

Investigating Learner-Related Washback of the Senior High School English Matriculation Test: Evidence from Chengdu, China

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ABSTRACT

High-stakes English examinations are closely connected to students' learning experiences, particularly when examination results determine access to further educational opportunities. In China, much of the washback literature has concentrated on national or university-level English examinations, whereas less is known about how students experience washback from locally administered senior high school entrance examinations. This study focuses on the Senior High School Matriculation English Test (SHSMET) in Chengdu and examines four aspects of students' examination-related experiences: student learning, motivation, test-taking strategies, and test anxiety.

The study used a quantitative cross-sectional design and involved 981 Grade 10 and Grade 11 students who had completed the SHSMET one or two years prior the survey. Their earlier experiences of preparing for the examination were collected retrospectively through an adapted Student Learning Questionnaire, selected Motivation and Test-Taking Strategies sub-scales from the Learning and Study Strategies Inventory, and an adapted Westside Test Anxiety Scale. Descriptive statistics were first used to examine students' reported experiences, followed by partial least squares structural equation modelling (PLS-SEM) to assess the relationships between the four learner-related factors and SHSMET performance.

Students reported moderate levels of learning engagement, motivation, and use of test-taking strategies, while test anxiety was moderately high. The four factors were also significantly associated with examination performance, but not to the same degree. Student learning had the strongest positive relationship with SHSMET performance. Test-taking strategies also showed a positive relationship, whereas the contribution of motivation was relatively small. Higher test anxiety was associated with lower performance in exams.

These results show that students' experiences of SHSMET cannot be understood simply in terms of more or less learning or even better learning. Preparation for the examination was also associated with how students approached the test, their motivation to study, and the anxiety they experienced during the test. The findings add evidence from a Chinese secondary school setting to learner centered washback research and suggest that preparation for high-stakes English examinations should support language development and effective learning strategies without overlooking the psychological pressure experienced by students.

Keywords: Washback, SHSMET, High-stakes English assessment, Learner-related factors, PLS-SEM

INTRODUCTION

High-stakes examinations are an important part of many education systems because their results are often used to make decisions about students' progression and access to further education. Their role, however, is not limited to measuring what students know or can do. When examination results have important consequences, students and teachers may adjust their learning and teaching in response to what is tested. In language assessment, these effects are generally discussed in terms of washback (Alderson & Wall, 1993; Bailey, 1996; Cheng, 2005). For students, such effects may be seen in the content they choose to study, the amount of effort they devote to examination preparation, and the strategies they use to meet test requirements (Green, 2007, 2020).

Much of the earlier research on washback examined changes in teaching, curriculum, and classroom practice. However, learners do not simply receive the effects of an examination. They make their own decisions about what to study, how to prepare, and how much effort to invest, while also responding emotionally to the pressure associated with the test (Bailey, 1996; Xie & Andrews, 2013; Xie, 2020; Tsang & Isaacs, 2022). These responses can develop in different directions. Preparing for an important examination may lead students to study English more regularly and use more deliberate learning or test-taking strategies. At the same time, it may narrow their attention towards tested content or increase anxiety about examination performance. For this reason, examining washback from the learner perspective requires attention to several aspects of students' experience rather than treating it simply as either positive or negative.

High-stakes examinations have a particularly strong influence in China because examination results are closely tied to students' educational progression. Alongside the National College Entrance Examination (NCEE), the Senior High School Entrance Examination (SHSEE) is another important examination that students face, marking the transition from junior to senior secondary education. English is one of the major subjects in the SHSEE. In this study, Senior High School Matriculation English Test (SHSMET) is used to refer specifically to the English component of the SHSEE. Students' SHSMET scores contribute to their overall entrance results and therefore have implications for the senior high schools and educational pathways available to them (Cheng, 2008; Zhao, 2016; Song, 2023).

Although washback has been widely discussed in language assessment research, much of the research in China has focused on the National Matriculation English Test (NMET), university-level examinations, or international English language tests. Less attention has been given to English examinations taken at the transition from junior to senior high school, particularly from the students' perspectives. Existing studies also tend to focus on particular aspects of learner responses separately. Consequently, there is still limited evidence showing how students' learning, motivation, preparation strategies, and anxiety may be experienced together in relation to the same high-stakes examination. This is especially true for the SHSMET in Chengdu, where quantitative research examining these learner-related aspects remains limited.

This study considers four aspects of students' experiences with the SHSMET: student learning, motivation, test-taking strategies, and test anxiety. Student learning covers how students viewed the relationship between the examination and their English learning, their perceived development of English skills and academic readiness, and their attitudes towards and engagement in learning. Motivation focuses on the effort and persistence students reported in their studies, while test-taking strategies concern the ways they prepared for and approached the examination. Test anxiety addresses the worry and emotional tension students experienced in relation to the test. Examining these four areas together makes it possible to look beyond changes in study behavior and consider a broader range of student experiences associated with SHSMET preparation.

It is important to separate two issues examined in this study. The first concerns students' reported experiences of SHSMET preparation and the extent to which washback was reflected in their learning, motivation, test-taking strategies, and test anxiety. The second concerns whether these four learner-related factors were related to students' examination performance. These are connected questions, but they are not the same. In particular, relationships identified in the structural model should not be taken to mean that the SHSMET caused changes in students' learning, motivation, strategies, or anxiety. Such an interpretation would go beyond what can be established from a cross-sectional study based on retrospective reports.

The participants were Grade 10 and Grade 11 students in Chengdu who had taken the SHSMET one or two years before the survey. They were asked to report their experiences during the period when they were preparing for the examination. The study was guided by the following two research questions:

RQ1: To what extent is SHSMET related washback reflected in students' learning, motivation, test-taking strategies, and test anxiety?

RQ2: How are student learning, motivation, test-taking strategies, and test anxiety associated with students' SHSMET performance?

These questions allowed the study to examine SHSMET from two related perspectives: what students reported about their experiences of preparing for the examination and how the four learner-related factors were associated with their examination results. In this way, the study brings evidence from Chengdu into the wider discussion of learner-centred washback and gives particular attention to a secondary-school English examination that has received less attention than national, university-level, and international language tests.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Learning, Motivation, and Strategic Responses to High-Stakes Assessment

Student Learning

Student learning is one of the areas in which the influence of a high-stakes examination may become visible. When preparing for an important examination, students may change what they study, spend more time on particular areas of the subject, or adjust the way they learn. These changes can lead to more regular and focused study, but more study does not always mean better learning. If students concentrate mainly on memorizing answers, repeatedly practising similar questions, or studying only the content that is likely to appear in the examination, their preparation may become increasingly test-oriented and leave less room for broader learning (Green, 2007).

