

Review of Washback Effect of Chinese University English Language Entrance Examination (2016–2025)

Huirong Geng, Harmi Izzuan Bin Baharum*

Faculty of Social Sciences and Humanities, University Technology Malaysia, Kuala Lumpur Campus,
Jalan Sultan Yahya Petra, 54100 Kuala Lumpur, Malaysia

*Corresponding Author

DOI: <https://dx.doi.org/10.47772/IJRISS.2025.910000342>

Received: 12 October 2025; Accepted: 20 October 2025; Published: 12 November 2025

ABSTRACT

The National Matriculation English Test (NMET), which is the English language entrance examination to Chinese universities, has long been criticized for creating negative washback on English education in high schools in China, as its high-stakes nature creates significant pressure on schools to align their teaching with test requirements, given its wide ranging societal and educational impact. This paper reviews the empirical research related to washback of NMET in the Chinese context. A systematic review was conducted on articles published between 2016 and June, 2025. These articles were subjected to thematic analysis in which four broad categories were identified: influence on teaching practices; influence on student learning strategies, motivation, and perceptions; impact on learning outcomes; and the direction of washback. Findings suggest that future researches are required to adopt longitudinal and multi-contextual approaches to capture the evolving nature of washback, examine how reforms are mediated by local conditions, and explore strategies for bridging the gap between exam preparation and the broader goals of English education.

Keywords: Washback effect, NMET, Teaching Practice, Learning Behavior, Learning Outcomes

INTRODUCTION

High-stakes examinations play a central role in shaping educational systems worldwide, exerting strong influence on both teaching and learning. The National Matriculation English Test (NMET) is the most important test for high school students in China, which is the English language test in the National College Entrance Examinations (Gaokao). The NMET serves as both a gateway to higher education and a factor that shapes students' academic paths and life prospects. Because of its great importance, the NMET is known to have strong washback effects on English education in China.

For the last thirty years, washback has been a major theme in applied linguistics. In China, there has been a lot of washback research on the NMET, but the results are still complicated. The emerging body of research on washback calls for a review of the literature. The purpose of this paper is to investigate the current state of washback research on NMET in the context of China.

The present review brings together recent empirical studies to examine four dimensions: (a) the influence of the NMET on teaching practices, (b) the influence on student learning strategies, motivation, and perceptions, (c) the impact on learning outcomes and (d) the direction of washback, whether positive, negative, or mixed.

Washback

Washback, also referred to as backwash, describes the influence that tests exert on teaching and learning. In language education, this concept has been widely examined because high-stakes assessments often shape what is taught, how it is taught, and how learners approach their studies. Alderson and Wall's (1993) seminal work formally conceptualized washback, proposing 15 hypotheses to explain the ways examinations affect educational practices. Building on this, Hughes (1993) introduced a trichotomy model, distinguishing between participants (teachers, learners, administrators), processes (teaching and learning activities), and products (learning outcomes). This model highlighted the channels through which tests exert their effects. Bailey (1996) extended the discussion by offering a basic model of washback that incorporated the direction and scope of test influence. She emphasized the interplay between the test, the participants, and the broader educational context, while distinguishing between positive and negative washback. Green's (2007a) model investigates washback from three dimension including washback direction, washback variability and washback intensity.

Nmet

Currently, the Chinese education system includes preschool, primary, secondary and tertiary education levels. Primary school education, which lasts six years, and junior secondary education, which lasts three years, are compulsory. After the completion of this nine-year compulsory education program, approximately 50% of junior high students enter senior high school for an additional three years of study. At the end of the senior high school education, the students are required to take the National College Entrance Examination (NCEE, known as Gaokao in China). NCEE has become one of the most important systems of choosing talents in the world. And scores gained in examination are used to evaluate students' academic performance. The National Matriculation English Test (NMET) is the English test of the National College Entrance Examination (NCEE).

NMET has a great influence on students' future and destiny in China. Chinese students who do well on their tests and get high scores will have a better chance of getting into national key universities. Those who don't do well may have to go to regular universities or even miss out on getting into universities. The NMET has a big impact on English language teaching and learning in secondary schools because it plays such an important role in deciding where students go to college. In a lot of high schools, the last year of English class is mostly spent getting ready for the NMET. This often includes activities that focus on tests, like doing mock exams over and over, doing exercises that are meant to improve specific skills, and going over mistakes in detail.

