae Education: grades 3-6), and 3) a comprehensive summary of the frequency and cultural content of regional mentions found in these analyses.

5.1 COMPARATIVE ANALYSIS OF 6th-GRADE TEXTBOOKS: DAEKYO AND CHEONJAE EDUCATION. In Daekyo's 6th-grade textbook, regional content appeared in two chapters (Chapters 6 and 8) (see Table 3), while in Cheonjae Education's textbook, it appeared in only one chapter (Chapter 5) (see Table 4). In Daekyo's textbook, Chapter 6 is titled "I'm going to go on a trip," and Chapter 8 is titled "How can I get to the museum?". As shown in Table 3, Daekyo's 6th-grade English textbook features a total of five regions (Jeju, Sokcho, Incheon, Busan, and Seoul) in Chapters 6 and 8. Jeju, Sokcho, Incheon, and Busan are depicted as travel destinations or airports used for travel. Seoul, with the adjective "beautiful" describing *Deoksugung* palace, is portrayed as an important city in Korea, alongside the term "Korea." *Deoksugung* is highlighted as a cultural heritage site, emphasizing its significance within South Korea. This reflects a nationalist tendency to reproduce national pride, as mentioned by Jang et al. (2011).

TABLE 3. Regional Names and Frequency of Occurrences in Daekyo's 6th-Grade Elementary English Textbook.

Unit	Region	Count	Page	Content (sentences, words)	Interpretation	Culture type
6	Jeju	1	21	I'm going to go on a trip to Jeju.	Region name, travel destination	Large C
6	Sokcho	1	92	Let's go on a trip to Sokcho.	Region name, travel destination	Large C
8	Incheo	1	120	Take a bus or subway to Incheon International Airport.	Airport name, transportation	Large C
8	Busan	1	124	Title of the tourist map	Region name	Large C
8	Seoul	1	122	<i>Deoksugung</i> is a beautiful palace in Seoul, Korea	Royal palace name, positive descriptive word (beautiful), country name, Region name	Large C

Table 4 below presents the results of analyzing Cheonjae Education's 6th-grade textbook, where regional names appear in only one chapter (Chapter 5). The title of Chapter 5, "I'm going to see a movie," similarly depicts regional names (Gangneung, Busan, Jeju, Yongin, and Gyeongju) as weekend travel destinations, as seen in Daekyo's textbook.

TABLE 4. Regional Names and Frequency of Occurrence in Cheonjae Education's 6th-Grade Elementary English Textbook.

Unit	Region	Count	Page	Content (sentences, words)	Interpretation	Culture type
5	Gangneung	1	80	I'm going to go to Gangneung.	Region name, travel destination	Large C
5	Seoul, Korea	1	80	Seoul, Korea	Region name, travel departure	Large C
5	Busan	1	82	I'm going to Busan.	Region name, travel destination	Large C
5	Jeju-do	1	83	I'm going to Jeju-do with my family.	Region name, travel destination	Large C

5	Yongin	1	84	I'm going to go to Yongin with my family.	Region name, travel destination	Large C
5	Gyeongju	1	85	I'm going to go to Gyeongju.	Region name, travel destination	Large C
	Seoul	1	85	Seoul to Gyeongju (On the train ticket)	Region name, travel departure	Large C
5	Gyeongju	1	85	Seoul to Gyeongju (On the train ticket)	Region name, travel destination	Large C

However, it is noteworthy that in the case of Seoul, it is portrayed as the starting point for a weekend trip, implying that the textbook protagonist is based in Seoul. This may lead learners from other regions using these textbooks to perceive their areas passively, as places that receive tourists from Seoul. Although it suggests that individuals from various regions might travel to Seoul for weekend trips, it does not reflect the regional differences in lifestyle.

In comparing the two textbooks, both depict regions solely as travel destinations, which could reinforce the stereotype that provincial areas are primarily places for tourism. Furthermore, cultural analysis reveals a lack of diversity in cultural representation, with regions being depicted in a very uniform and narrow manner.

5.2 GRADE-LEVEL DIFFERENCES: GRADES 3-6, CHEONJAE EDUCATION. The regional representation by grade level is introduced only for Cheonjae Education's 3rd- to 6th-grade textbooks, with plans to analyze other publishers later. An analysis of the English textbooks from grades 3 to 6 showed no regional names in the 3rd-grade textbook, and only Seoul, labeled as "South Korea, Seoul," appears in Chapter 4 ("What time is it?") in the 4th-grade textbook, within an illustration showing world time zones. Similar to the depiction in the 6th-grade textbook, this reinforces the view of Seoul as a representation of South Korea.

