Critical thinking skills in post-reform EFL coursebooks for Myanmar's upper secondary schools: A content analysis

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This research examines the extent to which critical thinking skills (CT) are represented in post-reform Myanmar EFL coursebooks for upper secondary students and explores their alignment with the national education policy, with a focus on CT integration. Employing quantitative and qualitative approaches, we analyse 36 reading texts and 377 reading comprehension questions from the selected English coursebooks. A synthesised framework integrating Bloom's taxonomy (1956), the revised Bloom's taxonomy (Anderson & Krathwohl, 2001), and Ilyas' (2015) framework for CT guided our analysis. Quantitative findings reveal that lower-order thinking skills (63.7%) outnumbered higher-order thinking skills (36.3%), indicating limited opportunities for developing CT. Qualitative results also show that most reading comprehension questions encouraged rote learning and memorisation, limiting analytical and CT skills. The findings also reflect a partial alignment between the policy described in Myanmar's National Education Strategic Plan (2016-2021) and its implementation in coursebooks. This study highlights the need for a systematic revision of coursebooks and the provision of teacher training to ensure CT development in classrooms and the alignment between policy and practice.

Introduction

The significance of critical thinking skills (CT) has been increasingly emphasised in international education frameworks developed by different institutions, including the Organization for Economic Co-operation and Development (OECD), the United Nations Educational, Scientific and Cultural Organization (UNESCO), Partnership for 21st Century Skills (P21), and the Cambridge Life Competencies. These frameworks emphasise the development of CT skills through curricula for the preparation of students for the contemporary labour markets (González-Salamanca et al. 2020). In response to this global trend, CT has been explicitly integrated into many countries' education policies, including Myanmar. Myanmar initiated a series of education reforms, followed by a 3-year review of the Comprehensive Educational Sector Review (CESR), and the National Education Strategic Plan (NESP) (2016-2021) (South et al., 2024). The NESP emphasised the integration of 21st-century competencies, including CT.

As part of the implementation of the NESP (2016-2021), new English language coursebooks were introduced across different levels of education, expecting to develop students' CT and other competencies such as creativity, collaboration, communication, and citizenship. Integrating CT skills into English education also gains significant attention as it helps EFL learners facilitate language acquisition, enhance language proficiency, expand language skills, generate critical ideas in productive skills, and motivate them to take risks (Liaw, 2007; Irawati, 2014; Sanavi & Tarighat, 2014; Wang & Henderson, 2014; Liang & Fung, 2020). In EFL contexts, coursebooks play an important role not only in teaching English but also in developing students' CT skills, especially

through reading comprehension tasks (Shuyi & Renandya, 2019). The empirical studies in CT also confirmed that reading comprehension and CT development are well-connected. These studies highlight that carefully designed reading materials can enhance students' competencies to use their CT skills (Aloqaili, 2012).

However, previous studies investigating CT across English coursebooks in Myanmar focused on pre-reform EFL coursebooks. They reported consistent findings indicating the dominance of LOTS, providing limited opportunities for CT (Aung, 2013; Aung, 2015; Soe & Hlaing, 2016). Despite the introduction of post-reform materials, empirical studies on whether post-reform EFL coursebooks reflect the policy emphasis on CT remain limited. Addressing this gap, our study investigates the opportunities for CT in post-reform EFL coursebooks for upper-secondary students, with a particular focus on reading sections. In addition, this study examines the alignment between the policy intention towards CT and the pedagogical implementation for the development of students' thinking skills, contributing to existing knowledge on curriculum reforms, material development, and CT in EFL contexts.

Research questions

This study is conducted to answer the following questions:

1. What cognitive skills are demanded in the reading sections of the post-reform upper-secondary EFL coursebooks?
2. To what extent do Myanmar's post-reform upper-secondary EFL coursebooks reflect the education policy statements on CT skills?