This issue is especially relevant to language learning, where examination preparation can serve different purposes. It may help students improve their English, but it may also lead them to focus mainly on question types and techniques needed for the test. Studies of high-stakes language assessment have reported changes in students' learning priorities, preparation practices, and engagement with English (Hung & Huang, 2019; Xie, 2020; Dong et al., 2023). Some effects may continue even after the examination. For example, Zhang and Bournot-Trites (2021) found that students could still identify the influence of an earlier high-stakes English examination on their later English-learning experiences.

For this study, student learning is considered from three related areas: perceptions of SHSMET and English learning (SLA), English skill development and academic readiness (SLB), and English learning attitudes and engagement (SLC). Looking at these three areas makes it possible to consider not only what students did to

prepare for the SHSMET; but also how they viewed its relationship with their English learning, their development of English skills, and their engagement with the subject.

Motivation

Motivation is also relevant when considering how students respond to a high-stakes examination. When examination results affect future educational opportunities, students may have strong reasons to devote more time and effort to their studies. This does not necessarily mean, however, that they become more interested in learning English itself. A student may work hard because of personal interest in English, but the same level of effort may also come from the desire to achieve a good examination result or gain admission to a preferred senior high school.

Self-determination theory (SDT) helps explain why similar levels of effort may have different motivational sources. Ryan and Deci (2000, 2020) distinguish between motivation that is more autonomous and motivation that is more strongly shaped by external demands or outcomes. In the context of SHSMET preparation, students may study because they enjoy English or consider it personally valuable. Others may be more concerned with examination scores, academic achievement, or the educational opportunities attached to those results. In practice, these reasons may also occur together rather than separately.

Previous washback studies have found that high-stakes assessment is related to students' motivation and engagement with learning (Dong & Liu, 2022; Hasanudin et al., 2023). In the present study, however, the motivation measure focuses on students' effort, persistence, and engagement. It does not separately measure the different types of motivation proposed in SDT. Therefore SDT is used to help interpret the motivational findings rather than to classify students as intrinsically or extrinsically motivated.

Test-Taking Strategies

High-stakes examinations may also be associated with changes in how learners prepare for and approach assessment tasks. Test-taking strategies may involve planning, reviewing examination materials, managing time, monitoring comprehension, evaluating responses, and adjusting approaches according to task demands. These behaviors can help learners regulate their preparation and demonstrate their knowledge effectively.

Metacognitive theory provides a relevant framework for understanding such strategic behaviour. Metacognition involves awareness and regulation of cognitive processes through planning, monitoring, and evaluation (Flavell, 1979; Schraw & Dennison, 1994). In language assessment, metacognitive processes can support decisions about task demands, strategy selection, comprehension monitoring, and response evaluation (Anderson, 2002; Phakiti, 2003).

From a washback perspective, however, strategic preparation is not inherently positive. Strategies that strengthen planning, monitoring, and self-regulation may support broader learning, whereas excessive reliance on predicted questions, memorized responses, or examination-specific techniques may narrow the learning process. Test-taking strategies are therefore examined in this study as a strategic dimension of learner-related washback without assuming that all strategy use constitutes educationally beneficial washback.

Test Anxiety and Psychological Washback

Test-taking strategies are another way in which students may respond to the demands of a high-stakes examination. During preparation, students may review previous examination materials, plan how to approach different tasks, practise time management, or check their understanding and answers more carefully. The strategies used during the examination itself may also change as students become more familiar with the test. In

this sense, preparation involves not only what students learn but also how they organise and manage their approach to the examination.

Meta-cognitive theory offers a useful way of understanding these behaviors. Flavell (1979) describes meta-cognition in terms of learners' awareness and regulation of their own thinking, while later work has emphasized processes such as planning, monitoring, and evaluation (Schraw & Dennison, 1994). These processes are also relevant to language assessment. Students need to decide how to approach a task, select appropriate strategies, monitor their understanding as they work, and reconsider their responses when necessary (Anderson, 2002; Phakiti, 2003). Test-taking strategies can therefore involve more than knowing particular examination techniques; they may also reflect how students regulate their thinking and actions when preparing for and completing a test.

At the same time, greater use of test-taking strategies should not automatically be regarded as positive washback. Some strategies, such as planning, monitoring understanding, and reviewing responses, may be useful beyond a particular examination. Others may be closely tied to the test itself. For example, repeatedly practising predicted questions or relying on memorized responses may help students prepare for familiar task types without necessarily improving their broader English ability. For this reason, the present study examines test-taking strategies as part of students' SHSMET-related experience, while recognizing that different strategies may have different implications for learning.

Theoretical Framework

The four areas examined in this study involve different aspects of students' experiences with the SHSMET, and no single theoretical perspective fully explains all of them. For this reason, this study draws on several theories to support the interpretation of student learning, motivation, test-taking strategies, and test anxiety. These include constructivist learning theory, self-determination theory, metacognitive theory, and cognitive test anxiety theory.

Student learning is considered mainly from a constructivist perspective. Constructivist accounts emphasize that learners do not simply receive knowledge but develop their understanding through prior knowledge, experience, and continued engagement with learning (Piaget, 1950; Vygotsky, 1978). This perspective is relevant to the SHSMET because students preparing for the examination may reorganize their learning, place greater attention on particular English skills, and change the way they engage with the subject. Therefore it helps to explain the learning experiences covered by SLA, SLB, and SLC.

Motivation and test-taking strategies involve somewhat different processes. SDT is used to interpret students' motivation because effort in a high-stakes examination context can have different sources. Students may study because they value or enjoy learning English, because they want to achieve academically, or because examination results affect their future educational opportunities (Ryan & Deci, 2000, 2020). As discussed earlier, the motivation measure used in this study does not separate these motivational types, so SDT is used to interpret the findings rather than to test intrinsic and extrinsic motivation as distinct constructs.

The use of test-taking strategies is considered through metacognitive theory. Planning how to prepare, monitoring understanding, checking responses, and changing an approach when it is not working all involve some degree of regulation of learning and performance (Flavell, 1979; Schraw & Dennison, 1994). This perspective is useful for understanding why students may adopt particular strategies when preparing for and taking the SHSMET, although it does not imply that every examination strategy necessarily contributes to broader English learning.