As shown in Table 5, regional names appear more frequently in the 5th-grade textbook compared to the 6th-grade textbook. However, these regional mentions are concentrated in specific chapters, as in the 6th-grade textbook. The chapters featuring regional names are Chapter 6 ("What will you do this summer?") and Chapter 7 ("I visited my uncle in Jeju-do"), with regions depicted as summer vacation spots or past travel destinations, often visited with family or friends.

TABLE 5. Regional Names and Frequency of Occurrences in Cheonjae Education's 5th-Grade English Textbook.

Unit	Region	Count	Page	Content (sentences, words)	Interpretation	Culture type
6	Jeju-do	1	87	go to Jeju-do	Region name, travel destination	Large C
6	Busan	1	90	go to Busan	Region name, travel destination	Large C
6	Jeju-do	1	91	go to Jeju-do	Region name, travel destination	Large C
6	Yangpyeong	2	94	I will visit my uncle in Yangpyeong.	Region name, travel destination	Large C
6	Jeju-do	1	96	go to Jeju-do	Region name, travel destination	Large C
6	Jeju-do	1	98	I will go to Jeju-do this summer.	Region name, travel destination	Large C
6	Busan	1	99	visit my uncle in Busan	Region name, travel destination	Large C
6	Busan	1	103	Busan (Title of a poster)	Region name, travel destination	Large C
7	Jeju-do	2	106	- I visited my uncle in Jeju-do.	Region name, travel destination	Large C

				- Visited my uncle in Jeju-do.		
7	Jeju-do	1	109	I visited my uncle in Jeju-do.	Region name, travel destination	Large C
7	Jeonju	1	109	Jeonju (Title of a picture with food)	Region name, travel destination	Large C
7	Jeju-do	1	110	I visited my uncle in Jeju-do.	Region name, travel destination	Large C
7	Ulsan	2	114	- I went to Ulsan with my friends. - I visited my grandmother in Ulsan.	Region name, travel destination	Large C
7	Dokdo	3	115	- I went to Dokdo with my family. - I wore a Dokdo T-shirt. - I ate delicious seafood in Dokdo.	Region name, travel destination, shopping, food	Large C
7	Busan	1	118	I went to Busan with my family.	Region name, travel destination	Large C

An interesting aspect of the above analysis is that Dokdo, unlike other regions, includes additional cultural content. For example, there are references to wearing a T-shirt featuring Dokdo and enjoying delicious seafood there, suggesting engagement in cultural activities beyond simply visiting a destination. This depiction can be interpreted as implicitly emphasizing Dokdo's political and military significance. This interpretation is further supported by additional information on the same page, including a phrase in Korean that reads, "Let's recognize the efforts of our ancestors who protected Dokdo."

Through the grade-level analysis of textbooks, it was observed that regional references were entirely absent in lower grades (grades 3 and 4) but were depicted as travel destinations to visit with friends or family in higher grades (grades 5 and 6). This suggests that English textbooks tend to reinforce the stereotype of regions as tourist destinations rather than as places associated with social, economic, or educational activities.

5.3 SUMMARY OF REGIONAL NAME FREQUENCY. As can be seen, Table 6 summarizes the frequency of occurrence of regional names in Daekyo's 6th-grade and Cheonjae Education's 3rd-to 6th-grade English textbooks. Jeju Island appears most frequently (10 occurrences) across both the 5th- and 6th-grade textbooks from both publishers, followed by Busan (5 occurrences). Aside from Dokdo (3 occurrences), other regions appear only 1 or 2 times.

TABLE 6. Regional names and frequency in elementary English textbooks.

	Region	Count	Grade	Publisher
1	Jeju	10	5, 6	Daekyo, Cheonjae
2	Busan	5	5, 6	Daekyo, Cheonjae
3	Incheon	1	6	Daekyo
4	Sokcho	1	6	Daekyo
5	Gangneung	1	6	Cheonjae
6	Yongin	1	6	Cheonjae

7	Gyeongju	1	6	Cheonjae
8	Jeonju	1	5	Cheonjae
9	Ulsan	2	5	Cheonjae
10	Yangpyeong	2	5	Cheonjae
11	Dokdo	3	5	Cheonjae
12	Seoul	2	6	Daekyo, Cheonjae

Through the above quantitative and qualitative analyses, it becomes apparent that current paper-based English textbooks imply that the protagonist resides in Seoul, with other “regions” depicted as vacation or weekend getaway destinations for this Seoul-based main character (e.g., “I will go to Jeju-do this summer” or “I went to Busan with my family”). Jeju appears most frequently, indicating that the stereotype of Jeju as a tourist destination is reinforced through English education as students progress through the grades. This trend applies similarly to Busan, although it appears less frequently than Jeju.