Literature review

Critical thinking skills in education and EFL

Critical thinking skills (CT) has been increasingly recognised as one of the most significant educational components of the modern teaching-learning context. Educational institutions are expecting students to analyse, evaluate, and justify the incoming facts, beyond receiving the information as factual knowledge. As a consequence, CT skills are increasingly integrated into school curricula, learning materials, and assessment systems of secondary and tertiary education. Despite the various definitions of CT, there is a general agreement that CT involves a reasonable and reflective process, focusing on deciding what is reliable to believe and do (Hashemi & Ghanizadeh, 2012). These diverse beliefs on CT suggest that both abilities to think critically and intellectual traits to apply to abilities are required to carry out effective CT performances. From the standpoint of educational contexts, Bloom's *Taxonomy* (Bloom, 1956) and Bloom's *Revised Taxonomy* (Anderson & Krathwohl, 2001) are widely recognised as the most prominent frameworks for CT development.

However, the classification between the higher order thinking skills (HOTS) and the lower order thinking skills (LOTS) remains unchanged. These two frameworks are based on the same hierarchical processes, enabling educators to scaffold students' learning and evaluate students' cognitive progress (Ekalia et al., 2025). In addition, the two taxonomies help educators design and implement standardised learning materials, providing them with teacher-friendly language and reflecting the current situations of their class (Moseley et al., 2005). As a result, these two taxonomies have been employed in evaluating the demands of CT and the curricular objectives of the materials (Soe, 2024).

To evaluate and analyse the effectiveness of English coursebooks, English reading comprehension texts, tasks, and tests through the lens for CT skills, these two taxonomies have been used extensively in different contexts and has been trending in both the local and the regional contexts (Yuliana & Tungka, 2018; Assaly & Smadi, 2015; Shuyi & Renandya, 2019; Kanokpermpoon, 2019; Aung, 2013; Aung, 2015; Soe & Hlaing, 2016; San, 2019). As a result, CT in EFL has been recognised not as an independent and supplementary instructional approach but as an indispensable component of EFL education (Liaw, 2007; Zhao, Pandian & Singh, 2016). The significant role of CT in learning English as a foreign language is well-recognised (Pujiati et al., 2024). EFL students need to employ their logical, analytical, differentiation, reasoning, evaluative, and creative skills in receiving language and producing language like speaking and writing (Ahmadi, 2017; Al Roomy, 2022; Yamin et al., 2022; Kim et al., 2025). Developing CT skills of EFL learners helps them enhance their communication, expand their vocabulary, and learn how to use language for different purposes in various contexts (Kamali & Fahim, 2011; Harizaj &Hajrulla, 2017). Integration of CT into EFL contexts facilitates language development, enhances language proficiency, encourages students to take risks, and makes learners create ideas critically in productive skills, expanding language skills beyond memorisation (Liaw, 2007; Sanavi & Tarighat, 2014; Wang & Henderson, 2014; Liang & Fung, 2020).

Critical thinking skills in EFL coursebooks

In EFL coursebooks, reading comprehension plays a significant role in developing students' cognitive skills (Soe & Hlaing, 2016; Shuyi & Renandya, 2019). Theoretically, reading encompasses reasoning, evaluation, and analysis, overlapping with the HOTS in Bloom's (1956) and (2001) revised taxonomies. In other words, skills demanded in reading comprehension and CT overlap in a way that a reader needs to utilise summarising, analysing, and inferential skills on newly obtained information based on current knowledge (Sahiruddin et al. 2021). Therefore, reading comprehension questions should provide opportunities for learners to engage in both LOTS and the HOTS. Despite the significance of CT through reading tasks, many empirical studies conducted across diverse educational contexts have consistently reported the imbalanced representation of cognitive skills, limiting opportunities for CT.

In different EFL contexts, coursebooks remain the primary instructional materials and can shape the language attributes and cognitive nature. Therefore, a coursebook should be designed well, providing students with opportunities for CT and cultural competency

(Soe, 2024; Marpaung et al., 2025). No matter how the recent empirical studies are calling for more inclusion of tasks for CT development, EFL coursebooks across different contexts including Indonesia, Pakistan, Morocco, Myanmar, Singapore, and Malaysia, were reported to be demanding literal understanding rather than analytical and evaluative competencies of students (Es-Salhi & Elfatihi, 2019; Shuyi & Renandya, 2019; Kanokpermpoon, 2019; San, 2019; Ng & Jeyaraj, 2023; Marpaung et al., 2025; Ekalia et al., 2025). Contrary to them, a recent coursebook analysis for CT reported the domination of CT over LOTS in Grades X, XI, and XII coursebooks, suggesting that well-designed coursebooks can scaffold students' cognitive progress as they advance their studies (Xie, 2024). These findings across different contexts reflect that the inclusion of CT in EFL coursebooks is shaped not only by the adoption of a particular instructional framework but also by national education policies, the priorities of the curriculum, and the nature of coursebook design.