There were numerous rounds of reforms of the NMET in China. And the current format of NMET is as follows.

Table 1 Test Format Of The 2025 Nmet (Pen And Aper)

Task	Input	Item Types	Raw Score	Percentage
Listening	5 short dialogues	3-option multiple choice	7.5	20%
	5 dialogues or monologues	3-option multiple choice	22.5	
Reading	4 texts	4-option multiple choice	37.5	53.3%
	1 text	filling 5 blanks from the given 7 choices	12.5	
	1 text cloze	4-option multiple-choice	15	
	1 text cloze	filling 10 blanks using the proper form of given word	15	

Writing	practical writing	Short functional writing tasks (letters, notices, speeches, etc.) with clear real-world purposes.	15	26.7%
	continuation writing	A narrative task where students continue a given story opening while maintaining consistency in plot, style and characterization.	25	
Total			150	100%

The NMET is comprised of a national-wide written test in most provinces, and an oral test only in several provinces. The NMET written tests are designed to comprehensively assess students' English language abilities, with a full score of 150 points. It mainly consists of three parts: listening comprehension, which evaluates students' ability to understand spoken English; reading comprehension, which measures their reading and understanding skills of various English texts; and writing, which tests their writing proficiency in different styles and topics. Regarding the oral test, it is not uniformly implemented across the country. In some provinces and municipalities, the speaking ability of students is examined. However, currently, the results of the oral test are not included in the total NMET score.

Review Method

This study is a review study on washback research on NMET. The inclusion criteria are the studies:

1. are journal articles;
2. are about washback study on NMET in China;
3. are published between 2016 to August June 2025;
4. contain empirical data;
5. have washback as one of the major focuses;
6. have the full text available online without payment.

The following databases are searched to find potential articles:

1. CNKI
2. WoS
3. Scopus
4. Google Scholar

In each of the databases, the following English and Chinese keywords are searched:

1. Washback + China
2. Backwash + China
3. Washback + Chinese
4. Backwash + Chinese
5. Washback + NMET
6. Backwash + National Matriculation English Test

The initial search gets 56 potential papers. Each article is subsequently assessed independently to determine its inclusion or exclusion, using the criteria outlined above. Additionally, the reference lists of these papers were examined to check for any relevant literature that might have been missed in the database searches. The final set of 20 articles was then evaluated independently by the authors to identify themes that are relevant to this research.

Most studies on washback on NMET has focused predominantly on washback to teachers' teaching and washback to test-takers' learning, which were two major themes identified in the reviewed studies. However, our review uncovered other themes including products or outcomes of learning and direction of washback.

Therefore, this article presents a review of empirical research on the washback of NMET. We synthesize the evidence on

- (a) influence on teaching,
- (b) influence on learning,
- (c) influence on teaching or learning outcomes,
- (d) direction of washback (positive/negative or mixed).

DISCUSSION

Research on the National Matriculation English Test (NMET) has generated a rich body of empirical evidence that illuminates its influence on English education in China. Studies converge on the finding that the NMET exerts a powerful but complex washback effect.

Influence on Teaching

A substantial body of research has examined how the NMET shapes English teaching in high schools in China. These studies show that the NMET exerts a pervasive influence on classroom content, pedagogy, and outcomes, though the extent and direction of washback vary across grade levels, reforms, teacher beliefs, and time. Four interrelated themes emerge: teaching content and methods, reform-driven shifts, teacher beliefs as mediators, and sustainability of washback.

Teaching Content and Methods

Research demonstrates that the NMET strongly determines what and how teachers teach. Dong (2018) revealed that the intensity of washback grows progressively stronger as students approach the exam. In Grade 1 and 2, teaching tends to follow textbooks and regular activities, with relatively weak and implicit influence from the NMET. By Grade 3, however, instruction becomes highly exam-driven, dominated by mock tests and drilling. Vocabulary, grammar, and reading, which are the most important parts of the test, get the most attention, while speaking gets little. Zhang and Zhang (2020) also pointed out that most teachers think that the NMET controls what happens in the classroom and how it happens. In practice, this means that teaching has to be very similar to what the tests want, which often leads to teaching that is too focused on the tests and not enough on communication skills.