Mentions of other regions are rare, and when they do appear, they are similarly portrayed as travel destinations. This demonstrates that the unique cultures and lifestyles of different regions are marginalized in English textbooks, reinforcing generalization and standardization within English education. Additionally, as all regional references represent tourist destinations, the content exclusively presents “large culture” elements without introducing diverse categories even within the large culture paradigm.

6. THE ROLE AND DEVELOPMENT OF AIDT FOR REGION-BASED ENGLISH EDUCATION. For over three decades, Korean elementary schools have relied on standardized, paper-based English textbooks, which limit teachers’ ability to modify content. In contrast, the forthcoming AI-enhanced digital textbook will allow teachers to supplement and customize learning materials frequently, better aligning content with students’ needs. This flexibility can enable the inclusion of regionally relevant content directly connected to students’ lives. Nevertheless, given the nature of AI, there is a risk that inadequate or inaccurate regional data could lead to misinformation and potential psychological distress for regional learners. For example, as seen in Figure 1, the AI-generated image of Jeju’s *Dolhareubang* (Figure 1-A) differs from the traditional *Dolhareubang* (Figure 1-B), highlighting the need for accuracy in region-based AI educational content.

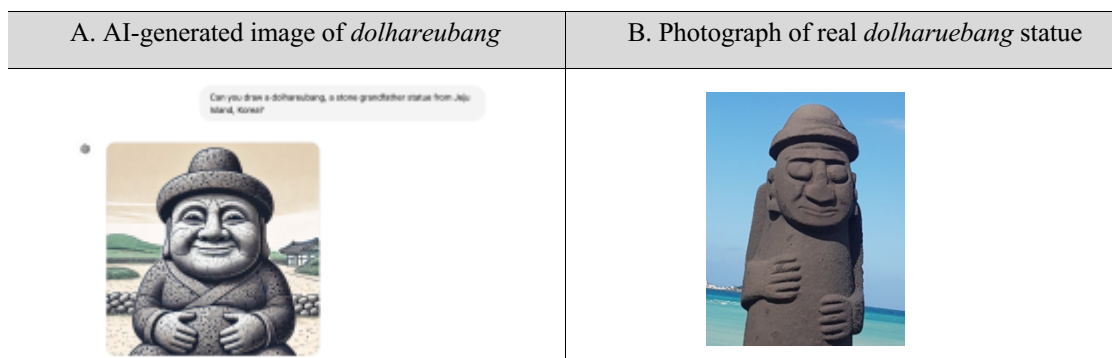


FIGURE 1. *Dolhareubang*.

For AIDT to build accurate and diverse regional data, collaboration between private companies developing AIDT and local experts is essential. Additionally, it is important for English teachers in regional schools to possess background knowledge of the region’s culture, society, economy, and history. Teacher training should be provided to enhance this background knowledge, enabling teachers to assess the accuracy of AI-provided content and recognize key regional information. Furthermore, municipal and regional

education offices, schools, and local experts should collaborate to develop a curriculum that supports regionally customized English education. Efficient and sustainable administrative structures should be established to support these efforts. A region-based curriculum and AIDT should also aim to include a balanced representation of both large and small cultures within the region, as well as cultural information on a national and international level.

7. CONCLUSION. This study highlights the tendency of traditional paper-based English textbooks in South Korea to marginalize or generalize regional areas and emphasizes the need for AIDT to support regionally customized English education. A critical content analysis of paper-based English textbooks from two publishers was presented as the foundation for this argument. Using as the theoretical framework Holliday's (1999) concepts of large culture (aspects such as geography, places, music, clothing, and food) and small culture (context-dependent aspects like communication methods), a mixed-methods approach was applied to interpret and infer results. Findings reveal that in current elementary English textbooks, regions outside Seoul are depicted either as travel destinations for a Seoul-based protagonist or are reinforced as tourist locations, and are often entirely excluded from representation. Moreover, small culture aspects that could vary by region are not present. Based on these findings, the study emphasizes the need for developing region-based English textbooks.

The introduction of AIDT is expected to help address issues related to diversity, inclusivity, and fairness. The AI functionality that allows teachers to reconstruct learning content relevant to students' characteristics and regional lives enables the provision of regionally customized content from a technical perspective. However, to address challenges related to data quantity and quality, collaboration among private companies developing AIDT, local and municipal education offices, support agencies, and experts is necessary. Additionally, to make effective use of AIDT's content reconfiguration and supplementary features, English teachers working in regional areas need to build background knowledge about their region. Teacher training programs, the development of a region-based curriculum, and the establishment of efficient and stable administrative structures are essential to support this initiative.

A shift to regionally customized English education will play a crucial role in helping learners develop a positive perception of their region, acquire English language skills directly connected to their lives, and grow into globally competent individuals both within and outside their regions.

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