Beyond CT-specific concerns, textbook and workbook content analyses have also examined other pedagogical and policy dimensions across regional contexts, for example, scaffolding strategies in South African English workbooks (Sibanda, 2026), intercultural competence in Cambodian secondary resources (Bon, 2022), and management policies shaping EFL provision in Iran (Gholami & Farhadvand, 2026) which underscoring that coursebook evaluation research spans a wide range of analytical perspectives and contexts, of which CT in Myanmar's post-reform coursebooks forms one strand.

Myanmar education reforms and EFL coursebooks

Myanmar has attracted much attention and interest following the 2010 political transition, which is also acknowledged as "Myanmar's Spring". The newly emerged policymakers after 2010 launched the *Comprehensive Education Sector Review* (CESR) and the *National Education Strategic Plan* (NESP) (2016-2021) (Lall, 2021). As part of the NESP (2016-2021), the K+12 education system and a new curriculum were introduced in 2022. The NESP (2016-2021) aims "to provide our children with new knowledge and competencies, creativity and CT skills" (p. 5). However, the focus was only on language proficiency, with less attention on cognitive development. The main authority for publishing English coursebooks in Myanmar is the Ministry of Education as it is responsible for supervising curriculum development, designing the syllabus, and publishing coursebooks. Eight different coursebooks have been used for the upper secondary level since 1960, encouraging students' LOTS more than CT (Aung, 2013). All of these coursebooks were published under the oversight of conservative and socialist policymakers. In other words, prescribed texts for different levels of education in Myanmar reflect different ideologies of policymakers (Lall, 2021). Since Myanmar is implementing the NESP reflecting the 21st-century skills, including CT, the post-reform upper-secondary EFL coursebooks have been introduced since 2021. Nevertheless, the study of CT skills in these EFL coursebooks remains limited.

Analytical frameworks

Many frameworks, programs, tests, and taxonomies for the development and assessment of CT skills have been proposed and employed across different contexts. Among them, Bloom's taxonomies (1956; 2001) are trending in the global and regional contexts (Soe, 2024). However, sole dependence on Bloom's taxonomies (1956; 2001) leads to failure in capturing the other dimensions of CT. Addressing the weakness, an analytical framework for CT by Ilyas (2015) has also been effectively and recently employed in studying CT in EFL coursebooks in different Asian contexts (Ilyas, 2015; Solihati & Hikmat, 2018; Hasnah et al., 2024). These frameworks are appropriate to adopt to investigate CT in Myanmar's post-reform EFL coursebooks. This analytical framework can directly tackle the CT skills of students, synthesising Bloom's taxonomy (1956), the revised taxonomy (2001), and Ilyas' CT framework (2015). This study contributes theoretically to the evaluation of CT representation in EFL coursebooks by proposing a synthesised analytical framework that integrates the hierarchical nature of Bloom's taxonomies and the inquiry-based process by Ilyas (2015). This synthesised approach allows a more comprehensive study of coursebook evaluation, highlighting both cognitive process and critical engagement.

Research gap

Despite the introduction of newly published EFL coursebooks in Myanmar, the lack of study is significant. Previous studies in Myanmar focused on pre-reform EFL coursebooks, excluding the post-reform EFL coursebooks. Consequently, our study focuses on the post-reform EFL coursebooks, particularly in terms of CT. In addition, the sole reliance on a single taxonomy was evident in the previous studies, leaving a gap in exploring the inquiry-based CT dimension in coursebooks. Though many international studies have analysed different EFL coursebooks from a cognitive skills inclusion perspective, studies on the influence of national education reforms on CT inclusion in coursebooks and the alignment between the policy and practices are few. Addressing this gap, our study is carried out to find out the alignment between the CT in the post-reform EFL coursebooks and the education policy on the inclusion of CT skills.

