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Second Language Teaching with a Focus on Different Learner Cultures for Sustainable Learner Development: The Case of Sino-Korean Vocabulary

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Abstract: Second language teaching (SLT) focuses on the cultural backgrounds of different learners. This not only facilitates the construction of knowledge using the learner's identity, but also helps learners acquire skills for cross-cultural communication, both of which are needed for learners to develop sustainably. Sino-Korean vocabulary is an important element in the representation of Korean culture and in teaching the Chinese language to Korean speakers. In addition, it is a means of promoting the Teaching Chinese as a Second language (TCSL) to achieve sustainable development for Korean learners. Much of the research on Sino-Korean vocabulary has focused on the similarities between Chinese and Korean cultures that facilitate Korean learners' understanding and use of Sino-Korean vocabulary, but little attention has been paid to the role played by cultural Sino-Korean vocabulary that represent the distinctive Korean culture. We collected a news corpus on six major themes from the NAVER website in Korea from between 2010 and 2020. The keywords were extracted using the TF-IDF algorithm and then transcribed and culled to form a distinctive cultural Sino-Korean vocabulary corpus. We examined the Korean Version of Experience Chinese: Living in China (Ti yan Han yu Sheng huo pian) and suggested that a collection of Sino-Korean vocabulary that are culturally distinctive to the learner's home country can provide a more pedagogically meaningful addition to the selection of words for TCSL textbooks. These words, based on similarities, further enable Korean learners to acquire a sense of familiarity with, and belonging to, their identity, and thus acquire the Chinese language, and also facilitate expression in intercultural communication. By extracting the distinctive Korean cultural Sino-Korean vocabulary and discovering their value in terms of TCSL educational material, we can promote the sustainable development of Korean learners.

Keywords: second language teaching; teaching Chinese as a second language; cultural backgrounds; corpus; Sino-Korean vocabulary

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Citation: Li, Y.; Wei, H.; Li, Y. Second Language Teaching with a Focus on Different Learner Cultures for Sustainable Learner Development: The Case of Sino-Korean Vocabulary. Sustainability 2022, 14, 7997. https://doi.org/10.3390/su14137997

Academic Editors: Lawrence Jun Zhang and Vincent T. Greenier

Received: 12 June 2022 Accepted: 27 June 2022 Published: 30 June 2022

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1. Introduction

The United Nations set out 17 Sustainable Development Goals in September 2015, of which SDG 4 is about quality education, and the full title of SDG 4 is "Ensure inclusive and equitable quality education and provide lifelong learning opportunities for all". (See, United Nations A/RES/71/313, https://undocs.org/A/RES/71/313, accessed on 5 March 2022). Achieving SDG 4.7 (SDG4 target 4.7: "By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development". From: https://www.un.org/sustainabledevelopment/education, accessed on 5 March 2022) is a broad topic, our study interprets it from the learner's perspective, arguing that: culture,

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knowledge and skills contribute to the achievement of learners' individual sustainablity. Respect for the diverse cultural backgrounds of learners helps to create an equitable and inclusive learning environment in which learners can acquire new knowledge and skills more effectively. It is clear that learning can bring income, employment, productivity, health and other rewards for individuals and countries. Second language teaching (SLT) comprises a part of quality education, and enabling a fair and inclusive learning environment for learners also needs to be observant of cultural diversity and the cultural backgrounds of different learners. This not only facilitates the construction of knowledge using the learner's identity, but also helps learners to acquire intercultural communication skills, both of which are required for learners to develop sustainably.

Korea was the first country in the world to open a Confucius Institute and has the highest number of Confucius Institutes in Asia, with 23 Confucius Institutes and 5 Confucius Classrooms. In 2016, Korea became the country with the largest number of people in the world taking the Chinese Language Proficiency Test (HSK, http://www.chinesetest.cn, accessed on 5 March 2022). As of 2017, 91 graduate schools, 180 universities, 150 colleges, 1000 high schools, 400 middle schools, and 100 elementary schools in Korea currently offer Chinese language or Chinese studies-related courses (From: Education Department of the Chinese Embassy in Korea, http://korea.lxgz.org.cn/korea/jyjl/20170816132501133536, accessed on 5 March 2022). How does Teaching Chinese as a Second language (TCSL) focus on the cultural background of Korean learners in order to provide high-quality teaching? A concern for cultural background facilitates the construction of Chinese knowledge using the learner's identity and enables learners to acquire intercultural communication skills more effectively. Therefore, in this study, we attempt to provide culturally relevant and meaningful Korean vocabulary for TCSL to promote the sustainable development of learners. Figure 1 illustrates our main research ideas:

- Label-1 is an interpretation of SDG 4.7 from the learner's perspective, in which we
 argue that culture, knowledge, and skills are essential for learners to achieve individual sustainability.
- Label-2 we reviewed the literature related to TCSL, learner identity, and intercultural communication (in Section 2) and suggested that TCSL should focus on the cultural background of learners.
- Label-3 is a specific research work that involves collecting a large number of words through technological means, referring to authoritative dictionaries (see Table A2) for transcription, deletion, and retaining culturally relevant pedagogical vocabulary for learners as a supplement to the materials.

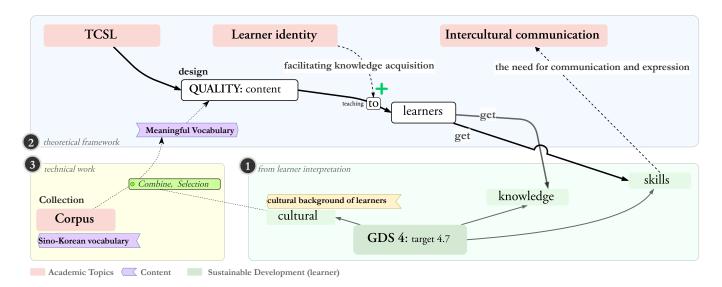


Figure 1. A summary of the research framework.

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Learner identity can be broadly defined as how an individual feels about themselves as a learner [1]. The different psychological sensations that learners experience when entering a second language culture have different effects on second language acquisition. Learners feel anxious and threatened when they enter a second language culture that is completely unfamiliar to them or that they have a conflicting relationship with, and this can discourage them from learning the second language [2,3]. In contrast, if the learner's home culture is similar to the second language culture, or even if the second language culture is related to the learner's national culture, the learner will acquire positive psychological and familiar feelings that will stimulate the acquisition of the target language [4,5]. The alignment (adaptation) of the learner's identity with the culture of the target language stimulates interaction with the target language [6]. In addition, learners have an intercultural communicative need to participate in a global society across borders and cultures, and to maintain and express themselves while being in close contact with different cultures [7,8]. They also need to avoid the communication barriers and conflicts caused by cultural differences. Paying attention to the cultural backgrounds of different learners will enable SLT to better provide learners with the language knowledge and intercultural communication skills they need to promote more peaceful, long-term participation in global dialogue and more opportunities for collaborative exchanges to achieve sustainable development.