Test anxiety requires a different explanation because it concerns students' psychological response to the examination rather than their learning or preparation behavior. Cognitive Test Anxiety Theory suggests that

worry about an examination can occupy cognitive resources that would otherwise be available for the task itself (Wine, 1980; Sarason, 1984). It is used here to interpret students' reported anxiety and its relationship with examination performance.

These theories are used to make sense of different parts of the learner experience, rather than as four causal models to be tested against one another. This point is important for the analysis that follows. Students' retrospective reports are first used to examine how learning, motivation, test-taking strategies, and test anxiety were reflected in their SHSMET related experiences. The structural analysis then asks a different question: whether these learner-related factors were associated with SHSMET performance. Given the cross-sectional and retrospective design of the study, those relationships are interpreted as associations rather than evidence that the examination caused changes in the four learner-related factors.

METHODOLOGY

Research Design

This study employed a quantitative, cross-sectional correlational design to investigate learner-related washback associated with the SHSMET and the relationships between learner-related characteristics and examination performance. The quantitative approach was appropriate because the study sought to examine patterns across a relatively large sample and evaluate relationships among multiple learner-related constructs using statistical modelling.

This study comprised two related analytical components. First, descriptive analysis was used to examine the extent to which SHSMET-related washback was reflected in students' reported learning, motivation, test-taking strategies, and test anxiety. Second, partial least squares structural equation modelling (PLS-SEM) was employed to examine the measurement properties of the learner-related constructs and their relationships with students' SHSMET performance. Consistent with the correlational design, the structural relationships were interpreted as associations rather than as evidence of causality.

Participants and Sampling

The participants were Grade 10 and Grade 11 students in Chengdu, Sichuan Province, China, who had taken the SHSMET within the previous one to two years. Although the SHSMET is taken during junior secondary education, the respondents had subsequently progressed to senior high school and retrospectively reported their previous SHSMET related experiences. This participant group was selected because respondents had already completed the examination and could therefore reflect on their learning, motivation, test-taking strategies, and test anxiety associated with their previous SHSMET experience.

A purposive sampling strategy was employed to recruit participants who met the eligibility criteria for this study. Participants were drawn from schools located in five urban districts of Chengdu: Jinjiang, Qingyang, Chenghua, Wuhou, and Jinniu Districts. Eligibility required participants to be Grade 10 or Grade 11 students who have taken the SHSMET within the preceding one to two years. The sampling strategy was intended to obtain respondents with direct and sufficiently recent experience of the examination.

Approximately 1,000 participants were initially targeted across the five districts. A total of 1,015 responses were obtained. Following data screening, 981 valid cases were retained for the final analysis, representing 96.6% of the initially collected responses.

Research Instruments

Data were collected using a structured questionnaire that included demographic and background information, self-reported SHSMET scores, and measures of student learning, motivation, test-taking strategies, and test anxiety. The measures were adapted from established instruments, as summarized in Table 1.

Table 1: Research Instruments

Construct	Instrument	Items	Response format
Student Learning	Adapted Student Learning Questionnaire (SLQ)	31	5-point Likert scale
Motivation	Motivation subscale of the LASSI	8	5-point Likert scale
Test-Taking Strategies	Test Strategies subscale of the LASSI	12	5-point Likert scale
Test Anxiety	Adapted Westside Test Anxiety Scale (WTAS)	10	5-point Likert scale

Student Learning

Student learning was assessed using an adapted version of the Student Learning Questionnaire (SLQ) developed by Zhang and Bournot-Trites (2018). The instrument contained 31 items and was conceptualized as a higher-order construct comprising three lower-order dimensions:

- SLA – Perceptions of SHSMET and English Learning
- SLB – English Skill Development and Academic Readiness
- SLC – English Learning Attitudes and Engagement

This multidimensional structure allowed student learning to capture broader learning-related experiences associated with SHSMET rather than treating learning as a single behavioral dimension. The higher-order specification and its three constituent dimensions were subsequently assessed within the PLS-SEM measurement model.

Motivation

Motivation was measured using the Motivation subscale of the Learning and Study Strategies Inventory (LASSI). The eight-item scale assessed students' effort, persistence, and engagement with learning. Items were rated using a five-point response scale. In the present study, motivation was treated as an overall learner-related construct rather than being separated into intrinsic and extrinsic dimensions.

Test-Taking Strategies

Test-taking strategies were measured using the Test Strategies subscale of the LASSI, comprising 12 items. The scale assesses behaviors related to examination preparation and test performance, including students' strategic approaches to reviewing, organizing, and responding to examination demands. Responses were recorded on a five-point scale.

Test Anxiety

Test anxiety was measured using an adapted Westside Test Anxiety Scale (WTAS) consisting of 10 items. The scale assesses cognitive and affective responses to examination situations, including worry, difficulty concentrating, and performance-related anxiety. Items were rated on a five-point scale.

In addition to the four learner-related constructs, participants reported their previous SHSMET scores, which were used as the observed examination-performance variables in the structural analysis.

Translation and Cross-Cultural Adaptation

As the instruments were originally developed in English, Chinese versions were prepared for the participants. The translation focused on retaining the meaning of the original items while making the wording clear and appropriate for students in the Chinese educational environment.

The instruments were first translated from English to Chinese and then independently back-translated into English. The back-translated items were checked against the original versions to identify differences in meaning and interpretation. Where discrepancies were found, the Chinese wording was revised accordingly. The review also considered whether the items were culturally appropriate, easy for the target students to understand, and consistent with the concepts measured by the original instruments. The Chinese questionnaire further reviewed before it was used in the pilot study.

These procedures helped reduce the possibility that translation would alter the intended meaning of the items and produced a questionnaire that could be understood appropriately by the Grade 10 and 11 students participating in the study.

Pilot Study

A pilot study was conducted in September 2024 with 100 Grade 10 and 11 students from a senior high school in Chenghua District, Chengdu. The group included 52 male and 48 female students, with an average age of 15.96 years. Before the main survey, the pilot was used to check whether the questionnaire items were clear and understandable to students and to examine the internal consistency of the four scales.

Reliability analysis showed high internal consistency for all four measures. Cronbach's alpha coefficients were .813 for motivation, .991 for student learning, .975 for test-taking strategies, and .973 for test anxiety. The alpha coefficient for the questionnaire as a whole was .959. Based on the pilot results, no items were considered necessary to remove, and the same measures were used in the main data collection.

Data Collection and Ethical Considerations

Data collection began after the translation and pilot study were completed. Before completing the questionnaire, students received a brief explanation of the study and instructions on how to respond to the questions. They were also told that participation was voluntary and that their responses would remain confidential and be used only for research purposes.