Method

Research design

This study focused on both qualitative and quantitative methods. A quantitative approach was employed to calculate the frequency and percentage of thinking competencies and to show the data statistically. A qualitative method was also adopted to explore how cognitive skills in the reading comprehension sections reflect the education policy statements using a content analysis since is a flexible, effective, transparent, and cost and time-saving way to evaluate texts or documents (Babbie, 2008).

Data sources

The materials under this investigation are three EFL coursebooks published by the Ministry of Education (MOE) for three grades of upper secondary level: Grade X, Grade XI, and Grade XII (Ministry of Education, 2016; Soe et al., 2017; Ministry of Education, 2021). According to the Ministry of Education (2023), these books are currently being employed as major coursebooks for students at all upper secondary schools in Myanmar at the time of the data collection. The selected coursebooks were obtained from a local high school. The researcher could not determine whether these prescribed coursebooks were available in official digital copies and accessible to the public through the Ministry repository. Consequently, physical copies were mainly used as the data source, and all of the data in this research directly came from the original physical materials.

Each coursebook is identical in structure and contents. Each coursebook has 12 units, and each unit aims at students' development of both receptive skills and productive skills. Each unit is categorised into five sections: (i) reading, (ii) vocabulary, (iii) grammar, (iv) listening and speaking, and (v) writing (Ministry of Education, 2023). The reading section of each coursebook is selected to study CT skills, as the relationship between CT skills development and reading is more significant than the other skills. The reading section contains reading texts on diverse topics, subjects, and themes ranging from the themes of Burmese culture, like typical Myanmar snacks and Thanakha, to global issues like climate change, urbanisation, the food chain, and artificial intelligence. In this study, all 36 reading texts and 377 reading comprehension questions from the selected EFL coursebooks were subjected to data collection and data analysis.

Data collection

A data sheet checklist was used to study the cognitive skills demanded by the three EFL coursebooks. Ilyas's framework for CT (2015) was adapted. The checklist was developed through synthesising Bloom's taxonomy (1956), the revised taxonomy (2001), and Ilyas' (2015) framework. The items in the checklist are Remembering (Q1), Understanding (Q2), Agreement/Disagreement (Q3), Prediction (Q4), Assumption (Q5), Reason & Evidence (Q6), Clarity (Q7), Implication (Q8), Perspective (Q9), Summary & Conclusion (Q10), Question (Q11), and Creating (Q12).

For our study, the questions Q1, Q2, Q3, and Q4 were categorised as LOTS since they call for understanding, comprehension, and identification of the facts and information in the provided texts, without producing synthesised information and justification of the facts. Despite identifying Q3 as HOTS in some cases, Q3 in this study was categorised as LOTS, as students were expected to provide the response based on the text. On the other hand, Q5, Q6, Q7, Q8, Q9, Q10, Q11, and Q12 are HOTS, which are indicators of opportunities for CT-related cognitive skills, focusing on analysis, evaluation, and creation. The reading sections in all three selected coursebooks were retrieved and identified. The reading texts and reading comprehension questions were recorded in a data sheet checklist.

Data analysis

To enhance the consistency of the coding process, the researcher and an experienced EFL teacher conducted pilot coding separately by randomly selecting the reading comprehension questions from one of the three selected EFL coursebooks. Following the pilot coding, the two coders compared the coding results. Then, any uncertainties between the coders were discussed until consensus was reached to ensure the applicability of the data sheet checklist in all questions of the selected coursebooks.

Each question was analysed and coded according to the analytical framework. Each question's major thinking demand guided the coding decisions rather than merely the common verbs and the grammatical forms of the questions. Moreover, a question falling into more than one cognitive demand was categorised based on the nature of the text and the expected answers from students. For instance, the questions beginning with *Why* were found twice in Unit 1 of the Grade XI coursebook. However, a why-question was identified as Q2 as students are expected to find the information explicitly mentioned in the text, while another why-question was identified as Q6, demanding students to use their reasoning skills. There are 10 questions in Unit 1 of the Grade XI coursebook, and questions such as "*1. Where are Ayeyarwady dolphins usually found? 5. Where can you find them in Myanmar? and 9. Which part of the Ayeyarwady River is kept as a sanctuary to protect the dolphins?*" (p.4), were coded as Q1, as they ask students to find the fact given in the reading text "Ayeyarwady dolphins", assessing their recalling and understanding skills. The questions "*2. Why are they called Ayeyarwady dolphins? 3. What is the difference between Ayeyarwady dolphins and other dolphins? 4. How do they eat their food? 6. How do they communicate with one another?*" (p.4) were coded as Q2, asking students to interpret the information provided. The question "*7. How did the local fishermen get the attention of the dolphins? and 8. Why does the dolphin population decline each year?*" (p.4) were coded as Q6 as it asks students to provide reasons to support responses through the evidence in the text, and the question "*10. What can you do to protect the decline of Ayeyarwady dolphin population?*" (p.4) as Q12 since it asks students to provide solutions to the decline of the dolphins. In addition, questions requiring students to recall, recognise, describe, interpret, implement, and predict were categorised as LOTS while questions demanding students to compare, evaluate, synthesise, summarise, generate new or alternative ideas were grouped into HOTS (Ghanizadeh et al., 2020).