Culture refers to all the different ways of life, both explicit and invisible, that have been created throughout history [9]. The cultural worldview of people is specific to each nationality, and it is through the linguistic worldview that the real world is reflected, with all the information fixed in words and phrases by means of a living language [10]. The history of Korea has been heavily influenced by Chinese culture and Chinese characters. The lexical system of the Korean language is composed of native Korean words, loanwords and Sino-Korean vocabulary [11,12]. According to the Standard Korean Language Dictionary (The compilation of Standard Korean Language Dictionary was commenced on 1 January 1992, by The National Academy of the Korean Language, the predecessor of the National Institute of Korean Language), out of the approximately 510,000 words in the Korean Language, 370,000 words (71%) were Sino-Korean vocabulary [13]. The Sino-Korean vocabulary that permeates the Korean language are the result of contact with Chinese culture since ancient times. Sino-Korean vocabulary are words in which each syllable corresponds to the Korean pronunciation of Chinese characters. The relationship with modern Chinese can be roughly divided into "homonyms" and "heteronyms" [14-16]. "Homonyms": such as "소 채(蔬菜)[shu cai]–蔬菜[shu cai]", both mean vegetable. "Heteronyms": such as "치약(牙 齿)[chi yao]—牙膏[ya gao]", both mean toothpaste. Because Sino-Korean vocabulary make up a large proportion of the Korean language, Korean learners need to use Sino-Korean vocabulary when expressing things and ideas around them. Sino-Korean vocabulary reflects the cultural background of Korean learners and TCSL needs to focus on Sino-Korean vocabulary for Korean learners. Previous studies have mostly explored Korean learners' understanding and use of Sino-Korean vocabulary from the perspective of similarities between Chinese and Korean cultures [17], but little attention has been given to the parts of Sino-Korean vocabulary that can represent the distinctive Korean culture. These words, based on similarities, further promote Korean learners' positive feelings, from which they can acquire the Chinese language and meet the needs of expression in cross-cultural communication. This can enable the TCSL to better achieve the sustainable development of Korean learners. It is therefore important to explore the distinctive Sino-Korean vocabulary that relates to Korean culture and what aspects of these words are valuable in TCSL.

This paper demonstrates that an emphasis on Sino-Korean vocabulary can provide quality TCSL for the sustainable development of Korean learners by providing materials for vocabulary learning that is relevant to their own distinctive culture and by discovering its value for teaching materials. We aim to specifically address the following issues:

 What Sino-Korean vocabulary can we provide for TCSL that are culturally distinctive to Korea? Sustainability **2022**, 14, 7997 4 of 17

Do the extracted distinctive cultural words have any usable value in terms of teaching materials?

2. Literature Review

2.1. The Influence of Different Learner Cultures on Learner Identity on the Construction of Knowledge

Identity in the field of second language learning is defined as the conscious and unconscious emotions and feelings of learners as they make sense of their relationship to the world in learning [18]. When learning a new language, learners bring their socio-culture into the process to develop a relationship with the socio-culture of the target language [19]. In addition, a learner's emotions and feelings towards the acquisition of a second language are often related to their socio-cultural environment. Uncertainty and anxiety arise when learners enter a new and unfamiliar culture and their own traditional cultural coherence is disrupted or their traditional culture is changed. The resulting psychological state gives rise to a powerful regression syndrome, which diverts energy and attention from second language learning. In this situation, learners are unlikely to make the necessary effort to become bilingual [2]. Krashen [20] proposed an "affective filter" hypothesis, which posits that when a learner's anxiety is high, they become less able to process language input, fail to take in the available target language messages, and do not progress in their language acquisition. According to a study by Xing [21], feelings of isolation and anxiety represented a serious problem that hindered international students coming to Korea for academic purposes.

If there is an antagonistic relationship between cultures, this can also affect a learner's psychology, and is not conducive to the acquisition of a second language. In the Saudi context, some argue that the import of Christian culture into the English language does not align with the culture of Arabic and Islamic societies [7], and that English can be used as a tool for Westernization that threatens the preservation of the Islamic faith and Saudi culture. Al harthi [3] investigated the relationship between second language learning, identity, culture, and motivation in Saudi Arabia. The findings suggest that various social factors associated with Saudi culture, particularly religion, influence students' motivation to learn English as a second language (ESL) in the Saudi context, and therefore discourage their beliefs and practices in learning English.

Conversely, similarity between a learner's native culture and the target language culture can facilitate second language acquisition, as shortening the social and psychological distance from the target language culture is an important condition for second language acquisition [2]. Italian and Croatian belong to two different language groups, but there is a long association between them that is influenced by historical, political, cultural, and economic circumstances. Alujević and Braović Plavša [4] verified that Croatia's close contact with Italian culture and the similarity of the language formation resulted in Croatian learners having a positive attitude, which stimulated their acquisition of the second language.

Furthermore, positive attitudes towards learners' language and culture in SLT and the addition of elements of the learners' native distinctive culture will also enhance learners' self-esteem and familiarity, which will contribute significantly to academic development [22]. Pujol and Corrius [5] conducted a survey of over 100 Catalan students and found that an emphasis on knowledge of the distinctive culture of the learners' home country was evident in improving reading comprehension speed. This native culture focus, along with a sense of familiarity with the dictionary definitions and/or examples from English as a foreign language (EFL) learners, facilitated comprehension in foreign-language learning. Attention to the cultural background of learners can be effective in avoiding the negative factors of learner identity in constructing knowledge and harnessing positive enabling factors to facilitate the acquisition of second language knowledge. We encourage quality second language teaching and learning to promote the sustainable development of learners.

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2.2. The Importance of Different Learner Cultures in Intercultural Communication Skills

In a process of globalization that is increasingly interconnected socially, economically, and culturally, people from different cultural backgrounds are interacting with each other with increasing frequency such that cultural interdependence has become a normal part of life. The traditional definition of culture, which understands culture as a unified feature shared by social groups, is not sufficient today [23]. On one hand, it is true that there are cultural inconsistencies and complexities within countries and that multi-ethnic cultures are diverse; on the other hand, there is also the undeniable intermingling of cultures from different countries. If globalization has three eras, with the main driver of version 1.0 being the state and the main driver of development in version 2.0 being the corporation, then the unique driver of globalization version 3.0 is the cooperation and competition of individuals on a global scale [24]. However, along with cultural dependence, people still preserve their national cultural identity, which is a sense of belonging to a particular country, nation, and culture that affects the attitudes of society, especially in the field of education [7], where learners need to define and express their identity through language [25].

