

A corpus-based analysis of central modal verbs in *Kurikulum Merdeka*'s textbooks for senior high school

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ABSTRACT

Textbooks play the important role since they provide the material sources beneficial for students. However, some textbooks sometimes contain inauthentic materials and there are some words or sentences are barely used in everyday communication. Moreover, modal verbs are also important in teaching and learning process since they are the most problematic grammatical units. This study aims to examine the frequency use of possibility, ability, and permission central modal verbs in conversation sections in Kurikulum Merdeka's textbooks, comparing with the spoken sub-corpus of COCA. This study uses corpus-based analysis and the research is categorized as descriptive qualitative. The data sources consist of three series of Kurikulum Merdeka's textbooks for senior high school in Indonesia. The findings reveal that "can" emerges as the most frequently used central modal verbs in both textbooks (79%) and COCA (50%), dominantly expressing a sense of ability in conversation sections of textbooks. Furthermore, "could" occupies the lowest position in conversation sections of textbooks (3%), whereas it ranks as the second most common used in COCA. Hence, "could" is not well presented in the textbooks compared to that in spoken sub-corpus COCA, indicating there is a mismatches in the usage of possibility, ability, and permission central modal verbs between the textbooks and COCA.

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1. Introduction

Modality is a condition in which speakers tend to talk about real situations and things that are possible or necessary to happen. This expression, including modal verbs, is manifested by many realizations of linguistic use (Collins, 2009; Palmer, 2014; Quirk, 1985). Therefore, modal verbs are important in language use, and the changes are dynamic in a society (Collins, 2009). Modal verbs are frequently used in everyday communication since they have simple forms but are also wide in semantic connotations and communicative functions (Li, 2017). In English, several modal verbs must be included as auxiliary verbs. The existence of these modal verbs is very important, namely will, would, can, could, may, might, shall, should, and must. These nine modal verbs are then classified into five expressions: ability, permission, obligation, advice, and possibility. In English learning and teaching, modal verbs are also crucial since they are considered the most complex and challenging grammatical units (Mukundan & Khojasteh, 2011). This challenge and complexity often cause

errors in learning modal verbs, especially for EFL learners. Modal verbs refer to different meanings and, in some instances, also share similar primary meanings. On the other hand, modal verbs are also problematic for native English speakers (Holmes, 1988). For example, modal verbs "may" and "might" can convey doubt and certainty. Nevertheless, "may" can also have alternatives to express other modal functions, such as permission and serving as a politeness language (Holmes, 1988). These problems certainly affect EFL learners' learning process as it might lead the learners' misconception with using modal verbs. So, textbook authors and teachers should present the modal verbs in teaching materials with the authentic use of English in daily life, especially for textbooks.

Textbooks hold an important role since they provide beneficial learning sources, especially for EFL learners (Charalambous, 2011; Radić-Bojanić & Topalov, 2016). Textbooks are designed for particular educational purposes and equipped with learning facilities. They are systematically organized to achieve learning objectives and support the learning programs. As educators, teachers also need books that provide texts and tasks that engage students effectively and cognitively and help teachers adapt and determine materials with methods that suit students (Tomlinson, 2023). In line with Tyson & Woodward (1989), approximately 90 percent of classroom activities rely on the content of textbooks, teachers are typically encouraged to follow the textbook material, and examination material tends to align with the textbook materials. However, some textbooks may contain inauthentic material, it means there are certain words barely used in everyday communication. According to Collins (2006), he claimed that textbooks do not always provide the "real" use of English and sometimes the information is not accurate about English authenticity, for example in English communication. On the other hand, students are expected to use English in daily life as the role of authentic materials in teaching English. Therefore, authentic materials in English teaching are used to improve students' skills in applying English in real life. In addition to being easy to learn, the material in the textbooks should be authentic. Based on the explanation above, non-native English speakers should not rely on their intuition and feelings when designing textbook materials. This problem can be overcome by consultation with the corpus as it provides a large collection of natural texts and represents the authentic use of language, which can be beneficial for designing textbook materials (Burton, 2012; Timmis, 2015).