Reform-Driven Shifts

Reforms to the NMET have tried to make it cover more areas, especially by adding listening and speaking. Research on Shanghai's listening-speaking reform demonstrates the advantages and drawbacks of change driven by tests. After the reform, Hou (2018) found that teachers gave students more oral practice by adding more tasks that required them to listen and speak. However, a lot of this practice was still focused on the test, using scripted dialogues and test simulations instead of real communication activities. Zhang (2019) arrived at analogous conclusions, noting that the incorporation of listening and speaking elements in the biannual NMET fostered greater emphasis on oral competencies, yet remained predominantly focused on examination drills. These findings suggest that test reforms can redirect instructional focus to previously neglected competencies; however, systemic limitations and entrenched examination cultures impede significant pedagogical innovation.

Teacher Beliefs as Mediators

A multitude of studies underscore that washback does not arise spontaneously from test design but is shaped by educators' beliefs. Liang et al. (2025) demonstrated that teachers' beliefs significantly mediate the washback effects of high-stakes examinations on teaching practices, even though such beliefs are widely recognized as difficult to change. Positive washback occurred on teaching practices when teachers' beliefs aligned with NMET assessment goals, whereas negative or insignificant washback emerged when beliefs and the test were misaligned. This highlights the critical importance of teachers' perception in shaping washback and suggests that any reform intended to produce favorable results must consider both teachers' beliefs and test design.

Sustainability of Washback

Research shows that washback effects are not static and can change over time. Huang and Zeng (2025) examined the sustainability of washback after NMET reforms, finding that teachers' initial enthusiasm often diminished as the pressures of exam preparation resurfaced. Reforms led to significant short-term changes, but their long-term viability was uncertain, heavily dependent on institutional support, teacher autonomy, and policy coherence. This highlights the difficulty of attaining lasting pedagogical change solely through assessment reform.

In summary, these studies show that the NMET has a big but inconsistent effect on teaching. It makes teachers focus on the test, and as the test date gets closer, it gets stronger. It also changes what they teach to fit the skills that will be tested. The reforms to the listening–speaking part of the test show that how teachers focus on different things can change, but cultural and systemic factors limit how much teaching can really change. Most importantly, teachers' beliefs affect how washback works. They decide if the pressure of the test is used to help students learn or if it becomes boring test-drilling routines.

Influence on Learning

NMET also has a big effect on students' learning in China, in addition to how it affects teaching. Studies consistently demonstrate that the examination not only influences the content of students' studies but also dictates their study methods, motivations, and perceptions of their own learning processes. The literature emphasizes three interrelated aspects of NMET washback on learning: learning strategies, motivation, and perceptions.

Learning Strategies

Studies reveal that the NMET channels students toward particular strategies. Dong, M. (2020), using structural equation modeling, demonstrated that learners' perceptions of the NMET strongly predict their choice of learning practices, with more positive perceptions encouraging the adoption of structured approaches such as study planning, monitoring, and review. Similarly, Dong and Wang (2025) found that when students have a clearer understanding of the exam's design and demands, they employ more construct-relevant strategies, focusing on skills genuinely assessed by the test. However, when students misinterpret test demands, they resort to test-wise strategies, such as rote memorization, mechanical drilling, and past-paper practice. Zhang (2021) likewise reported that NMET preparation often pushes students toward surface-level strategies in extracurricular learning. At the tertiary level, Zhang and Bournot-Trites (2021) found that while the NMET consolidates discrete skills such as grammar and reading, its narrow scope leaves students underprepared for academic and communicative tasks in university. Collectively, these studies suggest that the NMET drives intensive learning strategies, but often at the cost of breadth and communicative competence.

Motivation

The NMET is also a powerful motivator of student effort, though largely through instrumental pathways. Dong and Liu (2022) found that learners who viewed the NMET as highly important invested significantly more time and energy into exam preparation. This demonstrates the exam's role in channeling student persistence and ensuring consistent effort. However, the quality of motivation is shaped by perceptions of difficulty. Dong, M. (2020) reported that while manageable difficulty stimulates engagement, excessive difficulty discourages sustained effort and deep learning. Thus, the NMET provides a double-edged motivational push: it guarantees high levels of effort but narrows motivation to short-term exam performance, limiting intrinsic engagement with English as a subject of broader personal or academic value.