Moreover, globalization must be critically seen as a contradictory phenomenon with both positive and negative features; the barriers to communication and conflicts caused by "cultural differences" also need to be resolved. Many communications have failed with regard to organizing international contacts, meetings, and negotiations, despite the increasing foreign-language skills of the participants. Communication fails because the communicator simply uses language as a set of symbols to represent concepts, ignoring the relationship between linguistic symbols and the speaker's thinking, and failing to consider the concept of national culture. Considering language as a universal form of reality, and comparing and clarifying the cultural features behind the world's linguistic landscape are key to promoting mutual understanding and successful cross-cultural communication [26].

The development of intercultural communication skills has gradually become a widespread focus in SLT, which also involves the cultures of different learners. Intercultural communication skills can only be acquired if attention is paid to the cultures of different learners, so that learners can understand their own culture and avoid contradictory involvement in other cultures. Standards for Foreign Language Learning in the 21st Century (1999) [27] shows that learners should have cross-cultural communication skills to gain a deep insight into their own language and culture and to participate fully in the global community. The Common European Framework (2001) [28] emphasizes the development of learners' ability to make connections between their own and foreign cultures, and to effectively resolve cultural misunderstandings and conflicts. The International Curriculum for Chinese Language Education (2014) [29] aims to develop learners' ability to express values in Chinese; to understand Chinese culture and the culture of the host country; and to tolerate, understand, appreciate and learn from other cultures in order to have intercultural competence.

In the above, we have illustrated the importance of SLT focuses on the cultural backgrounds of different learners in order to achieve sustainable learner development in terms of learner identity, knowledge construction, and intercultural communication skills.

2.3. Sino-Korean Vocabulary Studies

The study of Sino-Korean vocabulary is a reflection of the cultural background of Korean learners. The construction of knowledge using the learner's identity and the acquisition of intercultural communication skills are also key to the construction of knowledge by the learner. The emphasis on Sino-Korean vocabulary is conducive to the TCSL goal of achieving the improved sustainable development of Korean learners.

Most of the previous studies discussed the advantages of Korean learners over other learners in terms of understanding and using Sino-Korean vocabulary from the perspective of the similarities between Chinese and Korean cultures, bringing them closer and reducing the psychological and social distance to the target language culture [17]. In terms of comprehension, Li [30] points out that China and Korea are close in location and his-

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tory, and that there is cultural and emotional interchangeability. Korean learners have a strong understanding of the words that reflect traditional Chinese folklore, rituals, and spiritual and cultural life, significantly more than foreigners from European and American cultural backgrounds. For example, modern Koreans still strictly retain many customs and traditions that originated in Chinese Confucianism, such as annual tomb sweeping, ancestor worship, New Year's worship, etc. They have great respect for Confucianism and understand the various words related to it. Qi [31] examined the vocabulary list of a Chinese-language course and concluded that Korean learners can recognize the meaning of homonyms and homonymous Sino-Korean vocabulary, and that the familiarity of associating the meaning of Chinese words with the meaning of words in the Korean language when learning Chinese will act as an acquired positive transfer (in psychology, "transfer" refers to the influence of one kind of learning on another; the influence of skills, knowledge, or attitudes acquired in one context on the acquisition of skills, knowledge, or attitudes formed in another context). In terms of usage, Meng [32] argues that homographs of Sino-Korean vocabulary, which are considered positive twins by Korean learners, avoid the unfamiliarity that naturally leads to positive transfer. There are particular historical connections between Korean and Chinese language vocabulary. It is clear that these connections have not only influenced the language, but also show profound traces in the cultural perception of the learners. The similarities between Chinese and Korean cultures facilitate the construction of knowledge using the learner's identity and contribute to the achievement of the sustainable development of learners.

Furthermore, the cultural worldview is also specific and varies from one nation to another, depending on geography, climate, natural conditions, history, social systems, religion, traditions, and lifestyles. Learning Sino-Korean vocabulary with a distinctive Korean culture can build on the similarities between Chinese and Korean cultures, and further enables learners to gain a sense of familiarity, belonging, and the need for expression in cross-cultural communication, which is an equally important element in promoting the sustainable development of learners. Gan [33] argues that teaching Chinese to Korean learners is very different from teaching Chinese to Americans, the French, Germans, Arabs, etc., and that the focus of teaching is not the same. The selection of vocabulary should take into account not only the needs of the learners in terms of understanding Chinese, but also their need to express important things and ideas about their country in Chinese. She distributed questionnaires to 20 students in the Chinese Department of Walsong University in Korea to collect homographs with a distinctively Korean cultural meaning in order to develop a "country-specific" list to teach Chinese to Koreans. While it is interesting to take into account the learners' local culture, a corpus obtained in this way is limited in quantity and distribution, and a subjective selection bias is present. Therefore, in order to promote quality Chinese-language teaching for the sustainable development of learners, it is necessary to explore the elaboration of distinctive cultural Sino-Korean vocabulary and the specific aspects of the excavated vocabulary that can be applied to Chinese-language teaching.

The lexical material can be useful for textbook outlines, materials, translations, lexicography, etc. Römer [34] describes the use of pedagogical corpora in textbook outlines and in the design of materials in second language classrooms, such as corpora highlighting the words and collocations that are typical, providing us with a wide range of natural language. Pavlova [35] argues that corpora can help in the creation of dictionaries, grammar guides, textbooks, and reference materials. He lists the research goals and practical tasks that linguistic corpora can help us to achieve in translation studies and foreign-language teaching. These goals include aiming to validate the data in dictionaries and to fill the gaps in valuable information about language use and frequency of occurrence in dictionaries. In addition, the lexical corpus contributes to the study of children's second language acquisition, for example, a corpus study of verb–noun collocations identified the optimal developmental period for children's second language acquisition [36].

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A collection of Sino-Korean vocabulary representing the distinct Korean culture could be valuable in the selection of words for second language textbooks on Korea. Textbooks are not specific to a particular language or cultural background, but are developed according to the rules of the Chinese language itself, and have the advantage of focusing on the universal needs of learners and reaching a wide audience [37]. However, since the needs of Chinese-language learners vary among different countries and regions, teaching materials that do not incorporate the cultural improvements in the learners' home country often fail to satisfy the learning needs of learners [38]. The themes of the learning activities in textbooks fit into a certain socio-cultural context for learners that often elicit active participation [39]. Focusing on the second language learner output itself ensures a better match between teaching resources and learners' needs [40]: that is, "who are we teaching" is more important than "what should we teach foreign students" [41].