Following the coding process, the frequencies of each question type (Q1-12) were calculated. Then, the coded data were transformed into quantitative data, using descriptive statistics and graphical representations. This process enabled the researcher to make a comparison between different coursebooks and study the most frequent and the least frequent cognitive competencies. Then, percentages of the questions were computed to illustrate the distribution of different cognitive skills-based questions in the selected materials, and the results were presented in the charts to facilitate interpretation. Table 1 shows the coding guidelines for questions in the data checklist sheet for collecting data from the selected EFL coursebooks (2022-2023).

Table 1: Coding guidelines for reading comprehension questions

Thinking skills	Category	Operational definition	Coding for analytical framework
Lower order	Remembering	Recalling information given in the text	Q1
	Understanding	Interpreting the information given in the text	Q2
	Agreement/ disagreement	Providing agreement or disagreement based on the information	Q3
	Prediction	Predicting consequences based on the text	Q4
Higher order	Assumption	Identifying assumptions directly or indirectly given in the text	Q5
	Reason and evidence	Providing reasons to support responses through the evidence in the text	Q6
	Clarity	Clarifying meanings or explaining relationships among the ideas	Q7
	Implication	Inferring consequences from the information	Q8
	Perspective	Providing viewpoints	Q9
	Summary and conclusion	Synthesising the information and providing a conclusion	Q10
	Question	Designing questions about the texts	Q11
	Creating	Producing or generating alternative responses	Q12

Findings

The findings reveal lower order thinking skills (LOTS) and higher order thinking skills (HOTS) in selected coursebooks as follows in Tables 2 to 5.

Table 2: Frequency and percentage of LOTS and HOTS in Grade X EFL coursebook

Location		Types of questions												Total
		LOTS				HOTS								
Coursebook	Unit	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	
Grade X	1	4	1	0	1	0	1	0	0	1	0	0	0	8
	2	6	1	0	0	0	2	0	0	3	0	0	0	12
	3	3	2	0	1	0	2	0	0	0	0	0	0	8
	4	3	4	0	0	0	0	0	0	2	0	0	0	9
	5	4	2	0	0	0	2	0	0	2	0	0	0	10
	6	3	9	0	0	0	0	0	0	3	0	0	0	15
	7	4	3	0	0	0	1	0	1	1	0	0	0	10
	8	4	4	0	0	0	0	0	0	0	0	0	0	8
	9	4	3	0	0	0	0	0	1	1	0	0	0	9
	10	6	8	0	0	1	1	0	1	0	1	0	0	18
	11	2	2	0	1	0	4	0	0	1	0	0	0	10
	12	1	2	0	1	0	3	0	1	3	0	0	0	11
	Tot	44	41	0	4	1	16	0	4	17	1	0	0	128
Frequency		89				39								128
Percentage		69.53%				30.46%								100%

Table 2 indicates the frequency and percentage of LOTS and HOTS found in the reading section of the Grade X EFL coursebook. The Grade X coursebook contains a variety of cognitive skills, with frequencies ranging from 39 (30.46%) to 89 (69.53%). The findings revealed that Q1 is the most common skill, while Q3, Q7, Q11, and Q12 are not found in the Grade X coursebook. Questions such as "*Who developed the first steam engine and when*?" (Grade X, Unit 5, p 39) and "*What do we need food for*?" (Grade X, Unit 10, p 89) were found to fall into Q1, as they are demanding how much information students can recall from the reading texts. The questions, such as "*How do you feel after helping other people?"* (Grade X, Unit 2, p15) and "*How do you feel if you see a beautiful sunset while walking in a park"* (Grade X, Unit 2, p15), were found in Q7, making students think critically as they encourage them to clarify and question. All in all, the LOTS are the most demanded in the Grade X coursebook, while CT are the least demanded skills, distributing 69.53% and 30.46% respectively, as shown in Table 2.

