

## **A STUDY ON STUDENTS' LEARNING MOTIVATION ACROSS FORMATIVE ASSESSMENT TRAINING IN CHINA'S HIGHER VOCATIONAL COLLEGES**

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**ABSTRACT** The fast globalisation and the growing significance of English as a worldwide lingua franca have made English language ability a crucial competency in contemporary society. However, a notable disparity in English language proficiency has been observed among EFL students in China's higher vocational colleges. One of the significant reasons for this phenomenon is the wide use of summative assessment by EFL teachers in China's higher vocational colleges. Another factor contributing to this gap is students' low motivation to learn English. The formative assessment training program attempts to empower teachers and students in China's higher vocational colleges to improve students' learning motivation and English competence. The present study explores how intrinsic, extrinsic, and motivation interact with learning motivation among EFL students in China's higher vocational colleges across different phases (before, during, and after) of formative assessment training in China's higher vocational colleges. This study employs a quantitative research method; 250 EFL students from China's higher vocational colleges participated. Data was collected by questionnaires before, during, and after formative assessment training. Pls-seem was used to analyze related data. The results indicated a positive relationship between intrinsic, extrinsic, and learning motivation but a negative relationship between motivation and learning motivation before, during, and after formative assessment training among EFL students in China's higher vocational colleges. The present study's findings also suggested the fluidity of the relationships between intrinsic motivation, extrinsic motivation, motivation, and learning motivation across different training phases. The present study's findings not only enrich our understanding of student's motivation in the context of formative assessment but also provide deep insight into the effective implementation of formative assessment in China's higher vocational colleges and beyond.

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## **INTRODUCTION**

In the current educational and professional environment, English language skills have become crucial, extending beyond the classroom to influence career paths and socio-economic status, especially in China's higher education context. This is particularly true in China's Higher Vocational Colleges (HVCs), where a notable disparity in English language proficiency among students has been observed (Jiang & Hussain, 2023; Luo & Hussain, 2023).

The causes for this disparity are multifaceted, yet one of the most often cited ones is the traditional assessment method prevalent in many higher vocational colleges (HVCs) in China (Du & Guan, 2015; Niu, 2021; Zhang, 2023). Deeply influenced by traditional test-oriented culture and standard tests like College English Test Band4/6 (CET4/ CET6), many teachers in China's higher vocational colleges prioritise summative assessment instead of formative assessment in their teaching practices (Nunan et al., 2017). Compared with summative assessment, formative assessment emphasises students' learning process and practical feedback to promote learning. Formative assessment is advantageous because it is conducive to instructors' monitoring of student's progress and learning and contributes to helping students become autonomous learners. Despite the benefits of formative assessment, the implementation of formative assessment is undoubtedly a complex endeavour in higher education, especially in the context of China's higher vocational colleges (Liu & Xu, 2017; Irons et al., 2022).

Learning motivation is another crucial determinant factor contributing to the gap in students' English competence, as it significantly impacts learners' levels of engagement, tenacity, and eventual achievement in attaining competency in a novel linguistic system (Gunilla et al., 2021). Motivation also plays a significant role in students' active engagement and participation in class activities, directly impacting the effective integration of formative assessment strategies into their learning process, ultimately leading to favourable learning outcomes.

To conclude, the crucial need to improve students' English competence in China's higher vocational colleges necessitates students' active engagement and commitment to study. This strengthens the importance of enhancing students' learning motivation in the context of formative assessment training in China's higher vocational colleges.

## **PROBLEM STATEMENT**

The current study focuses on students in China's higher vocational colleges, motivated by the notable issues prevalent within this group of individuals and the existing body of research on the topic.

English proficiency has become a vital skill beyond academic success to influence career opportunities and global socio-economic development. However, in the context of China's higher vocational colleges, previous studies indicate a weakness in English competence among students and a lack of interest and confidence in communication (He, 2020; Li et al., 2020). This deficiency in English competence threatens their international job prospects and China's economic integration with the world (Niu, 2021; Zhang, 2023). Another problem lurking in China's higher vocational colleges is the prevalence of summative assessment among teachers. Although China's teaching reform appeals to transitioning from summative assessment to formative assessment to prioritise the learning process, summative assessment is still preferred

among EFL teachers in China's higher vocational colleges (Yuan, 2021). This phenomenon is partly due to the difficulty and complexity of implementing formative assessment in real classrooms, especially in the context of larger-size classrooms in China's higher vocational colleges (Jiang & Hussain, 2023; Liu & Xu, 2017). Besides, students' involvement significantly influences the effectiveness of formative assessment. However, students in China's higher vocational colleges are incredibly resilient in their English classrooms due to their poor language ability and low confidence (He, 2020).