In summary, paying attention to the cultural backgrounds of diverse learners is important in promoting the sustainable development of learners in SLT. The exploration of the native distinctive culture of Korean learners and the value of its use in teaching materials is a reflection of the quality TCSL that focuses on the culture of Korean learners, facilitates the construction of knowledge using the learner's identity and also helps learners to acquire intercultural communication skills for the sustainable development of learners. The internet provides us with a wealth of cultural resources that are related to the lives of learners. In this study, we used Python crawler technology to collect a corpus of news on six major topics relating to traffic, leisure and tourism, food, weather, life and culture, and the environment from NAVER (https://news.naver.com, accessed on 5 March 2022) in Korea from between 2010 and 2020. After extracting the keywords through the term frequency-inverse documentation frequency (TF-IDF) algorithm, the keywords were transcribed and culled to form a distinctive cultural Sino-Korean vocabulary corpus. In addition, by extending Korean Version of Experience Chinese: Living in China (Ti yan Han yu Sheng huo pian) (ECLCK) [42], we propose a collection of Sino-Korean vocabulary with distinctive cultural characteristics of the learners'country that can provide a more pedagogically meaningful supplement to the selection of words for Korean teaching materials in TCSL.

3. Methods and Data

In this section, we describe the methods for acquiring and analyzing the Korean language text content. Salton and Yu [43] proposed the term frequency (TF) and inverse documentation frequency (IDF) algorithms, a statistical method to assess the importance of a term for one of the documents in a document set or a corpus. The importance of a term increases proportionally with its number of occurrences in a document, but decreases inversely with its frequency in the corpus. Jones [44] showed that the effectiveness of keyword retrieval was significantly improved by using weighted terms to construct a term-document matrix. This is often used as a weighting factor in searches for information retrieval, text mining, and user modeling [45]. TF-IDF includes TF and IDF. TF refers to the number of times a given term appears in a document. When we have multiple documents of different lengths, the term frequency is usually normalized (typically, the term frequency is divided by the total number of terms in the document). The main idea of IDF is that the smaller the number of documents containing the term, the larger the IDF value, and the stronger the ability of the term to classify documents. The term frequency tends to wrongly emphasize frequent keywords that do not distinguish between relevant and non-relevant documents (e.g., "the", "is", etc.). Considering the need to give sufficient weight to more meaningful terms, an inverse document frequency factor is generally used, which reduces the weight of the terms that occur very frequently in the document set, and increases the weight of the terms that occur rarely. A study by Salton and Buckley [46] showed that the TF-IDF algorithm has a wide potential for use in the field of information retrieval.

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3.1. Definition

The TF-IDF is the product of TF and IDF. tf(t,d) is the frequency of term t,

$$tf(t,d) = \frac{f_{t,d}}{n_d} \tag{1}$$

where $f_{t,d}$ is the raw count of a term in a document, i.e., the number of times that term t occurs in document d. n_d is the number of all the terms in document d.

The inverse document frequency of term t,

$$idf(t,D) = \log \frac{N}{|\{d \in D : t \in d\}|}$$
(2)

where D is the document set (corpus). N is the total number of documents in the document set (corpus). $|\{d \in D : t \in d\}|$ is number of documents where the term t appears. (For example, in the set of 10 documents, 3 documents contain the term ("hello"), then the value is 3).

3.2. Corpus Collection

In our study, we focused on 6 topics of news content among NAVER (see Figure 2), namely 도로/교통 (Traffic), 여행/레저 (Leisure and Tourism), 음식 (Food), 날씨 (Weather), 생활문화 일반 (Life and Culture), and 환경 (Environment). By using Python crawler technology, we collected the news corpus of NEVER from 2010 to 2020. We present the data collected for all documents in Table 1, column name $N^{(*)}$ indicates the number of documents under this topic, and column name $\sum_{d\in D} n_d^{(\star)}$ indicates the total number of words in all documents under this topic. Column name $\mathbf{File}^{(0,*)}$ is the file name of the dataset, which we have posted on the Mendeley Data.



Figure 2. NAVER: Korea's most popular news and information site: https://news.naver.com/main/main.naver?mode=LSD&mid=shm&sid1=103, accessed on 5 March 2022.

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| Topic | $N^{(*)}$ | $\sum_{d\in D} n_d^{(\star)}$ | File ^(0,*) |
|----------------------------|-----------|-------------------------------|-----------------------------|
| 도로/교통: Traffic | 20240 | 2792796 | Transportation_rawData.xlsx |
| 여행/레저: Leisure and Tourism | 206464 | 41407569 | Leisure travel_rawData.xlsx |
| 음식: Food | 37006 | 5796015 | Foo and drink_rawData.xlsx |
| 날씨: Weather | 190025 | 17529289 | Weather_rawData.xlsx |
| 생활문화 일반: Life and Culture | 266316 | 42448397 | Living Culture_rawData.xlsx |
| 화경: Environment | 161733 | 16720160 | Environment rawData.xlsx |

Table 1. Statistical description of NEVER news corpus from 2001 to 2020.

 $File^{(0,*)}$ detailed can be found in Table A1.

3.3. Corpus Processing

After obtaining the original text data, we used the following algorithm for each topic (see Algorithm 1), specifically, we calculated the TF–IDF value of each term in each document, and sorted the top 10 terms as the key terms of the document. In step 13 (Note*) of Algorithm 1, we obtained a matrix of the top 10 keyword terms for each document under each topic, then performed TF statistics. Finally, we were able to derive a list of the top 6000 terms in the topic. Due to the large number of terms in the terminology matrix \mathcal{L} , we selected the top 6000 terms for each topic using TF as a statistical indicator, and translated them into Chinese using a Korean dictionary (see Table A2).