The questionnaire did not ask students to provide information that would identify them individually in the analysis. Students reported basic demographic and background information, their previous SHSMET score, and their responses to the measures of student learning, motivation, test-taking strategies, and test anxiety.

Data Screening and Analysis

Data analysis was carried out using IBM SPSS 26.0 and SmartPLS 4.0. The data were checked before the main analysis, including missing responses, response quality, possible outliers, data distribution, and common method bias. Since all questionnaire items required a response before submission, there were no item-level missing values. A total of 1,015 questionnaires were initially collected. After the screening process, 981 cases remained for analysis.

Means and standard deviations were calculated for student learning, motivation, test-taking strategies, and test anxiety. These descriptive results were used to examine how strongly each aspect was reflected in students' reported SHSMET-related experiences.

The PLS-SEM analysis in SmartPLS 4.0 involved both the measurement and structural models. The measurement model was examined first to determine whether the constructs were measured reliably and could be distinguished from one another. Outer loadings were inspected for indicator reliability, while Cronbach's alpha and composite reliability (CR) were used to assess internal consistency. Convergent validity was examined using average variance extracted (AVE), and discriminant validity was checked to determine whether the constructs were empirically distinct. Student Learning (SL) was modelled as a higher-order construct consisting of SLA (Perceptions of SHSMET and English Learning), SLB (English Skill Development and Academic Readiness), and SLC (English Learning Attitudes and Engagement).

Once the measurement model had been assessed, the structural model was used to examine how student learning, motivation, test-taking strategies, and test anxiety were related to students' self-reported SHSMET performance. Inner VIF values were checked for possible collinearity among the predictor constructs. Path coefficients were then estimated and their significance was assessed through bootstrapping. The model's explanatory power was considered using the coefficient of determination (R^2), while effect sizes (f^2) were used to compare the contribution of the individual learner-related factors. Q^2 -based analysis was also included to examine the model's predictive relevance.

PLS-SEM was considered appropriate because the study involved several latent constructs and required the measurement and structural components of the model to be examined within the same analytical procedure (Hair et al., 2019). The analysis was also concerned with the predictive relationships between the learner-related factors and SHSMET performance. However, these relationships were not treated as evidence of causation. Given that the data were cross-sectional and based partly on students' retrospective reports, the structural results were interpreted as associations and predictive relationships rather than causal effects.

RESULTS

Data Screening and Preliminary Analysis

The initial data contained 1,015 questionnaire responses. Before proceeding with the main analysis, the data were checked for missing responses, response quality, possible outliers, distributional characteristics, and common method bias. As all questionnaire items required a response, there were no item-level missing data. Cases flagged during the screening process were reviewed individually rather than removed simply because they met a statistical criterion. Statistical evidence was considered together with whether the responses remained plausible in the context of the study. After completing these checks, 981 cases remained and were included in the final analysis.

The same 981 cases were used for the descriptive statistics and the subsequent measurement and structural model analyses. The preliminary checks did not identify any issues that would prevent the use of PLS-SEM. Collinearity among the predictor constructs was also within acceptable levels.

Learner-Related SHSMET Washback

The first research question examined the extent to which SHSMET related washback was reflected in students' learning, motivation, test-taking strategies, and test anxiety. Descriptive statistics for the four learner-related dimensions are presented in Table 2.

Table 2: Descriptive Statistics for Learner-Related SHSMET Washback

Construct	N	Minimum	Maximum	M	SD
Student Learning	981	1.65	4.32	3.025	.768
Test Anxiety	981	1.50	4.50	3.007	.758
Motivation	981	1.67	4.75	2.999	.861
Test-Taking Strategies	981	1.38	4.88	2.968	.892

Based on the equal-interval criteria used in this study, the mean scores for all four constructs were within the moderate range. Student learning had the highest mean, with test anxiety and motivation following closely, whereas test-taking strategies had the lowest. The mean scores were nevertheless relatively close, suggesting that no single dimension clearly dominated students reported SHSMET experiences.

Responses were evident across learning, motivation, test-taking strategies, and test anxiety. Students therefore recalled their SHSMET experience in ways that went beyond changes in English learning alone. Learning-related experiences were somewhat more noticeable descriptively, while motivational and strategic responses were also present at comparable levels.

Test anxiety was interpreted with reference to the scoring guidance of the WTAS as well as the general equal-interval criteria. Under the general classification, the mean fell within the moderate range. The WTAS, however, classifies scores from 3.0 to 3.4 as indicating moderately high test anxiety. With a mean score of 3.007, participants' responses fell just within this category. Anxiety can thus be considered a noticeable part of their recalled experience of preparing for and taking the SHSMET.

Taken together, the descriptive results address RQ1 by showing that students reported experiences across each of the four areas examined in the study. SHSMET-related washback was therefore reflected in learning, motivation, test-taking strategies, and test anxiety, rather than in learning behaviour alone.

Measurement Model Assessment

Before examining the relationships between learner-related constructs and SHSMET performance, the measurement model was assessed for indicator reliability, internal consistency reliability, convergent validity, and discriminant validity.

All indicator loadings exceeded the recommended threshold of .70, ranging approximately from .75 to .94, indicating satisfactory indicator reliability. Cronbach's alpha values ranged from .800 to .952, while composite

reliability (ρ_c) values ranged from .904 to .957, demonstrating satisfactory internal consistency. Average Variance Extracted (AVE) values ranged from .600 to .830, exceeding the recommended minimum of .50 and therefore supporting convergent validity.

A condensed summary of the measurement results is presented in Table 3.

Table 3: Summary of Measurement Model Reliability and Convergent Validity

Construct/Dimension	Cronbach's α	Composite Reliability (ρ_c)	AVE
Motivation (MOT)	.914	.930	.625
SLA	.800	.907	.830
SLB	.947	.954	.612
SLC	.952	.957	.600
TASA	.872	.907	.661
TASB	.868	.904	.654
Test-Taking Strategies (TTS)	.938	.947	.617

Student Learning was represented as a higher-order construct comprising SLA, SLB, and SLC, and the measurement results supported the empirical adequacy of these constituent dimensions. The adapted motivation, test-taking strategies, and test-anxiety measures likewise demonstrated satisfactory measurement properties.

Discriminant validity was assessed using the Heterotrait-Monotrait ratio (HTMT). HTMT values ranged from .392 to .818, with the highest value observed between SLB and SHSMET performance (.818). As all values remained below the conservative threshold of .85, satisfactory discriminant validity was established.

These results indicate that the learner-related constructs were measured with adequate reliability and validity and could therefore be used in the subsequent structural analysis.