Fortunately, numerous modal verbs have been studied using corpus-based analysis in language teaching, especially EFL. Many of them have found mismatches between modal verbs used in textbooks and the authentic or 'real' use of English implemented in the corpus. This means that the language used in textbooks does not represent the actual use of English, and this is a common case when comparing the language used in textbooks with corpus results. Some corpus-based studies have been conducted on textbooks (Arellano A, 2018; Burton, 2012; Leung, 2016; Norberg & Nordlund, 2018; Phoocharoensil, 2017). The studies prove that ELT textbooks do not encompass the language as it is used authentically in English. Similarly, a variety of modal verbs studied in language education in Malaysia, China, Egypt, Japan (Al-Ghalban, 2015; Laleh & Shokrpour, 2015; Li, 2017; Mukundan & Khojasteh, 2011; Nozawa, 2010). Therefore, based on those explanations, the researcher investigates the use of possibility, ability, and permission modal verbs in EFL textbooks for senior high school in Kurikulum Merdeka compared to the use of central modal verbs in a control corpus. Moreover, this study also focuses on investigating the spoken sections, the dialogues, or conversations that are presented in the textbooks. In analyzing the corpus data, this study applied one corpora, namely *Corpus of Contemporary American English* (COCA), as control corpus. Hence, this study attempts to answer the following questions: 1) what are the most frequent central modal verbs of possibility/ability/permission in the textbooks conversation sections and COCA spoken sub-corpus? and 2) what are the similarities and differences regarding the use of possibility/ability/permission central modal verbs in textbooks compared with COCA?

2. Method

This research engaged a corpus-based approach, which involved descriptive qualitative data analysis methods. This research focuses on Kurikulum Merdeka's textbooks for senior high school level published by the Indonesian Education Ministry. The researcher limited only three books used for grades 10-12 due to the new curriculum exclusively applied for these grades in the current academic year. According to the corpus queries, the textbooks corpus consists of 3869 tokens and 1425 types of texts. This research used COCA as a control corpus. The data was collected using

AntConc as a corpus tool. The researcher uses this application because it is available online and accessible. Additionally, it provides powerful concordance tools for generating word and keyword frequencies. Moreover, the features needed to analyze the data are available in AntConc, namely the KWIC features. The researcher used KWIC feature to identify the frequency of central modal verbs by inserting the specific keywords. In COCA, the researcher input the specific keywords in the "List" feature and sorted the POS (part of speech) into the modal verbs. COCA represents the 'real' use of English since it has recorded over one billion words in a long period (from 1990 to 2019). The collection of COCA comprises a variety of content, such as spoken language, popular magazines, newspapers, and fictional and academic texts (Sujatna et al., 2019). Additionally, focusing on spoken sub-corpus, COCA consists of more than 127 million words (Oktavianti & Fajria, 2021). Hence, it is valid to represent the authenticity of English.

3. Findings and Discussion

Findings

The researcher discovered several results regarding the frequency of central modal verbs of possibility, ability, and permission in the textbooks. The findings of the analysis are presented in the following table.

Table 1. The frequency of possibility/ability/permission central modal verbs in the textbook corpus

Modal Verb	Meaning	Frequency	Percentage
<i>Can</i>	Ability	15	50%
	Possibility	13	43%
	Permission	2	7%
<i>May</i>	Possibility	3	100%
<i>Might</i>	Possibility	3	100%
<i>Could</i>	Possibility	1	100%

As shown in Table 1, of the four central modal verbs, only "can" is exclusively employed to denote all expressions, either possibility, ability, or permission. The "ability" meaning was emphasized as primary with 15 instances (50%), followed by "possibility" to be secondary, with 13 occurrences (43%), and the least "permission" expression, appearing only two times (7%). However, there is a significant distinct in the use of other central modal verbs of possibility, ability, and permission in the textbook conversation sections. The central modal verbs "may" and "might" have the same frequency of 3 times, meaning both modal verbs have a 100% occurrence percentage in the textbooks. Moreover, in terms of the use of the expression, "may" and "might" are predominantly used to convey "possibility," although they appear less frequently in "ability" and "permission" contexts. Similarly, about "could," the possibility meaning was emphasized dominantly over the other expression. Furthermore, "could" is the least frequent central modal verb of possibility, ability, and permission, with only one-time occurrence in the textbook conversation sections.

This section investigates the frequency of the central modal verbs of possibility, ability, and permission in COCA as control corpora.