Algorithm 1: Text Mining: Keyword Extraction Algorithm.

```
Data: document set D := \{d_1, d_2, \dots, d_i\}, term vector d_1 = \{t_1, t_2, \dots, t_i\}
    Result: top6000, High TF-IDF Frequency Keywords
1 begin
           term matrix: \mathcal{L};
                                                                                                          /* Initial value is empty (i \times i)*/
3
           counter: i = 0, j = 0;
           for d \in D do
4
                i ++;
 5
                 for t \in d do
                       \overset{f}{w}_{i,j} = \operatorname{tf}(t,d) \cdot \operatorname{idf}(t,D) = \frac{f_{t,d}}{n_d} \cdot \log \frac{N}{|\{d \in D : t \in d\}|};
 8
                      \mathcal{L}_{i,j}.Append(t, w_{i,j});
                 \mathcal{L}_{i,j}.Sort(by:w_{i,j})[:10];
                                                                                                /* descending rank and retain the top 10.*/
10
                \mathcal{L}_{i,j}.Reindex();
11
                                                                                                                               /* reset the index.*/
                                                                                                                   /* print \mathcal{L} (10 × j) result */
12
           OutputFile: File<sup>(1,*)</sup> (see Table A1)
13
           for t' \in \mathcal{L} do
14
                i, j \leftarrow t' . index()
15
                w_{i,j} = \operatorname{tf}(t', \mathcal{L}) = \frac{f_{t'}}{10 \cdot i};
                                                                                         /* where f_{t'} is the raw count of a term t' in \mathcal{L} */
16
           \mathcal{L}.Sort(by:w_{i,i})[:6000];
                                                                                             /* descending rank and retain the top 6000.*/
17
           OutputFile: File<sup>(2,*)</sup> (see Table A1)
18
           End
19
```

4. Results and Discussion

The data mentioned in this study were uploaded into Mendeley Data: http://dx.doi. org/10.17632/s5dsd97yjn.2 (accessed on 5 March 2022), as shown in Table A1.

4.1. Vocabulary Extraction

This study refers to homographs of Sino-Korean vocabulary with distinctive Korean cultural characteristics. At first, we followed the traditional word frequency statistics method to extract the top 2000 high-frequency words for each topic. However, it transpired that direct extraction, if sorted only from the perspective of word frequency count, would lead to problems, such as the top 2000 high-frequency words not being closely related to

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the topic, and a large number of duplicates and dummy words appearing between the boards. Therefore, in order to ensure that the words extracted were both high-frequency words and in line with our analysis themes, taking into account practicality, the TF–IDF algorithm was used to focus on the keywords of each article for each theme for a second extraction of the high-frequency words.

As shown in Table 2, the top 20 words extracted for each theme are closely related to the theme and reflect social life with Korean characteristics. In the "Traffic" theme, "경부선", "호남선" and "인천공항" are the common airports and routes used by learners in their travels. "경부선-京釜线-Gyeongbu Line" trains and railways are symbols of modern society. The Gyeongbu Line is one of the most important main rail lines in Korea and the oldest railway line. "호남선-湖南线-Hunan Line" is a train line to Jeolla Province. In the 1960s, the Korean government launched an economic development program, and people from all over the country began to flock to Seoul. Since then, almost all of their daily travels, discussion topics, and creations have been related to the Hunan Line [47]. "인천공항-仁川空港-Incheon Airport" is the representative international airport in Korea, through which most of the international routes in Korea pass [14].

Table 2. Short table (top 20) Sino-Korean vocabulary Selection Supplement.

| | 도로/: Traf | | | /레저 /Tourism | - | 식 od | | ·씨 ither | 생활문화 일반 Life/Culture | | 환경 Environment | |
|-------|--------------|------|-----|-----------------|-----|---------|-----|-------------|-------------------------|-----|-------------------|------|
| Index | SK | С | SK | С | SK | C | SK | С | SK | C | SK | С |
| 1 | 지하철 | 地下铁 | 울산 | 蔚山 | 한우 | 韩牛 | 기온 | 气温 | 북한 | 北韩 | 낙동강 | 洛东江 |
| 2 | 고속도로 | 高速道路 | 인천 | 仁川 | 한식 | 韩食 | 태풍 | 台风 | 화장품 | 化妆品 | 폐기물 | 废弃物 |
| 3 | 교통 | 交通 | 한국인 | 韩国人 | 요리 | 料理 | 황사 | 黄沙 | 의원 | 议员 | 지진 | 地震 |
| 4 | 전동차 | 电动车 | 화천군 | 华川郡 | 홍삼 | 红参 | 지진 | 地震 | 회장 | 会长 | 기후 | 气候 |
| 5 | 열차 | 列车 | 섬진강 | 蟾津江 | 차 | 茶 | 매우 | 梅雨 | 조선 | 朝鲜 | 환경부 | 环境部 |
| 6 | 국제선 | 国际线 | 강원도 | 江原道 | 라면 | 拉面 | 절기 | 节气 | 대통령 | 大统领 | 가습기 | 加湿器 |
| 7 | 철도 | 铁道 | 대전 | 大田 | 식당 | 食堂 | 폭설 | 暴雪 | 한류 | 韩流 | 수질 | 水质 |
| 8 | 국도 | 国道 | 통영 | 统营 | 삼계탕 | 参鸡汤 | 폭우 | 暴雨 | 저작권 | 著作权 | 지구 | 地球 |
| 9 | 인천공항 | 仁川空港 | 한우 | 韩屋 | 연어 | 鲢鱼 | 강풍 | 强风 | 광화문 | 光化门 | 산간 | 山间 |
| 10 | 국내선 | 国内线 | 춘천 | 春川 | 전통주 | 传统酒 | 온화 | 温和 | 전통 | 传统 | 대기 | 大气 |
| 11 | 휴게소 | 休憩所 | 금강산 | 金刚山 | 냉면 | 冷面 | 건조 | 干燥 | 사장 | 社长 | 오염 | 污染 |
| 12 | 주차장 | 驻车场 | 목포 | 木浦 | 소주 | 烧酒 | 대설 | 大雪 | 만화 | 漫画 | 생태계 | 生态系 |
| 13 | 항공사 | 航空社 | 성당 | 圣堂 | 교맥 | 荞麦 | 청명 | 清明 | 백제 | 百济 | 해양 | 海洋 |
| 14 | 호남선 | 湖南线 | 경기도 | 京畿道 | 음료 | 饮料 | 고온 | 高温 | 평양 | 平壤 | 야생동물 | 野生动物 |
| 15 | 연비 | 燃费 | 안면도 | 安眠岛 | 죽 | 粥 | 피서 | 避暑 | 고려 | 高丽 | 습지 | 湿地 |
| 16 | 고가 | 高架 | 진도 | 珍岛 | 두부 | 豆腐 | 기상청 | 气象厅 | 한복 | 韩服 | 방역 | 防疫 |
| 17 | 경부선 | 京釜线 | 단양 | 丹阳 | 곰탕 | 骨汤 | 온열 | 温热 | 청와대 | 瓦台 | 공기 | 空气 |
| 18 | 기차표 | 汽车票 | 장흥 | 长兴 | 인삼 | 人参 | 창원 | 常温 | 박물관 | 博物馆 | 폐수 | 废水 |
| 19 | 고장 | 故障 | 울진 | 蔚珍 | 생강 | 生姜 | 한기 | 寒气 | 아리랑 | 阿里郎 | 중금속 | 重金属 |
| 20 | 인천지하철 | 仁川地铁 | 속초 | 束草 | 유자 | 柚子 | 뇌우 | 雷雨 | 숭례문 | 崇礼门 | 발전소 | 发电所 |

SK: Sino-Korean vocabulary; C: Chinese characters.