Relationships Between Learner-Related Factors and SHSMET Performance

The second research question examined how student learning, motivation, test-taking strategies, and test anxiety were associated with students' self-reported SHSMET performance.

Before assessing the structural paths, collinearity among the four predictor constructs was examined. VIF values ranged from 1.807 to 2.569, with values of 1.891 for motivation, 2.569 for student learning, 1.883 for test anxiety, and 1.807 for test-taking strategies. All values were below the recommended threshold, indicating that multicollinearity did not present a concern for interpretation of the structural relationships.

Bootstrapping with 5,000 subsamples was then used to examine the estimated relationships between the learner-related constructs and SHSMET performance. As shown in Table 4, all four relationships were statistically significant.

Table 4: Relationships Between Learner-Related Constructs and SHSMET Performance

Relationship	β	t	p	f^2
Student Learning → SHSMET Performance	.585	22.958	< .001	.686
Test-Taking Strategies → SHSMET Performance	.205	8.740	< .001	.119
Motivation → SHSMET Performance	.112	5.860	< .001	.034
Test Anxiety → SHSMET Performance	-.118	6.208	< .001	.038

Student learning demonstrated the strongest positive relationship with SHSMET performance ($\beta = .585$, $p < .001$). Students reporting stronger learning-related characteristics also tended to report higher SHSMET scores. Test-taking strategies showed the second strongest positive relationship ($\beta = .205$, $p < .001$), while motivation demonstrated a smaller positive association ($\beta = .112$, $p < .001$). In contrast, test anxiety was negatively associated with SHSMET performance ($\beta = -.118$, $p < .001$), indicating that higher levels of reported anxiety were associated with lower examination scores.

The effect sizes varied considerably across the four learner-related factors. Student learning had a large effect on SHSMET performance ($f^2 = .686$), clearly exceeding the effects of the other three factors. The effect for test-taking strategies was smaller ($f^2 = .119$). Motivation ($f^2 = .034$) and test anxiety ($f^2 = .038$) each accounted for relatively little unique variance once the other factors were included in the model.

At the model level, the four factors together explained 80.6% of the variance in students' self-reported SHSMET performance ($R^2 = .806$). Predictive assessment also yielded a Q^2_{predict} value of .804 for SHSMET performance.

The pattern across the structural results was not the same for all four factors. Student learning showed the strongest relationship with SHSMET performance, and test-taking strategies also had a positive association. Motivation was positively related to performance but its contribution was relatively small, while test anxiety showed a small negative relationship. SHSMET performance was thus related to several aspects of students' learning and examination experience, although student learning was clearly the most influential factor in the model.

These results need to be distinguished from the descriptive findings reported for RQ1. RQ1 describes how strongly the four areas appeared in students' retrospective reports of their SHSMET experience. RQ2 asks a different question: how those same learner-related factors were related to examination performance. For example, a factor may be clearly present in students' reported experience without necessarily having a large structural relationship with their SHSMET score. The path coefficients and effect sizes reported here should therefore be read as relationships within the structural model, rather than as measures of how much washback the SHSMET produced.

DISCUSSION

This study investigated learner-related washback associated with the SHSMET in Chengdu through four dimensions: student learning, motivation, test-taking strategies, and test anxiety. It further examined how these learner-related characteristics were associated with students' self-reported SHSMET performance. Overall, the findings support a multidimensional account of learner-related washback in which learning-related, motivational,

strategic, and psychological experiences coexist, while their relationships with examination performance vary considerably.

Multidimensional Learner-Related Washback

The findings indicate that SHSMET-related washback was reflected across all four learner-related dimensions. Students retrospectively reported learning-related, motivational, strategic, and affective experiences associated with their previous SHSMET preparation, suggesting that washback extends beyond changes in study behaviour alone. This supports learner-centred conceptualisations in which students actively interpret and respond to assessment demands (Bailey, 1996; Green, 2007; Xie & Andrews, 2013; Tsang & Isaacs, 2022).

The coexistence of these dimensions also illustrates the difficulty of classifying washback as simply positive or negative. Learning engagement, motivation, and purposeful strategic preparation may represent potentially productive responses when they support sustained English learning. At the same time, preparation may become narrowly examination-oriented, while the reported level of test anxiety indicates that psychological pressure formed a noticeable part of students' examination-related experiences. This is consistent with the view that different forms of washback may coexist within the same assessment context and vary according to learner and contextual characteristics (Spratt, 2005; Green, 2020).

The high-stakes nature of the SHSMET provides an important context for this pattern. Because examination performance contributes to progression into senior high school, students have strong reasons to respond to its perceived requirements. However, the findings should be understood as students' retrospective accounts rather than direct observations of behaviour during SHSMET preparation. They therefore provide evidence of the multidimensional character of remembered examination-related experiences without establishing that the examination directly caused each reported response.

Learning, Strategic Preparation, and Motivation

Among the learner-related factors included in the structural model, student learning had the strongest relationship with SHSMET performance. This is worth noting because student learning in this study covers more than examination preparation alone. It includes students' perceptions of SHSMET and English learning (SLA), their English skill development and academic readiness (SLB), and their attitudes towards and engagement with English learning (SLC). The strength of this relationship points to the importance of students' wider learning experience, rather than any single aspect of preparation, in understanding differences in SHSMET performance.

A constructivist view offers one way of interpreting this pattern. Students build knowledge through continued engagement with learning and by connecting new experiences with what they already know (Piaget, 1950; Vygotsky, 1978). In the case of SHSMET, students who were more engaged in English learning, felt better prepared academically, and reported stronger development of their English skills were also more likely to report better examination performance. This pattern is broadly in line with earlier washback research showing that high-stakes language examinations are related to what students prioritise in their learning, how they prepare, and how actively they engage with the language (Hung & Huang, 2019; Xie, 2020; Dong et al., 2023).

At the same time, the strong relationship between student learning and performance does not tell us whether every change in learning associated with SHSMET preparation was educationally desirable. More intensive preparation may involve genuine improvement in English and stronger engagement with learning. It can also involve repeated practice of familiar task types or a greater concentration on content expected to appear in the examination. The questionnaire captures students' reported learning experiences, but it cannot determine the educational value of each activity they undertook. For this reason, the prominence of student learning in the model should not by itself be taken as evidence that the washback associated with SHSMET was entirely positive.