Perceptions

Learners' perceptions serve as the pivotal mechanism of washback that connects test design to learning outcomes. Positive views of the NMET's importance encourage systematic study habits, while negative views of it being too hard make students less likely to adapt (Dong, M., 2020; Dong & Liu, 2022). Dong (2022) further illustrated that contextual factors, including school status and classroom practices, influence these perceptions: students in elite institutions, equipped with superior resources and teacher support, frequently regard the NMET as more manageable, whereas those in less privileged schools perceive it as intimidating and overwhelming. Zhang (2021) emphasized the significance of self-efficacy, demonstrating that test-takers' confidence in their capacity to self-regulate learning influences the conversion of perceptions into extracurricular English learning. Additionally, perceptions change as the exam date approaches. For example, students who are getting closer to the NMET start focusing more on exam-driven practices and less on more balanced learning. These results show that perceptions are not the same for everyone; they depend on the situation and are shaped by both individual psychology and systemic inequalities.

To sum up, these studies show that the NMET affects how students learn in strong but uneven ways. It directs students toward organized study and consistent effort, but it also limits strategies to exam-specific techniques, emphasizes instrumental motivation over intrinsic engagement, and exacerbates disparities influenced by school context and exam proximity. Perceptions are the main thing that decides whether exam pressure leads to useful, skill-relevant learning or to mindless drilling. The NMET makes sure that students study hard, but its washback doesn't always help them develop the skills they need for college and lifelong learning. For sustainable positive washback to happen, reforms are needed that expand test constructs and improve students' assessment literacy, so that strategies, motivation, and perceptions can all work together to achieve meaningful language learning outcomes beyond the test.

Influence on Learning Outcomes

Several studies have examined the NMET's influence on learning outcomes, both at the secondary and tertiary level. These studies explore the degree to which the NMET influences learners' outcome, long-term language acquisition, and readiness for higher education. Dong, M. (2020) conducted a quantitative analysis examining the structural relationships between learners' perceptions of the NMET, their learning practices, and their outcomes. The results show that perceptions are an important mediator: students, who see the NMET as important and manageable, are more likely to use systematic methods like planning and monitoring, which are linked to better English learning outcomes. Negative perceptions, on the other hand, make preparation less effective. Dong, L. Z. (2022) examined the "delayed" washback effect of the NMET on college students. The research revealed that the test's limited skill emphasis resulted in enduring deficiencies in learning. Students said they weren't ready for listening and speaking tasks when they got to college, but they did know a lot about grammar and reading. This shows that not having listening on the NMET not only hurts learning in high school but also limits results in college. This study showed how important test design is in the long run. Zhang (2024) emphasizes the importance of perceptions by analyzing how high school students view the NMET's influence on

their English learning outcomes. The study revealed that students linked the examination to both positive outcomes (e.g., improved grammatical and vocabulary precision) and negative outcomes (e.g., limited oral proficiency). Importantly, perceptions differed by home province, reflecting variations in exam format and local educational contexts. Zhang said that the NMET needs to be changed so that it better fits with bigger educational goals. This will make sure that the test results are more than just passing the test. Shi (2025) focused on the predictive validity of the NMET by examining the correlation between NMET performance and subsequent college English success. Shi (2025) revealed that although NMET scores exhibited a moderate correlation with post-admission English performance, they did not serve as reliable indicators of the communicative competence or academic literacy necessary for higher education. These results show that the skills needed for university study don't match up with the skills that NMET preparation teaches. This makes us question whether the test is a good way to decide who gets into college.

In brief, these studies suggest that the NMET has a strong but uneven influence on learning outcomes. NMET enhances discrete skills such as grammar, vocabulary, and reading comprehension, and motivates students to achieve higher scores. However, its narrow construct coverage limits the development of listening and communicative abilities, leading to gaps that persist into tertiary education. Moreover, the NMET's predictive power for university success remains contested, with evidence indicating that it only partially reflects the skills necessary for academic contexts. Overall, the literature demonstrates that while the NMET drives measurable outcomes, it also narrows learning and creates misalignments between secondary preparation and higher-education demands.

Direction of Washback

One of the central concerns in washback research is the direction of washback, whether test influence promotes positive pedagogical and learning outcomes, results in negative narrowing effects, or produces a mixture of both. Studies on the NMET reforms illustrate the complex and often context-dependent nature of washback direction.