Extraction of the words related to "Leisure and Tourism" showed local characteristics and cultural landscapes. "울산", "인천" and "대전" are all municipalities in South Korea with a population of over 1 million. "울산—蔚山—Ulsan", which combines tradition and modernity, preserves many Shilla era ruins, is Korea's largest industrial city, and home to the major companies of the Hyundai Group. "인천—仁川—Incheon" includes many islands and is rich in tourism resources, as well as being frequented by cargo ships from all over the world. It is also a very active Korean city in terms of trade with China, with a Sino-Korean vocabulary China Street" located here. Sino-Korean vocabulary "대전—太田—Daejeon" is one of the seven largest cities in Korea, and is an important transportation hub with railways passing through it, such as the Gyeongbu and Hunan lines. It is also known as an educational city with its World Expo, Science and Technology Park, and is famous for its hot springs and Daecheong Reservoir. "강원도—江原道—Gangwon Province" and "경기도—京畿道—Gyeonggi Province" are two adjacent regions: "Gangwon Province"

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is located in the north-east of Korea and is known for its famous mountains and hot springs, and is one of the country's leading tourist areas; and "Gangwon Province", centered on the Han River, is rich in tourism resources, especially Suwon Hwaseong, which has been recognized as a World Heritage Site, and Icheon, which has a ceramic civilization and is also a symbol of Korean traditional culture [15]. In addition, to experience a sense of Korean history, there is the "한우中韓屋—Hanok", which are tiled houses that were considered to be the homes of the upper class during the Joseon Dynasty, with the scale and furnishings of the houses reproduced in their original form. The houses are built with the wisdom of Koreans living in harmony with nature, and a sense of peace and tranquility can be experienced here [14].

"인삼-人参-Ginseng" is an important ingredient in the "Food" theme, and has been cultivated artificially since the late 18th century in the Li dynasty. "삼계탕-参鸡汤-Ginseng chicken soup" is an essential food for Koreans during the hottest days of summer, reflecting the Korean idea that "treating heat with heat" is the best way to escape the summer heat [14]. The most famous Foods such as "한우-韩牛-Korean beef" and "소주-烧酒-Soju" are also common in Korean households and have specialties in Korean restaurants of all sizes.

The evolution of the history of Korea can be seen in the distinctive cultural Sino-Korean vocabulary in the "Life and Culture" theme. "백제-百济-Baekje" and "고려-高丽-Goryeo" have changed from dynasty to dynasty. When the Korean peninsula was divided, a new feudal force established Baekje until it was destroyed by Silla. The Goryeo dynasty was the second unification of the Korean peninsula after Silla. "会례是-崇礼门-Chongryemun" and "광화문–Gwanghwamun" are the magnificent gates of the Joseon Dynasty. "Chongryemun" is the largest of the many gates and is now a major landmark in Seoul. "Gwanghwamun", the main gate of Gyeongbokgung Palace, was named with the meaning of "shining light on and educating the whole country", displaying the pride of the newly established state at that time, and is now a historical site in Seoul [14]. "대통령- 大統领–Da tongling" (Japanese and Korean designations for republican heads of state) and "의원-议员-Congressman" reflect the different social institutions of North Korea and South Korea, which are essential to discussions of historical and modern social changes. The term "한복-韩服-Hanbok" reflects the heritage of traditional culture and its contemporary spread. Hanbok is the traditional costume of the Korean people, but is still worn by Koreans at important festivals and ceremonies in modern society, such as Chinese New Year, the Mid-Autumn Festival, and weddings.

The "Weather and Environment" theme reflects Korea's monsoonal climate, characterized by hot and stormy summers, cold and dry winters, and occasional snow, earthquakes, typhoons, and other phenomena [14,15]. Of course, the words "청명—淸明—Qingming", "대설—大雪—Majorsnow", and "절기—节气—Jieji" represent the Korean culture and the commonality of the Chinese and Korean cultures. Environmental issues such as "오염—污染—Pollution", "황사—黄沙—Yellow sand", and "방역—防疫—Epidemic prevention" are also issues that need to be addressed by all countries.

It is evident that our method extracted Sino-Korean vocabulary that relate to the distinct Korean culture and that demonstrate the Korean people, reflecting the promotion of sustainable development from the perspective of the learners' culture. Next, we sought to discover its value in terms of teaching materials to illustrate the importance of a focus on the cultural background of learners in promoting SLT for the sustainable development of learners.

4.2. An Examination of Sino-Korean Vocabulary in ECLCK

The ECLCK [42] is one of the most popular textbooks published in China for Korean beginners to learn the Chinese language. The concept of experiential teaching and the design of task-based teaching are adopted, with practical communicative tasks as the main theme, focusing on the development of listening and speaking skills. The book consists of 1 unit of phonics training and 12 units of study. As a language textbook for Korea, ECLCK [42] is equipped with the appropriate Korean language content in terms of

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word interpretation, grammar, and illustrative language. However, the connotation of the cultural backgrounds of learners needs to be reflected, not only in the language translation, but also in the design of the teaching textbook to highlight the key points and difficulties. It is precisely the selection of Sino-Korean vocabulary that reflects the deeper meaning of teaching to Korean learners. We used the following three vocabulary outlines that can be employed in TCSL for word selection:

- Vocabulary syllabus: the Chinese Proficiency Vocabulary and Chinese Character Grades Syllabus (CPV-CCGS) (1992) [48].
- The Graded Chinese Syllables, Characters and Words for the Application of Teaching Chinese to the Speakers of other Languages (GCS) (2010) [49].
- The new Chinese Proficiency Test vocabulary (HSKv) (2012) [50].