Test-taking strategies showed a different pattern. They were positively related to SHSMET performance, but their contribution was considerably smaller than that of student learning. Students who plan their approach, monitor their understanding, manage their time, and review their responses may be better able to deal with the demands of an examination. These behaviours fit well with the planning, monitoring, and evaluation processes described in Metacognitive Theory (Flavell, 1979; Schraw & Dennison, 1994) and with previous work on strategy use in language assessment (Anderson, 2002; Phakiti, 2003).

The difference between student learning and test-taking strategies is also informative. Knowing how to approach an examination can help students use their knowledge effectively, but it is unlikely to compensate fully for weaker underlying learning. The present results are consistent with this distinction: strategic preparation mattered, but the broader student-learning construct had a much stronger relationship with performance. There is also a need to distinguish between strategies that support learning and those that are useful mainly for a particular test. Planning, self-monitoring, and checking understanding may transfer to other learning situations, whereas memorising predicted answers or repeatedly practising highly familiar question types may have much narrower benefits. A positive relationship between strategy use and examination performance should therefore not be treated automatically as evidence of positive washback.

The relationship between motivation and SHSMET performance was positive, although relatively small once the other learner-related factors were considered. This does not make motivation unimportant. Students still need effort and persistence to maintain preparation over time, but being motivated does not necessarily translate directly into better examination results. What students do with that motivation—the extent to which they engage with English learning and use effective approaches to preparation—may also matter.

Self-Determination Theory is helpful here because students can invest substantial effort in learning for different reasons (Ryan & Deci, 2000, 2020). Some may value English or enjoy learning it, while others may be driven more strongly by examination results, admission to a preferred senior high school, or expectations from teachers and families. These reasons may also overlap. The present data cannot determine which type of motivation was more common, since the motivation measure assessed effort, persistence, and engagement rather than separate intrinsic and extrinsic motivational orientations. What can be said from the results is more limited: motivation was positively related to SHSMET performance, but its unique contribution was smaller than those of student learning and test-taking strategies.

Seen together, the three factors appear to play different roles. Motivation concerns students' willingness to invest effort, test-taking strategies concern how they organise and manage their preparation and performance, and student learning reflects their broader engagement with English and development as learners. In the present model, all three were positively related to SHSMET performance, but the much stronger relationship for student learning suggests that examination achievement was more closely connected with students' broader learning experience than with motivation or strategic preparation considered separately.

Test Anxiety as Psychological Washback

Test anxiety adds an important psychological dimension to the learner-related washback identified in this study. Participants reported a noticeable level of examination-related anxiety, and greater test anxiety was associated with lower SHSMET performance. This finding demonstrates that students' responses to high-stakes assessment cannot be understood solely through learning effort and strategic preparation.

The negative relationship with examination performance is consistent with Cognitive Test Anxiety Theory. Examination-related worry and task-irrelevant thoughts may compete for attentional and working-memory resources, interfering with concentration, information retrieval, and problem solving (Wine, 1980; Sarason,

1984). Broader empirical evidence similarly indicates a negative relationship between test anxiety and academic performance (von der Embse & Hasson, 2012; von der Embse et al., 2018).

The educational stakes surrounding the SHSMET may help explain why psychological experience is particularly relevant in this context. Performance contributes to students' subsequent educational opportunities, while expectations from students themselves, families, teachers, and schools may increase the perceived consequences of examination outcomes. Students may therefore engage intensively in preparation while simultaneously experiencing worry about performance and failure.

Nevertheless, the results do not demonstrate that SHSMET caused test anxiety. The descriptive findings indicate that anxiety formed part of students' retrospective examination-related experiences, while the structural results demonstrate an association between anxiety and performance. Given the cross-sectional and retrospective design, temporal direction cannot be established. Anxiety may interfere with examination performance, but students' memories of their anxiety may also be influenced by their subsequent interpretation of their examination outcomes. Longitudinal research measuring anxiety before and during SHSMET preparation would provide stronger evidence regarding these processes.

The findings nevertheless reinforce the importance of including psychological responses within learner-centred washback research. An assessment may be associated with productive learning and strategic preparation while simultaneously being experienced as psychologically demanding. Evaluating washback therefore requires consideration of students' emotional experience alongside observable learning behaviour.

Learner-Related Factors and Examination Performance

The structural analysis complements the descriptive washback findings by demonstrating that the four learner-related characteristics were differently associated with SHSMET performance. Broader student learning was most prominent, followed by strategic preparation, while motivation showed a smaller positive relationship and test anxiety a negative relationship. This pattern suggests that examination achievement is associated with a combination of learning-related, strategic, motivational, and affective characteristics rather than any single learner factor.

More importantly, these structural relationships should not be interpreted as measures of washback magnitude. The descriptive and structural analyses address related but distinct questions. The first concerns the extent to which different learner-related experiences were reflected in students' retrospective accounts of SHSMET; the second concerns how those learner characteristics were associated with examination performance. A stronger association with performance does not demonstrate that SHSMET produced a stronger effect on that particular construct.

This distinction also clarifies the role of the theoretical framework. Constructivist Learning Theory, Metacognitive Theory, Self-Determination Theory, and Cognitive Test Anxiety Theory provide complementary perspectives for interpreting different dimensions of learner experience; they are not four causal models directly tested by the PLS-SEM analysis. Together, they help explain why learning engagement, strategic regulation, motivation, and psychological responses may relate differently to achievement within a high-stakes assessment environment.

The findings therefore extend learner-centred washback research in two related ways. First, they demonstrate that SHSMET-related experiences encompass multiple dimensions that may carry different educational consequences. Second, they show that these dimensions are not equally associated with examination performance. This moves the discussion beyond asking whether an examination generates positive or negative washback towards a more differentiated consideration of what learners do in response to assessment, why they

engage, how they regulate their preparation, what psychological experiences accompany the process, and how these characteristics relate to achievement.

Overall, the findings support a multidimensional and context-sensitive understanding of learner-related washback. Learning, motivation, strategic behaviour, and anxiety form interconnected aspects of students' examination experiences, but their educational significance differs. The prominence of student learning underscores the importance of broader learning engagement and language development, while the contributions of strategic preparation and motivation highlight additional mechanisms associated with examination achievement. The negative relationship between test anxiety and performance further demonstrates that the psychological costs associated with high-stakes assessment should remain part of any comprehensive evaluation of washback.