Table 3 shows the frequency and percentage of lower order thinking skills (LOTS) and higher order thinking skills (HOTS) found in the reading materials of the Grade XI EFL coursebook.

Table 3 Frequency and percentage of LOTS and HOTS in Grade XI EFL coursebook

Location		Types of questions												Total
		LOTS				HOTS								
Coursebook	Unit	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	
Grade XI	1	3	4	0	0	0	2	0	0	0	0	0	1	10
	2	2	3	1	1	0	2	0	1	0	0	0	0	10
	3	3	4	0	1	1	1	0	0	0	0	0	0	10
	4	2	2	0	0	0	3	0	2	1	0	0	0	10
	5	2	4	0	2	0	2	0	0	0	0	0	0	10
	6	2	4	0	0	0	4	0	0	1	0	0	0	11
	7	5	1	0	0	1	2	0	0	1	0	0	0	10
	8	3	0	1	1	1	6	0	0	3	0	0	0	15
	9	1	4	1	0	0	0	0	0	1	0	0	2	9
	10	1	5	1	0	0	0	0	0	1	0	0	0	8
	11	2	2	0	0	0	4	0	0	2	0	1	0	11
	12	3	0	1	0	0	5	0	0	0	0	0	0	9
	Tot	29	32	5	5	3	32	0	4	10	0	1	3	123
Frequency		72				51								123
Percentage		58.53%				41.47%								100%

The Grade XI coursebook contains a diverse distribution of cognitive skills, with frequencies ranging from 72 (58.53%) to 51 (41.47%). The findings showed that the Grade XI coursebook provides no opportunity for practicing Q7, though Q2 and Q6 outnumbered any other skills. Examples of Q2 and Q6 are questions like "*Where are Ayeyarwady dolphins usually found?", "Where can you find them in Myanmar?",* and "*Why does the*

dolphin population decline year by year?" (Grade XI, Unit 1, p.4) fall into Q2 and Q6, asking students to recall facts and provide reason and evidence according to the text. Though the Grade XII coursebook provides questions like "*Clarify the function of the ozone layer?"* (Grade XI, Unit 7, p.78), which encourages students to clarify the information in the provided text, the Grade XI coursebook does not include such higher-order thinking-based questions. Overall, the most frequent cognitive skills in the EFL coursebook for Grade XI students are the LOTS. In contrast, the HOTS are less demanded than the LOTS, showing percentages of 58.53% and 41.47%.

Table 4: Frequency and percentage of lower order thinking skills (LOTS) and higher order thinking skills (HOTS) in the Grade XII EFL coursebook

Location		Types of questions												Total
		LOTS				HOTS								
Coursebook	Unit	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	
Grade XII	1	3	0	2	0	0	4	0	1	0	0	0	0	10
	2	0	0	1	0	0	2	1	6	0	0	0	0	10
	3	2	2	1	0	0	3	2	0	0	0	0	0	10
	4	1	0	3	0	0	1	1	2	0	0	0	0	8
	5	3	3	1	0	0	0	1	1	0	0	0	0	9
	6	5	3	0	1	0	0	2	2	1	0	0	0	14
	7	2	3	0	0	1	0	3	1	0	0	0	0	10
	8	4	2	0	0	1	1	1	1	0	0	0	0	10
	9	5	5	0	0	1	3	0	0	1	0	0	0	15
	10	2	8	0	0	0	2	0	0	0	0	0	0	12
	11	4	4	1	0	0	0	0	1	0	0	0	0	10
	12	1	6	1	0	0	0	0	0	0	0	0	0	8
	Tot	32	36	10	1	3	16	11	15	2	0	0	0	126
Frequency		79				47								126
Percentage		62.69%				37.31%								100%