We examined the word selection by comparing the ECLCK [42] with these three corpora in terms of Sino-Korean vocabulary. The total number of vocabulary words in the textbook is 491, from which 118 Sino-Korean vocabulary were extracted, accounting for approximately 24% of the total vocabulary. Table 3 shows the distribution of the 118 Sino-Korean vocabulary in the textbook with respect to the CPV-CCGS [48], GCS [49], and HSKv [50] syllabus levels. The syllabus difficulty of level (A) is less than that of level (B), and so on to (D). "Out" means the syllabus is not included. One case is noticeable: if the word "病人-sick person" is not in the syllabus but the words "病-sick" and "人-person" are in the syllabus, then the word will be marked in the row "other".

| CPV-CCGS [48] Level | * | ^ | % | GCS [49] Level | * | ^ | % | NHKv [50] Level | * | ^ | % |
|------------------------|------|----------|-------|-------------------|------|----------|--------|--------------------|------|----------|--------|
| (A) | 1033 | 91 | 8.80% | I.① | 509 | 61 | 11.98% | HSK1 | 150 | 41 | 27.33% |
| (B) | 2018 | 11 | 0.54% | I.2 | 835 | 20 | 2.40% | HSK2 | 150 | 23 | 15.33% |
| (C) | 2202 | 2 | 0.00% | I.3 | 901 | 3 | 0.33% | HSK3 | 300 | 13 | 4.33% |
| (D) | 3569 | 1 | 0.00% | II | 3211 | 20 | 0.62% | HSK4 | 600 | 9 | 1.50% |
| out | | 6 | | III | 4175 | 5 | 0.12% | HSK5 | 1300 | 6 | 0.46% |
| other | | 7 | | adv. | 1461 | 0 | 0.00% | HSK6 | 2500 | 1 | 0.04% |
| | | | | out | | 4 | | out | | 4 | |
| | | | | other | | 5 | | other | | 21 | |
| total | | | 9.34% | | | | 14.71% | | | | 42.66% |

Table 3. Levels and numbers in different syllabuses of Sino-Korean vocabulary in textbooks.

♣ refers to the total number of words included in the syllabus at given level; ♠ indicates the total number of Sino-Korean vocabulary in the textbook at given level; $\% = \spadesuit / \clubsuit * 100\%$, (e.g., 91/1033 = 8.80%); blue cell: primary part of the syllabus.

The results from ECLCK [42] compared to the three vocabulary outlines show that the elementary Sino-Korean vocabulary are the most frequent. The CPV-CCGS [48] corresponds to levels (A) and (B) for elementary Sino-Korean vocabulary; the GCS [49] corresponds to levels I.①, I.② and I.③ for elementary Sino-Korean vocabulary; and the HSK 2012 [50] corresponds to levels HSK1 and HSK2 for elementary Sino-Korean vocabulary. The summation results from the data in Table 3 are 9.34%, 14.71%, and 42.66%, respectively, which is in line with the definition of this textbook as being suitable for beginners. However, in comparison with the CPV-CCGS [48], the GCS [49], and the HSKv [50], the number of "distinctive cultural words" in the 118 Sino-Korean vocabulary extracted from the textbook is very small. These Sino-Korean vocabulary are not sufficiently related to the learners' own cultural environment.

The CPV-CCGS [48] mainly identifies vocabulary from commonly used words in modern Chinese and word lists for teaching Chinese in primary and secondary schools. It is used as the basis for the main questions in the Chinese Language Proficiency Test for elementary, intermediate, and advanced levels in China, as well as being a reference for international Chinese-language teaching. Although the 1992 vocabulary syllabus was selected from materials that were mostly taught in the mother tongue of the country's own people and was intended for students in primary and secondary schools and ethnic minorities in their own countries, its positioning also serves as a reference for international

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Chinese-language teaching. However, native learners grasp the intrinsic rules of sentence formation through their cognitive abilities, whereas non-Han learners are confronted with the system of effective communication in Chinese [51]. The textbook for Korea is an "outward-looking" textbook and should not be confused with an "inward-looking" textbook, so this syllabus is less applicable when used as a basis for word selection.

The GCS [49] was written against a backdrop of great changes in social life and a shift in international Chinese-language teaching. It is based on a large, contemporary, dynamic corpus of more than three billion words, such as the Radio and Television Dialogue Program Corpus, the Comprehensive News Corpus of Newspapers, Radio, and Television, the Modern Chinese Dictionary, the Syllabus of Chinese Language for Foreign Students in Higher Education, and other relevant and representative dictionaries, word lists, and character lists. Its main and basic use is to provide a basis for the design and development of teaching materials, classroom teaching, and curriculum testing for the teaching of Chinese as a foreign language around the world and in China. This syllabus has been collated over a long period of time and is rich in terminology used by international students. However, the material collected focuses more on teaching learners about the target country and less about the culture of the learners. It is difficult to find expressions that are specific to the culture of the learner's home country in this syllabus.

Based on a thorough survey of actual Chinese-language teaching, the HSKv [50] was designed for learners of Chinese as a non-first language as well as native speakers. It helps learners assess and evaluate their ability to use the Chinese language for communication in life, study, and work. Attainment of Level 1 means being able to understand and use simple words and sentences to meet specific communicative needs and having the ability to learn Chinese further. At Level 2, being able to engage in simple and direct communication in Chinese on familiar everyday topics means that the learner is at an excellent beginner standard. The syllabus takes full account of the current situation in Chinese-language teaching and develops learners' intercultural communication skills. However, it is a general syllabus for all learners and pays relatively little attention to learners of Chinese from different countries or regions.

Distinctive Sino-Korean vocabulary that relate to culture may be valuable for use in teaching materials, and a basic framework for word selection can be established for Korean teaching materials. Thus, we recommend that the existing vocabulary syllabus at all levels is supplemented with a collection of distinctive Sino-Korean vocabulary that are related to culture based on keywords extracted from real Korean websites in the last ten years, so as to establish genuine Korean-specific teaching content and to promote quality TCSL for the sustainable development of learners.

5. Conclusions

We found that a collection of distinctive Sino-Korean vocabulary may satisfy the psychological senses of Korean learners in second language acquisition on the basis of similarity. The words may also effectively reflect the learners' own social and cultural contexts, satisfy the learners' sense of national cultural identity, and enhance their ability to use the Chinese language to express themselves and comment on the things and phenomena around them, thus better promoting the sustainable development of learners.

This study first examined the importance of the cultural backgrounds of different learners in relation to quality second language teaching and learning to achieve sustainable learner development in terms of the construction of knowledge by learner identity and the need for intercultural communication. We then chose Korean Chinese-language learners as the subject of the study, and explored the content that can reflect distinctive Korean culture to promote quality TCSL to achieve the sustainable development of learners. We collected a news corpus on six major topics from the Korean NAVER website from between 2010 and 2020, and used the TF–IDF algorithm to extract the high-frequency keywords of each article for each topic. This method succeeded in avoiding issues of having no thematic differences in the first 2000 high-frequency words and a large number of repetitive and dummy words,

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which are caused by relying solely on traditional word frequency statistics. This method could also compensate for the quantitative and distributive limitations and subjective selection bias of the questionnaire-derived corpus, and we were finally able to obtain distinctive Sino-Korean vocabulary that represented Korean culture after transcription and rejection.

In addition, we examined the word selection of the ECLCK [42] textbook and found that there were very few "distinctive cultural Sino-Korean vocabulary" in the textbook. Therefore, the extracted Sino-Korean vocabulary with distinctive cultural characteristics relating to Korean learners are of value in terms of the textbook. Thus, it is suggested that the existing vocabulary syllabus should be supplemented by a collection of Sino-Korean vocabulary with cultural characteristics of the learners' home country in order to provide a more pedagogically meaningful supplement to the selection of TCSL materials.