IMPLICATIONS

Theoretical Implications

One contribution of this study lies in bringing several aspects of learner experience together within the discussion of washback. Much of the earlier work in this field examined what examinations did to teaching, curriculum, and classroom practice (Alderson & Wall, 1993; Bailey, 1996; Cheng & Watanabe, 2004; Green, 2007). Research has since paid greater attention to learners themselves and to the ways in which they respond to examination demands (Xie & Andrews, 2013; Xie, 2020; Tsang & Isaacs, 2022). The findings from the SHSMET context add to this line of research by showing that students' experiences were not limited to changes in how they studied English. Motivation, test-taking strategies, and anxiety were also part of what students reported about their examination experience. Considering these areas together gives learner-centred washback a broader basis than would be possible if each response were examined separately.

This broader view also makes the distinction between positive and negative washback less straightforward. The same examination context may be associated with responses that have quite different educational implications. More regular engagement with English and better-regulated preparation, for example, may support learning, while a strong focus on examination-specific activities may narrow what students choose to study. Anxiety adds another layer to this picture, since students can be highly engaged in preparation and still experience considerable psychological pressure. Rather than placing the SHSMET on one side of a positive–negative divide, the results are more consistent with earlier arguments that washback can take different forms at the same time and that its educational value depends on the nature of the response being considered (Spratt, 2005; Green, 2007, 2020).

A further point concerns the relationship between washback and examination performance. In this study, these were deliberately treated as related but separate issues. Students' reports of learning, motivation, test-taking strategies, and anxiety describe different aspects of their previous SHSMET experience. The structural model, on the other hand, examines whether those learner-related factors were associated with their reported examination scores. The distinction matters because a strong structural relationship does not necessarily mean that the examination produced a stronger washback effect on that factor. Equally, a response may be clearly present in students' examination experience without making a large unique contribution to performance. Keeping the two questions separate may help avoid treating path coefficients as direct measures of washback, particularly in cross-sectional studies such as this one.

The theoretical perspectives used in the study serve different purposes within this interpretation. Constructivist Learning Theory is most relevant to the way students engage with learning and develop their English knowledge and skills, whereas Metacognitive Theory helps explain how they plan, monitor, and regulate their preparation.

Self-Determination Theory offers a way to think about the different reasons students may invest effort in an important examination, although the motivation measure used here does not distinguish directly between intrinsic and extrinsic forms of motivation. Test anxiety requires a different perspective again: Cognitive Test Anxiety Theory helps explain why worry may interfere with the cognitive resources needed during examination performance. These theories are therefore not competing explanations, nor were they tested as four causal models in the PLS-SEM analysis. Their value here is in helping to interpret different parts of students' experience without assuming that learning, motivation, strategy use, and anxiety operate in exactly the same way.

There is also a methodological implication arising from the study. Washback research has benefited greatly from interviews, classroom observations, and other qualitative approaches because they can show how examination influence develops in particular educational settings. Quantitative modelling addresses a somewhat different question. In the present study, PLS-SEM made it possible to consider several learner-related factors within the same model and to examine how their relationships with SHSMET performance differed when the other factors were taken into account. It does not, however, establish how these relationships developed over time or the direction of causality. A useful next step would therefore be to combine structural modelling with longitudinal data, interviews or classroom observations, and verified examination records. Such work could provide a clearer picture of how learner-related washback develops before, during, and after a high-stakes examination.

Practical Implications

The practical value of these findings lies in how SHSMET preparation is approached by those involved in the examination process. Preparing students for an important entrance examination is clearly necessary, but preparation does not have to be reduced to repeated practice of test formats. The results suggest that attention should be given to what students are actually learning, how they organise their preparation, what keeps them engaged, and how they cope with the pressure surrounding the examination.

At the policy level, the strong relationship between student learning and SHSMET performance draws attention to the content and skills rewarded by the examination. If test tasks reflect meaningful language use and the abilities expected in the English curriculum, preparation for the examination can give students a reason to develop skills that remain useful after the test. The opposite may occur when tasks become highly predictable or can be handled mainly through repeated practice of particular question types. In such cases, students and teachers have a strong incentive to concentrate on examination technique. Test developers and education authorities may therefore need to consider not only whether SHSMET measures English achievement reliably, but also what kinds of learning its format is likely to encourage (Green, 2007, 2020; Yang, 2020; Xie, 2020; Bedeker, 2024).

In schools, this issue becomes a question of how examination preparation is incorporated into everyday English teaching. Students need to understand the structure of SHSMET and learn practical ways of managing time, approaching different tasks, and checking their work. The positive relationship between test-taking strategies and performance supports the value of such preparation. Yet these skills are most useful when they sit alongside continued development in reading, writing, listening, vocabulary, and other aspects of English, rather than becoming the main purpose of classroom instruction. Teachers can, for example, use examination tasks as part of regular teaching while still creating opportunities for communication, reflection, and language use that are not restricted to the test format.

Motivation presents a somewhat different challenge. An examination as consequential as SHSMET already gives students an obvious reason to study, but pressure to obtain a high score may not be enough to maintain meaningful engagement with English over time. Teachers can broaden the reasons students have for learning by setting manageable challenges, giving useful feedback, allowing appropriate choice in learning activities, and showing how English can be used outside the examination context (Ryan & Deci, 2020). These suggestions

should be interpreted cautiously. The present study measured effort, persistence, and engagement; it did not directly compare intrinsic and extrinsic motivation. The results therefore support attention to students' motivation, but they do not show that SHSMET produces any particular type of motivational orientation.

The findings on test anxiety raise a more immediate concern for schools. Anxiety formed a noticeable part of students' recalled SHSMET experience and was negatively related to examination performance. Academic preparation and psychological support should not, therefore, be treated as unrelated issues.

Some sources of worry may be reduced when students know what to expect, have sufficient opportunities to practise under realistic conditions, and receive feedback that helps them identify what they can improve. Teachers can also help students develop realistic study plans and time-management habits during the preparation period. For students whose anxiety becomes persistent or begins to interfere seriously with learning, access to appropriate school counselling or psychological support is important (von der Embse & Hasson, 2012; von der Embse et al., 2018).

Students themselves also have a role in how examination preparation develops. Intensive practice close to the examination may be useful for familiarisation, but the present results place greater emphasis on sustained learning.

Regular engagement with English, combined with appropriate test-taking strategies and realistic study goals, is likely to offer a more balanced form of preparation than relying mainly on short-term drilling. Parents can support this by paying attention to students' learning progress and emotional state as well as their scores. Expectations remain important in a high-stakes examination context, but constant comparison with peers or excessive emphasis on the consequences of failure may add pressure without necessarily improving learning.

For SHSMET preparation, then, the practical issue is not whether schools should prepare students for the examination—they inevitably will—but **what kind of preparation should be encouraged**. Familiarity with the test has a place, as do examination strategies and focused practice. At the same time, preparation should leave room for the development of English ability, continued engagement with learning, and appropriate support for students who experience examination anxiety. Approaching SHSMET in this way may make examination preparation more consistent with the wider purposes of English education rather than allowing the test itself to become the sole purpose of learning.