In sum, the adoption of formative assessment has been suggested as a potential remedy for students' inadequate English competence and decreased motivation in learning. However, the effective implementation of formative assessment in teaching practice and enhancing students' learning motivation is still a complex challenge that needs further exploration (Ren, 2011). Moreover, despite the growing interest, the existing literature does not provide sufficient insights into the specific educational setting of China's higher vocational colleges, making it a pressing area for research.

Thus, the present study explores how different types of motivation relate to students' English learning motivation throughout the formative assessment training in China's higher vocational colleges. Given the research objectives, this study intends to address the following research questions:

RQ1: What is the relationship between intrinsic and learning motivation among EFL students before, during and after formative assessment training in China's higher vocational colleges?

RQ2: What is the relationship between extrinsic motivation and learning motivation among EFL students before, during and after formative assessment training in China's higher vocational colleges?

RQ3: What is the relationship between motivation and learning motivation among EFL students before, during, and after formative assessment training in China's higher vocational colleges?

Based on the research questions, the following hypotheses are examined in this study:

H1-1: Intrinsic motivation positively influences learning motivation among EFL students before formative assessment training in China's higher vocational colleges.

H1-2: Intrinsic motivation positively influences learning motivation among EFL students during formative assessment training in China's higher vocational colleges.

H1-3: Intrinsic motivation positively influences learning motivation among EFL students after formative assessment training in China's higher vocational colleges.

H2-1: Extrinsic motivation positively influences learning motivation among EFL students before formative assessment training in China's higher vocational colleges.

H2-2: Extrinsic motivation positively influences learning motivation among EFL students during formative assessment training in China's higher vocational colleges.

H2-3: Extrinsic motivation positively influences learning motivation among EFL students after formative assessment training in China's higher vocational colleges.

H3-1: A motivation negatively influences learning motivation among EFL students before formative assessment training in China's higher vocational colleges.

H3-2: A motivation negatively influences learning motivation among EFL students during formative assessment training in China's higher vocational colleges.

## **LITERATURE REVIEW**

### **Self-determination Theory of Motivation**

Motivation has long been recognised as crucial in education, particularly in learning English as a Foreign Language (EFL). It is the driving force that propels learners to engage, persist, and achieve in their language acquisition journey. The significance of motivation in EFL learning has been underscored by numerous studies, revealing its intricate relationship with learners' performance, attitudes, and overall proficiency (Ismail et al., 2022).

Self-determination theory distinguishes between two types of motivation: intrinsic motivation and extrinsic motivation. Intrinsic motivation emanates from within the learner. It is the innate desire to learn for learning, driven by interest, curiosity, or the inherent satisfaction derived from mastering a skill (Nikou & Economides, 2021; Hosseini et al., 2013). Intrinsic motivation can enhance the effectiveness of formative assessment training. When intrinsically motivated learners are more receptive to feedback, show greater resilience in the face of challenges, and are more likely to engage in self-assessment (Warden & Lin, 2000). Intrinsic motivation fosters deep learning, long-term retention, and positive attitudes towards the language. However, maintaining high levels of intrinsic motivation can be challenging, especially in environments where external pressures dominate (Ulfa & Bania, 2019).

Extrinsic motivation refers to the drive to perform a task or engage in an activity because of external rewards or to avoid negative consequences. In the EFL context, this could be the desire to obtain good grades, meet parental expectations, or fulfil a curriculum requirement (Tuan, 2012). Extrinsic motivators, such as grades or teacher feedback, can play a significant role in formative assessment training. When learners perceive these external rewards as valuable, they are more likely to engage actively in learning (Ismail et al., 2022). While extrinsic motivation can effectively initiate learner engagement, especially when intrinsic motivation is low, it may not sustain long-term interest and deep learning. Over-reliance on external rewards might diminish learners' inherent interest in language learning (Kassing, 2011).