Positive Washback

Several studies provide evidence of positive washback. Hou (2018), in his investigation of the listening and speaking test reform in Zhejiang's NMET, reported that most teachers evaluated the reform favorably. The new test components encouraged greater attention to listening and speaking in the classroom, skills that had traditionally been marginalized in exam preparation. Interestingly, suburban schools appeared more responsive to the reform than urban schools, though no significant differences were found between school levels. Liang et al. (2025) further underscored the role of teacher beliefs in determining washback direction. They found that when teachers' beliefs aligned with the objectives of the NMET, they were more likely to integrate authentic materials, multimedia resources, and communicative tasks into their teaching, thereby generating positive washback. These findings suggest that test reforms can lead to constructive changes when they expand the tested construct and when teachers perceive their goals as valid and achievable.

Negative Washback

At the same time, research reveals negative or narrowing consequences of NMET reform. Yu (2020), in his study of new writing tasks introduced in Zhejiang's NMET, identified both the presence and the limitations of washback. While the new tasks aimed to broaden students' writing skills, many teachers and learners reduced their preparation to practicing test formats and drilling sample answers. This overemphasis on format and scoring criteria constrained the development of authentic writing competence and highlights how high-stakes contexts can undermine the intended pedagogical benefits of reform.

Mixed Washback

Other studies present a more nuanced picture of mixed washback. Chen et al. (2018) investigated the “twice-a-year” NMET reform in Zhejiang, focusing on its impact on teachers’ instruction, students’ learning, and the alignment between expected and actual effects. Findings indicated that while the reform reduced test anxiety and improved student motivation, exam-oriented practices remained entrenched, particularly in less advantaged schools. The study points to a mismatch between intended policy goals and classroom realities, producing a blend of positive and negative washback. Similarly, Zhang (2024) explored senior high school students’ perceptions of NMET washback on their English learning outcomes. Students reported that exam preparation improved their grammar, vocabulary, and accuracy, but simultaneously limited the development of oral and communicative skills.

In conclusion, these studies demonstrate that the direction of NMET washback is rarely unidirectional. Positive effects can be seen when reforms make constructs more comprehensive and when teachers’ beliefs align with test goals, as seen in the listening and speaking components (Hou, 2018) or belief-driven pedagogical innovation (Liang et al., 2025). When studying for exams turns into mindless drilling and format practice, negative effects occurred, especially with the new writing tasks (Yu, 2020). Nonetheless, the outcomes are generally ambivalent: reforms alleviate certain pressures and expand the instructional focus, yet the entrenched examination culture continues to impede substantive changes (Chen et al., 2018; Zhang, 2024). These findings underscore that washback direction ought to be regarded as dynamic, context-dependent, and shaped by stakeholder beliefs and resources, rather than as uniformly positive or negative.

CONCLUSION

This review of empirical studies regarding the washback effects of the NMET illustrates that this high-stakes assessment exerts a significant yet complex impact on English education. Findings suggest that the NMET affects how teachers teach, often limiting what they can teach to skills that will help test-takers pass the test. On the other hand, reforms that involve listening and speaking can have a bigger impact on how teachers teach. However, for these changes to endure, educators must have faith in them, and educational institutions must endorse them. At the learner level, the NMET encourages organized preparation and ongoing effort, mainly through instrumental motivation. Strategies are often limited to rote practice and behaviors that are focused on passing tests. Learner perceptions serve as a crucial intermediary: when students perceive the exam as significant and achievable, they engage in more adaptive practices; conversely, excessive difficulty inhibits effort or leads to superficial strategies. In terms of learning outcomes, getting ready for the NMET improves specific skills like grammar and reading, but it doesn’t help with listening and communication skills, which raises concerns about how well it prepares students for college-level work. The exam’s predictive validity for university performance is only partial, which shows that NMET scores shouldn’t be the only thing used to decide who gets in. The literature indicates that the direction of washback follows a dynamic and context-dependent pattern: while positive washback is evident when reforms broaden construct coverage and when teacher beliefs align with test objectives, negative effects persist in the form of mechanical drilling and exam-centered instruction. In most cases, washback emerges as mixed, reflecting the tension between intended reforms and entrenched exam culture.

Overall, this body of research suggests that while NMET ensure seriousness of study and measurable short-term outcomes, they also constrain pedagogy, reinforce inequalities, and inadequately prepare learners for higher education. To achieve sustainable positive washback, reforms must move beyond test design to address teacher cognition, learner perceptions, and systemic educational support. Future researches are required to adopt longitudinal and multi-contextual approaches to capture the evolving nature of washback, examine how reforms are mediated by local conditions, and explore strategies for bridging the gap between exam preparation and the broader goals of English education.