While this study focuses on Sino-Korean vocabulary with distinctive Korean culture characteristics, it is less concerned with the similarities between Chinese and Korean cultures. However, it will be beneficial for learners to gain a clearer understanding of the historical origins of the Chinese-Korean language and to establish contemporary lexical connection (also means cultural links) between Chinese and Korean, so as to assist learners in developing the ability to converse between Chinese and Korean cultures. Moreover, future research could also explore the value of the Sino-Korean vocabulary corpus in areas other than textbooks and their applications.

Author Contributions: Conceptualization, Y.L. (Yishu Li) and H.W.; methodology, Y.L. (Yongjian Li); software, Y.L. (Yongjian Li); validation, Y.L. (Yishu Li); investigation, Y.L. (Yishu Li) and H.W.; resources, Y.L. (Yongjian Li) and Y.L. (Yishu Li); data curation, Y.L. (Yishu Li); writing—original draft preparation, Y.L. (Yishu Li) and H.W.; writing—review and editing, Y.L. (Yishu Li) and H.W.; visualization, Y.L. (Yongjian Li); supervision, H.W.; project administration, Y.L. (Yongjian Li); funding acquisition, Y.L. (Yishu Li). All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data that support the findings of this study are available from Mendeley Data [http://dx.doi.org/10.17632/s5dsd97yjn.2] (accessed on 5 March 2022).

Acknowledgments: The authors thank the editor and two anonymous reviewers of the paper. Their constructive suggestions and comments have considerably improved the quality of the paper.

Conflicts of Interest: The authors declare no conflict of interest.

Abbreviations

TF

The following abbreviations are used in this manuscript:

Term Fequency

| CPV-CCGS | Chinese Proficiency Vocabulary and Chinese Character Grades Syllabus (1992) |
|----------|---|
| ESL | English as a Second Language |
| ECLCK | The Korean Version of Experience Chinese: Living in China |
| GCS | The Graded Chinese Syllables, Characters and Words for the Application |
| | of Teaching Chinese to the Speakers of other Languages (2010) |
| IDF | Inverse Document Frequency |
| HSK | Chinese Language Proficiency Test |
| HSKv | New Chinese Proficiency Test Vocabulary (2012) |
| SDGs | Sustainable Development Goals |
| SLT | Second Language Teaching |
| TCSL | Teaching Chinese as a Second Language |
| | |

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Appendix A

Table A1. Mendeley Data: [http://dx.doi.org/10.17632/s5dsd97yjn.2] (accessed on 5 March 2022).

| Index | Folders/File Name | Description |
|-----------------------|---|--|
| File(0,*) | [00]RawData_year_title_topic_content | the original text data we obtained from NEVER website; |
| File ^(1,*) | [01]topic_all_term_info_withDoc_top10 | the result data calculated from steps 1 to 12 of the Algorithm 1, (i.e., the data set of the top 10 keywords for each document in each topic); |
| File ^(2,*) | (02]keyWordTop10_head6000_withChinese | the dataset of Chinese translation using the dictionary mentioned in Table A2 after step 13 of the algorithm, where the first 6000 words were intercepted; |
| File ^(3,*) | (03] Chinese Korean Words_Selection_Supplement | the dataset of manually selected words used to supplement country-specific textbooks; |
| File ^(4,*) | $) long Table_Chinese Korean Words_Selection_Supplement.pdf$ | the dataset of manually selected words used to supplement country-specific textbooks long table pdf verison. |

Table A2. Korean Dictionary Resources.

| No. | Dictionary Resources |
|-----|--|
| 1 | 에듀월드 표준한한중사전–Standard Korean-Chinese Dictionary |
| | https://stdict.korean.go.kr/main/main (accessed on 5 March 2022) |
| 2 | 한국관광공사 관광용어 외국어 용례사전–Korea Tourism Organization Dictionary of Foreign Language Terms for Tourism |
| | http://www.visitkorea.or.kr/intro.html (accessed on 5 March 2022) |
| 3 | 고려대 한한중사전–Koryo University Chinese-Korean Translation Dictionary |
| | https://riks.korea.ac.kr (accessed on 5 March 2022) |
| 4 | 삼청 KPMG 회계세무용어사전–Mitsui KPMG Dictionary of Accounting and Taxation Terms |
| | https://book.naver.com/bookdb/book_detail.nhn?bid=2090133 (accessed on 5 March 2022) |
| 5 | 한충상품용어사전–Chinese-Korean Dictionary of Product Terms |
| | https://book.naver.com/bookdb/book_detail.nhn?bid=7011762 (accessed on 5 March 2022) |
| 6 | 라인딕 중영사전–Leyendyk's Chinese-English Dictionary |
| | https://dict.naver.com/linedict/zhendict/#/cnen/home (accessed on 5 March 2022) |
| 7 | 고려대 중한사전–Koryo University Chinese-Korean Dictionary |
| | https://book.naver.com/bookdb/book_detail.nhn?bid=26385 (accessed on 5 March 2022) |
| 8 | 한국외대 한국어학습사전–Korean Language Learning Dictionary |
| | https://krdict.korean.go.kr/mainAction (accessed on 5 March 2022) |
| 9 | 오픈마인드 e-한자–Chinese Characters |
| | http://e-hanja.lib.studynow.kr (accessed on 5 March 2022) |
| 10 | 호텔스컴바인 호텔정보–hotels combined |
| | https://hotels.biyi.cn (accessed on 5 March 2022) |
| 11 | 에듀월드 표준중중한사전–Chinese-Korean Dictionary in World Standard |
| | https://book.naver.com/bookdb/book_detail.nhn?bid=9374403 (accessed on 5 March 2022) |
| 12 | 교학사 현대중한사전–Teaching History |
| | https://book.naver.com/bookdb/book_detail.nhn?bid=2533229 (accessed on 5 March 2022) |
| 13 | 학고방 최신중한신조어사전–Latest Chinese and Korean Newly Made Words Dictionary |
| | https://book.naver.com/bookdb/book_detail.nhn?bid=6060672 (accessed on 5 March 2022) |
| 14 | 건홍리서치 중국금융경제사전–Chinese Financial and Economic Dictionary |
| | https://book.naver.com/bookdb/book_detail.naver?bid=6050527 (accessed on 5 March 2022) |
| 15 | 연세대 한국어학당 국가별 대표음식–Yonsei University Korean Language School Countries' Representative Diet |
| | https://www.yskli.com (accessed on 5 March 2022) |

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