Table 4 shows that the Grade XII coursebook provided 79 (62.69%) of LOTS and 47 (37.31%) of HOTS. According to the data, Q2 was the most frequent skill, though Q10, Q11 , and Q12 were not found at all in Grade XII. Q2 questions such as "*What is a nutritious diet?"* (Grade XII, Unit 3, p.25), "*What does a red-letter day mean?"* (Grade XII, Unit 5, p.49), and "*What is AI?"* (Grade XII, Unit 6, p.62), are more frequent than higher-order thinking-based questions such as "*How do you feel if you see a beautiful sunset while walking in a park?"* (Grade XII, Unit 2, p.15) and "*How do we feel if we cannot fulfill our wants or needs?* (Grade XII, Unit 4, p.39). In the Grade XII coursebook, the LOTS were found to be more frequent than the HOTS, covering 62.69% and 37.31%. The data revealed that the Grade XII students are provided with more opportunities for HOTS than the Grade X students, but fewer than the Grade XI students.

Table 5: Frequency and percentage of lower order thinking skills and higher order thinking skills upper secondary English EFL coursebooks in Myanmar

Coursebooks	LOTS	HOTS	Total
Grade X	89 (69.53%)	39 (30.46%)	128 (100%)
Grade XI	72 (58.53%)	51 (41.47%)	123 (100%)
Grade XII	79 (62.69%)	47 (37.31%)	126 (100%)
Total	240 (63.66%)	137 (36.33%)	377 (100%)

Table 5 summarises the overall distribution of LOTS and HOTS across the three upper secondary EFL coursebooks (Grades X, XI and XII) in Myanmar, encompassing a total of 377 reading comprehension questions. Overall, LOTS predominantly outnumber HOTS across all three levels, representing 63.66% (n = 240) of the total questions compared to 36.33% (n = 137) for HOTS. Among the individual grades, Grade X contains the highest proportion of LOTS at 69.53% (n = 89) against 30.46% (n = 39) for HOTS. Grade XI demonstrates the highest integration of critical thinking opportunities, featuring 41.47% HOTS (n = 51) and 58.53% LOTS (n = 72). Grade XII shows an intermediate distribution, with LOTS comprising 62.69% (n = 79) and HOTS accounting for 37.31% (n = 47). Conclusively, while the representation of HOTS fluctuates slightly across grades, lower-order cognitive demands consistently dominate the reading comprehension sections of post-reform upper secondary textbooks.

Discussion

Cognitive skills demanded in the post-reform English coursebooks (RQ1)

This study was carried out to explore what cognitive skills are demanded in the post-reform upper-secondary EFL coursebooks' reading sections. The CT skills-related tasks were hardly found in the post-reform coursebooks. LOTS-based questions (63.66%) were found more frequently than the questions demanding HOTS (36.33%). This disproportional inclusion of thinking skills in the coursebooks highlights that the opportunities for CT skills are not properly provided in the post-reform EFL coursebooks despite the explicit mention of it in the education reform statements. The findings of this study are consistent with the studies on CT in the pre-reform coursebooks, reporting the domination of LOTS (89.16%) over HOTS (10.84%) (Aung, 2015). In addition, the inclusion of CT in the post-reform books also reflects the limited opportunities for CT across EFL coursebooks (1960-2010) (Aung, 2013). It also indicates that the pre-reform coursebooks' limited space for high-level cognitive skills is consistent with the post-reform coursebooks, in contradiction to the emphasis of the NESP (2016-2021) on more inclusion of CT in the revised curriculum. Providing few opportunities for the CT development of students can have a large impact on their performance in their studies (Ekalia et al., 2025).

Our study found a surprising observation that the post-reform coursebooks resonate with recent studies in different contexts. In most nationally prescribed and commercially

produced EFL coursebooks, nearly 70% of the questions in the reading section are for LOTS while only 30% demand HOTS, calling for more opportunities for CT-based tasks (Ilyas, 2015; Solihati & Hikmat, 2018; Hashim & Ahmed, 2021; Hasnah et al.,2024; Setiawan, 2025). On the other hand, the provision of lower-order thinking is argued to scaffold weaker learners (Shuyi & Renandya, 2019). Thus, it can be deduced that the frequent occurrences of remembering (Q1) and understanding (Q2) skills in the post-reform books reflect Bloom's hierarchical model, laying LOTS as the foundation for higher-order skills and catering to weaker students. However, the coursebooks need not only to facilitate students' acquisition of facts but also to improve their cognitive skills (Hanesova, 2024). Consequently, the development of CT skills will be hindered, despite the policy's advocacy for 21st-century competencies.