Limitations And Future Research

Several aspects of the research design need to be kept in mind when interpreting the results. One concerns the timing of data collection. The participants were Grade 10 and Grade 11 students who had taken the SHSMET one or two years before completing the questionnaire. They were therefore looking back on an earlier period of learning and examination preparation rather than reporting their experiences as they occurred. Their responses may have been shaped by later experiences in senior high school, as well as by how they subsequently viewed their SHSMET results. The findings should consequently be understood as students' retrospective accounts of washback rather than direct observations of their experiences during the preparation period.

The cross-sectional nature of the study places a related restriction on interpretation. The structural model identified relationships between student learning, motivation, test-taking strategies, test anxiety, and SHSMET performance, but the direction of these relationships cannot be established from data collected at a single point in time.

Better learning, for example, may be associated with higher examination performance, but the present analysis cannot show that it caused the higher score. Nor can the results establish that SHSMET itself produced the

reported differences in learning, motivation, strategy use, or anxiety. A longitudinal design would provide a stronger basis for examining these processes. Following students before, during, and after SHSMET preparation would make it possible to observe changes over time and relate them more directly to subsequent examination outcomes.

Another limitation concerns the measurement of SHSMET performance. Examination scores were reported by the students themselves rather than obtained from official records, and participants had to recall results received one or two years earlier.

Some degree of reporting or memory error is therefore possible. The use of self-reported scores made it possible to examine examination performance alongside the questionnaire measures, but verified scores would provide a more dependable outcome measure. Where access and ethical arrangements permit, later studies could anonymously match questionnaire responses with official examination records.

The reliance on questionnaire data also needs consideration. All four learner-related factors were measured through the same survey and from the same respondents. This approach made it possible to collect comparable information from a relatively large sample, but students' answers inevitably depended on their own perceptions and willingness or ability to report earlier experiences accurately.

The reliability and validity checks provided support for the measures, and potential common-method problems were considered during preliminary screening; neither procedure, however, removes the limitations associated with self-report data altogether. Interviews or learner diaries could add detail that a structured questionnaire cannot capture, while classroom observations and records of examination preparation could provide evidence from sources other than the students themselves.

The geographical and sampling boundaries of the study are equally important. Participants were recruited purposively from five urban districts of Chengdu because the study required students with relatively recent experience of the SHSMET.

This sampling strategy served that purpose, but it does not provide a probability-based sample from which findings can be statistically generalised to all students in Chengdu, Sichuan Province, or China. Students from rural districts and suburban counties were not represented, and examination environments elsewhere in China may differ from that of Chengdu. Research involving stratified or probability-based samples across urban and rural locations would make it possible to examine whether similar patterns are found in other settings.

There are also boundaries to what was included in the model. The study concentrated on student learning, motivation, test-taking strategies, and test anxiety because the main interest was learner-related washback. These four areas cover important aspects of students' experience, but they cannot represent every influence surrounding a high-stakes examination.

What teachers do in response to the test, the role of private tutoring, parental expectations, peer influence, school policies, curriculum decisions, and differences in educational resources may all shape how students experience SHSMET preparation. These factors were outside the scope of the present analysis. Including some of them in later research could help explain why learner responses differ across students, schools, or educational settings.

A final consideration concerns what can be learned from quantitative modelling alone. PLS-SEM was useful for examining several learner-related factors within the same model and comparing their relationships with SHSMET performance. It is less able to show how those relationships developed or why individual students responded to the examination in particular ways.

For instance, the present results show that test anxiety was part of students' reported SHSMET experience, but they cannot reveal which features of examination preparation students found most stressful or how teachers, parents, and school environments contributed to that anxiety. Combining quantitative analysis with interviews, observations, or longitudinal case studies would provide a fuller account of these processes.

These limitations define the boundaries within which the findings should be read rather than diminishing the value of the study. The results provide quantitative evidence from a specific group of students with direct experience of the SHSMET in Chengdu, while also identifying questions that cannot be answered by the present design. Research conducted in other regions, using verified examination records and following students across the preparation period, would help establish whether similar patterns appear elsewhere. Adding qualitative evidence and a wider range of contextual factors would also provide a better understanding of how learner-related washback develops and why its effects may differ across students and educational settings.

CONCLUSION

This study examined how students in Chengdu recalled their experiences of preparing for the SHSMET and considered four areas in particular: student learning, motivation, test-taking strategies, and test anxiety. The results show that the examination was associated with more than changes in students' study behaviour. Students also reported differences in how much effort they invested, how they approached examination preparation, and how anxious they felt about the test.

These experiences did not all point in the same direction. Preparing for the SHSMET was associated with greater engagement in learning and the use of examination strategies, but anxiety was also a noticeable part of students' experience. This makes it difficult to describe the washback of the examination as simply positive or negative. What may encourage students to study more seriously can, at the same time, place them under additional pressure or direct their attention more closely towards examination requirements.

The relationship with examination performance also differed across the four areas. Student learning had by far the strongest positive relationship with SHSMET performance, while test-taking strategies were positively related to scores to a lesser extent. Motivation was also positively associated with performance, although its unique contribution was relatively small. Higher test anxiety, on the other hand, was related to lower performance. These results give particular weight to students' broader learning experience. Knowing how to approach an examination and being willing to invest effort both matter, but neither appears to replace sustained engagement with English learning.

The study also makes clear that these relationships need to be interpreted with care. Students were asked to look back on an examination they had taken one or two years earlier, and their SHSMET scores were self-reported. The data were also collected at one point in time. The structural results can therefore show how the four learner-related factors were associated with examination performance, but they cannot establish that SHSMET caused changes in those factors or that the factors themselves caused particular examination results.

What emerges from the study is a picture of SHSMET preparation in which learning, strategy use, motivation, and anxiety exist alongside one another. For schools and teachers, the challenge is not to separate examination preparation from English learning, but to make the two work together as far as possible. Students need familiarity with the examination and effective ways of preparing for it, yet preparation should still contribute to the development of English ability and should not overlook the pressure that a high-stakes entrance examination can create.

The Chengdu findings add evidence from a secondary-school examination context that has received relatively little attention in washback research. They also point to a simple but important issue for future work: understanding an examination requires looking beyond the score itself. How students study for the test, what keeps them engaged, the strategies they develop, and the pressure they experience are all part of what the examination means in practice.

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