REFERENCES

1. Huang, L., & Zeng, J. (2025). Sustainability of washback effects: a longitudinal study of China's twice-yearly NMET reform. *Language Testing in Asia*, 15(1), 19.
2. Alderson, J. C., & Wall, D. (1993). Does washback exist? *Applied linguistics*, 14(2), 115-129.
3. Bailey, K. M. (1996). Working for washback: A review of the washback concept in language testing. *Language testing*, 13(3), 257-279.
4. Chen, Y. J., Cai, J. T., & Hu, L. P. (2018). A study on the washback effect of the new reform model of the foreign language Gaokao. *Foreign Language Research*, (1), 79-85.
5. Cheng, X., Zhang, S. L., & Qian, J. Y. (2021). A study on the washback effect of the new listening and speaking test in the Shanghai Gaokao. *Foreign Language Teaching and Research*, (3), 83-94.
6. Dong, L. Z. (2017). A study on the washback effect of the listening test in the National College Entrance Examination. *Foreign Language Testing and Teaching*, (1), 42-49.
7. Dong, L. Z. (2022). The "delayed" washback effect of the Gaokao English test without a listening section: A correlation analysis based on Gaokao English scores and CET-4 scores of college students in a regular university. *Journal of Yulin University*, (6), 105-109.
8. Dong, M. (2020). Structural relationship between learners' perceptions of a test, learning practices, and learning outcomes: A study on the washback mechanism of a high-stakes test. *Studies in Educational Evaluation*, 64, 100824.
9. Dong, M. (2022). Do school status and classroom English learning practices influence Chinese learners' perceptions of a high-stakes English test?. *Language Testing in Asia*, 12(1), 28.
10. Dong, M. X. (2018). A study on the washback effect of the National College Entrance Examination on senior high school English classroom teaching. *Basic Foreign Language Education*, 20(2), 25-32.
11. Dong, M., & Liu, X. (2022). Impact of learners' perceptions of a high-stakes test on their learning motivation and learning time allotment: A study on the washback mechanism. *Heliyon*, 8 (12), e11910.
12. Dong, M., & Wang, B. (2025). Does students' understanding of test designs and demands of a high-stakes test influence their learning practices: a washback study. *Language Testing in Asia*, 15(1), 17.
13. Green, A. (2007a). *IELTS washback in context: Preparation for academic writing in higher education* (Vol. 25). Cambridge University Press.
14. Green, A. (2007b). Washback to learning outcomes: A comparative study of IELTS preparation and university pre-session language courses. *Assessment in Education*, 14(1), 75-97.
15. Hou, Y. P. (2018). A study on the washback effect of the reform of the listening and speaking test in the foreign language Gaokao. *Computer-Assisted Foreign Language Education*, (5), 23-29.
16. Liang, Y., Siraj, S., & Lo, Y. Y. (2025). Exploring washback processes in language teaching through teachers' beliefs in the Chinese National Matriculation English Test (NMET). *Humanities and Social Sciences Communications*, 12(1), 1-11.
17. Shi, C. (2025). A Case Study of National Matriculation English Test Validity in Predicting Students' English Performance in College. *SAGE Open*, 15(2), 21582440251331196.
18. Yu, C. (2020). The Washback of the New Writing Tasks in China's National Matriculation English Test. *English Language Teaching*, 13(1), 99-111.
19. Zhang, H. (2024). The washback of the National Matriculation English Test on senior high school English learning outcomes: do test takers from different provinces think alike?. *Language Testing in Asia*, 14(1), 14.
20. Zhang, H., & Bournot-Trites, M. (2021). The long-term washback effects of the National Matriculation English Test on college English learning in China: Tertiary student perspectives. *Studies in Educational Evaluation*, 68, 100977.

21. Zhang, H., & Zhang, W. X. (2020). The washback effect of the English subject in Gaokao on senior high school English teaching from teachers' perspective: Based on a large-scale national survey. *Foreign Language Teaching and Research*, 171(3), 36.
22. Zhang, J. (2021). A moderated mediation analysis of the relationship between a high-stakes English test and test takers' extracurricular English learning activities. *Language Testing in Asia*, 11(1), 5.
23. Zhang, R. (2019). An analysis of the washback effect of the listening and speaking test in the Shanghai College Entrance Examination under the new Gaokao background: A case study of School J. *Foreign Language Testing and Teaching*, (4), 47-53.