Table 2. The frequency of central modal verbs in COCA

Central Modal Verbs	Frequency	Percentage
Can	312546	50%
Could	180303	30%
May	78438	12%
Might	58001	9%
Total	629288	100%

Table 2 shows the frequency of central modal verbs of possibility, ability, and permission in the COCA with a total occurrence of 629,288 times. The table shows that "can" is the first position and the most frequently used central modal verb, with 312,546 occurrences, representing half of the total percentage (50%). Then, "could" stands in second place, appearing 180,303 times, accounting for 30% of the total occurrences. Furthermore, "may" is significantly different when contrasted with the central modal verbs "can" and "could," which occurs 78,438 times (12%) in the third place. Lastly, the least frequent central modal verbs of possibility, ability, and permission in COCA is "might," appearing only 58,001 times with a total percentage of 9%.

Comparison between the textbooks corpus and COCA

Based on an explanation, there are some interesting points related to the similarities and discrepancies in the frequency of central modal verbs of possibility, ability, and permission from both sources. The result of the analysis will be illustrated in Table 3.

Table 3. The comparison in the textbooks corpus and COCA

Textbooks			COCA		
Rank	Modal Verb	Percentage	Rank	Modal Verb	Percentage
1	Can	79%	1	Can	50%
2	May	11%	2	Could	30%
3	Might	8%	3	May	12%
4	Could	3%	4	Might	9%

The following table shows the results of the analysis of frequencies both in the textbooks and in the control corpus, COCA. In addition, to simplify the data, the frequency analysis results are presented in the form of percentages, making it easier to compare the two data. Regarding similarities, both textbooks and COCA have collectively presented possibility, ability, and permission central modal verbs in the spoken context, including "can," "may," "might," and "could." Furthermore, "can" is surprisingly the highest central modal verb, as shown in textbooks and COCA, with occurrences of 79% for textbooks and 50% for COCA.

Although there are similarities in terms of the use of central modal verbs of possibility, ability, and permission expression in textbooks and COCA, there are some differences to highlight. In the conversation sections of the three series of the Kurikulum Merdeka textbooks, the frequency of the central modal verb "could" is unexpectedly low, with a percentage of only 3% of the total. Contrasted to COCA, "could" ranks as the second most commonly used central modal verb in possibility, ability, and permission expression. Another different aspect of the frequency analysis concerns the use of central modal verbs "may" and "might." In COCA, "may" ranks as the third most commonly used central modal verb, while it stands in second place in the textbooks. Similarly, in textbook conversation sections, "might" takes third place, but it is surprisingly the least frequent central modal verb of possibility, ability, and permission in the spoken sub-corpus of COCA. Although there are variances in sequence of frequency in both textbooks and COCA, these distinctions are not really significant.

Discussion

1. The most frequent possibility/ability/permission central modal verbs in the textbooks conversation sections and COCA spoken sub-corpus

The researcher found several findings related to the occurrence rate and variety distribution of central modal verbs in each type. According to the explanation in the research findings, "can" is the most frequent central modal verb. Moreover, of the four central modal verbs, only "can" exclusively conveys all types of possibility, ability, or permission. The ability meaning was emphasized as primary, followed by the possibility to be secondary, and the least is permission. This finding is in

accordance with. Although he noted that “can” is more frequently used to express possibility, the modal verb “can” is also commonly used for expressing ability and rarely used in a permission context. Furthermore, there is no clear distinction between “can” as a possibility and “can” as an ability since both meanings of the word are very close, as ability implies possibility Leech (2013). This result aligns with Laleh & Shokrpour (2015), which presents that “can” is predominantly used to convey ability and secondarily used for possibility. However, there is a distinction when compared to the previous study conducted by Akhofullah (2023). The findings of this study show that the modal verb “can” primarily tends to express possibility. This is not surprising in the form of linguistics as based on Biber et al., (2021) who stated that “can is ambiguous in academic prose since it can often be interpreted as marking logical possibility or ability.”

Moreover, central modal verbs “may” and “might” have equal positions after “can” and are predominantly used to express possibility rather than the other expression. These findings are in line with the previous study by Laleh & Shokrpour (2015) and Akhofullah (2023), which stated that “may” and “might” are primarily used to express possibility in the analyzed textbooks. Moreover, this result also aligns with Collins (2009), who observed that “can” is more commonly used than “may” in the corpora. On the other hand, “could” is the least central modal verb in the conversation sections of the examined textbooks. This finding is quite contrast compared to the previous research (Akhofullah & Oktavianti, 2023; Al-Ghalban, 2015; Laleh & Shokrpour, 2015; Li, 2017), which shows that “could” ranks as the second and sometimes the third most common used central modal verbs in corpora. Furthermore, regarding the type of expression, the possibility of meaning was emphasized dominantly, and it does not even appear to convey ability and permission context. This result follows the previous study conducted by Akhofullah (2023), which presents “could” dominantly express possibility meaning in the textbook corpus. Hence, according to the research findings, “can” is the most frequently used central modal verb in conversation sections of textbooks and dominantly expresses a sense of ability. Furthermore, “could” ranks as the lowest central modal verb and emphasizes the possibility meaning.