Reflection of the post-reform coursebooks on CT skills in education policy statements (RQ2)

Our study also suggested that the post-reform coursebooks partially reflect the statement of the NESP (2016-2021): "competencies, creativity and CT skills and cultural and ethical values" shall be developed through the new curriculum (NESP, 2016-2021, p.5). However, the dominance of LOTS in the post-reform materials shows consistency with the studies on the pre-reform English coursebooks (Aung, 2013; Aung, 2015; Soe & Hlaing, 2016). Despite the explicit support of the reform policy on CT, only a modest improvement is evident in its implementation. This finding also echoes the findings in recent regional studies (Ilyas, 2015; Shuyi & Renandya, 2019; Solihati & Hikmat, 2018; Hasnah et al., 2024; Setiawan, 2025; Ekalia et al., 2025). Moreover, the partial alignment between policy and practice can be attributed to two major reasons: material developers' insufficient creativity and lack of clear conceptualisation of CT (Solihati & Hikmat, 2018). In addition to these two factors, the instability of the political leadership and policy shapes the partial alignment, interrupting the momentum of education reforms and reinforcing the rote learning-based education system (Lall, 2024). However, the high provision of LOTS in pre-reform books (73.14% in 2013 and 89.16% in 2015) was reduced to 63.66% in 2021, and the increased inclusion of HOTS from a minimum frequency of 26.86% in 2013 and 10.84% in 2015 to 36.33% in 2021. Despite the modest improvement, post-reform coursebooks provide opportunities for CT skills at the upper secondary level, serving as stepping stones for CT skills development at the tertiary level.

Students can still develop their CT skills through different subjects and the use of instructional language. Myanmar classrooms predominantly use the Myanmar language as the medium of instruction, with ethnic minority languages taught only as supplementary provision in specific regions (Soe et al., 2017). Though CT skills can be developed through English reading comprehension, language deficiency can be responsible for insignificant critical-thinking performance (Liang & Fung, 2021). In other words, students with poor language skills may find English a barrier to their cognitive skills, leading to the loss of motivation in developing CT. However, they may find opportunities for CT and demonstrate satisfactory development of cognitive skills through subjects taught in their proficient language, overcoming the linguistic demands that limit their excellent performance in CT. Therefore, CT in upper-secondary education in Myanmar should be

supported through not only English but also other subjects taught in their proficient language.

Conclusion

Our study asserted that the post-reform EFL coursebooks provide an imbalanced contribution of cognitive skills and that the opportunities for CT skills are still limited, encouraging recalling, memorisation, and rote learning. In addition, compared to the pre-reform coursebooks, the post-reform coursebooks show only a modest improvement in CT, reflecting the partial alignment between the policy statements and the actual practice. Consequently, this study calls for a careful revision of coursebooks to provide a balanced provision of diverse cognitive skills, particularly CT skills. In addition, to bridge the policy and the practice, revisions of post-reform coursebooks should be guided by systematic curriculum frameworks and the findings of this study through the collaboration of policymakers, material writers, teachers, and students. Policymakers may employ this study's results as a blueprint to ensure the consistency between the content of the coursebooks and the statements in the NESP (2016-2021). For material writers, curriculum mapping can be employed to conduct a systematic process of coursebook review and revision, and provide intensive teacher training courses on the use of materials and CT.

This study is limited to the reading comprehension questions in the post-reform English coursebooks for the upper-secondary level. For a holistic view of opportunities for CT skills in post-reform English coursebooks, future studies should examine these coursebooks across different levels of education in Myanmar, investigating tasks in other competencies such as speaking, listening, and writing. In addition, future researchers should also study how cognitive skills are embedded across upper-secondary subjects and in classrooms, particularly through the use of students' proficient language, such as Myanmar. Moreover, studies should be conducted on the tasks in the post-reform national assessment to provide a panoramic view of Myanmar's education reforms.

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