2. The similarities and differences between central modal verbs usage in textbooks compared with COCA

The second research question related to the comparison of possibility, ability, and permission central modal verbs used in COCA by comparing the frequency of occurrence between both textbooks and COCA. According to the research findings, the use of “can” is surprisingly the most frequent central modal verb, as shown in both textbooks and COCA. It is common to encounter “can” in the primary central modal verb since it serves as a prototype of the modal verb category (Oktavianti & Fajria, 2021). In the conversation sections of the examined textbooks, the central modal verb “can” is predominately used, indicating it is a prominent emphasis in the material. This finding aligns with the earlier studies (Al-Ghalban, 2015; Akhofullah & Oktavianti, 2023; Laleh & Shokrpour, 2015; Li, 2017; Oktavianti & Fajria, 2021), which suggests that “can” is mainly used in the corpora. Although there are similarities in terms of the use of central modal verbs of possibility, ability, and permission expression in textbooks and COCA, there are some differences to highlight. In the conversation sections of the three series of the Kurikulum Merdeka textbooks, the frequency of the central modal verb “could” is unexpectedly low, with a percentage of only 3% of the total. Contrasted to COCA, “could” ranks as the second most commonly used central modal verb in possibility, ability, and permission expression, whereas in the textbooks, this position is taken by “may.” In comparison to the central modal verb “may” (11%), the difference gap between ‘may’ and ‘could’ is quite significant, suggesting that “could” holds less prominence in conversation sections of the textbooks. The secondary modal or preterite counterparts of modal verbs signify politeness or tentativeness, formality, more indirect, and more hypothetical (Perkins, 1982). This statement is in line with Larsen-Freeman et al (2016), who claimed that the past tense modal verbs (secondary modal) are generally regarded as more polite and less assertive, and people often use them to make softer requests. This case also applies to the usage of the modal verb “could.” In fact, the use of “could” is

underrepresented in the conversation sections of the textbooks. Hence, this problem needs to be taken into account by the materials writer in designing the textbook as the learning media. Moreover, the lack of the central modal verb “could” in the textbooks should be considered as it might lead the learners to unfamiliarity with using “could” in conversation, despite the fact that this word is actually used frequently in spoken English as recorded in COCA.

Another different aspect of the frequency analysis concerns the use of central modal verbs "may" and "might," "as evidenced in both the Corpus Contemporary American English (COCA) and the textbooks. In COCA, "may" ranks as the third most commonly used central modal verb, while it stands in second place in the textbooks. Similarly, in textbook conversation sections, "might" take the third place. However, it is surprisingly the least frequent central modal verb of possibility, ability, and permission in the spoken sub-corpus of COCA. Although there are variances in sequence of frequency in both textbooks and COCA, these distinctions are not really significant. However, these results are not in accordance with the spoken sub-corpus of COCA. It marks that the use of central modal verbs of possibility, ability, and permission in the conversation sections of textbooks is not well presented according to the nature of spoken English. Lastly, for future researchers use another comparative corpus (control corpus) or several large corpora together to add more variations of language use.

4. Conclusion

In conclusion, the most frequent central modal verb used in spoken sections of textbooks is “can,” which dominantly expresses a sense of ability. Then, “could” ranks as the least central modal verb in the conversation sections of examined textbooks, solely used to convey possibility and does not even appear in the context of expressing ability and permission. However, the use of “could” in the conversation sections of textbooks is not in accordance with that in the spoken sub-corpus of COCA. This finding indicates there is a mismatch in the central modal verbs distribution in Kurikulum Merdeka’s textbooks. Furthermore, the lack of the very frequent modal verb should be considered when designing textbook materials. Hence, based on the result of the research, this case needs to be taken into account by the textbook authors when presenting the central modal verbs of possibility, ability, and permission in textbook conversations. In addition, the teacher needs to present more examples of possibility, ability, and permission types so that students are familiar with using these expressions in conversation. Teachers can provide additional materials by utilizing authentic sources such as articles, newspapers, podcasts, conversation videos of native speakers, etc., to expose the use of core modal verbs in real spoken English.

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