Besides intrinsic and extrinsic motivation, motivation is also one of the most critical factors influencing one's successful learning of a foreign language. Motivation refers to the lack of motivation, both intrinsic and extrinsic. Motivated learners feel neither the internal drive nor the external pull to engage in the learning process (Gan, 2020). Motivation can hinder the effectiveness of formative assessment training. Motivated learners may not respond to feedback, may not desire to improve, and may even disengage from the learning process altogether (Kim et al., 2019). To combat motivation, teachers can employ strategies such as building supportive teacher-student relationships, offering choices in learning tasks, and fostering a sense of belonging and relevance in the classroom (Al-Sharief, 2013).

In conclusion, understanding the motivation, whether intrinsic, extrinsic, or lacking, is crucial for teachers in the EFL domain. By tailoring teaching strategies and assessment methods to cater to learners' motivational profiles, teachers can optimise language learning outcomes and foster a lifelong love for language acquisition.

### **The Importance of Motivation to Formative Assessment Training**

Motivation is crucial in formative assessment training for English as a Foreign Language (EFL) students, significantly impacting their learning experiences. Formative assessments provide continuous feedback, helping students recognise their strengths and improvement areas. When these assessments are combined with effective motivational strategies, they can significantly enhance learning outcomes, particularly for EFL students in vocational colleges (Hondrich et al., 2018; Weurlander et al., 2012).

The relationship between motivation and formative assessment is complex. Motivation drives students toward their academic goals, while formative assessments offer a structure for ongoing feedback and improvement. This combination of motivation and formative assessment creates a dynamic learning environment. Research shows that formative assessments positively affect students' intrinsic motivation, especially when they perceive these assessments as beneficial (Hondrich et al., 2018).

Practical strategies to boost motivation include providing personalised feedback, setting clear and achievable goals, and using engaging assessment methods like interactive quizzes or project-based evaluations (Bhagat et al., 2018; Wilson et al., 2011; Karay et al., 2012). Successful case studies from Asia, Europe, and South America demonstrate the positive outcomes of integrating motivational strategies in formative assessment training, improving student engagement and learning outcomes (Zheng, 2012; Al-Sharief, 2013). In summary, it is crucial to effectively integrate motivation into formative assessment training to enhance EFL students' learning experiences, making their educational journey more effective and enriching.

Despite the recognised potential benefits of formative assessment, the relationship between motivation and formative evaluation is still an area that warrants further investigation. This lack of research is a significant issue that needs to be addressed to facilitate the effective implementation of formative assessment practices in China. The need for more focused research is particularly pressing, given the increasing emphasis on teacher training and professional development programs. (Gan & Lam, 2020; Jin, 2017; Yan & Fan, 2021).

### **Formative Assessment Training in China's Higher Vocational Colleges**

Formative assessment in China is extensively promoted by the educational governments and institutions in China with the issue of many guiding documents such as *English Curriculum Standards for Higher Vocational Education (2021 Edition)* (Ministry of Education of China, 2021) and "General Plan for Deepening the Reform of Educational Evaluation in the New Era" (CPC Central Committee and State Council of China, 2020)

The formative assessment training program is an attempt in response to the government's call for elevation reform at all educational levels in China. Online learning communities focus on various teacher training programs developed quickly since the pandemic era, which teachers in China welcome because of the accessibility of experts in different fields, shared resources, and successful experience in teaching and learning (Li et al., 2021). The formative assessment training program in China's higher vocational colleges was one of these initiatives aiming to improve EFL teachers' assessment literacy and teaching effect.

The present study was based on a one-academic-year formative assessment training program in China's higher vocational colleges from July 2022 to July 2023. The training program is in a phase structure. Firstly, EFL teachers joined the online learning community of formative assessment training and systematically studied professional knowledge of formative assessment. Secondly, EFL teachers implement formative assessment in their teaching practice. Thirdly, EFL teachers collect students' learning outcomes and reflect on their experiences of productive assessment practice.

## **METHODOLOGY**

This research examines how intrinsic, extrinsic, and extrinsic motivation influence students' motivation to learn English among EFL students in China's higher vocational colleges across formative assessment training. The study uses a quantitative approach, ideal for analysing relationships between variables and collecting numerical data (Creswell & Creswell, 2017; Haig, 2018). Questionnaires are the primary tool for data collection, chosen for their efficiency in gathering large amounts of uniform data. This method helps understand the attitudes and beliefs of a broad participant base, making the findings more generalisable (Rahman, 2016). The study explicitly targets students in English as a Foreign Language (EFL) classes in Chinese higher vocational colleges, using purposive sampling to ensure relevant and insightful data (Taherdoost, 2018).

### **Research Design**

This research employs a causal research design to understand student motivation in English language learning in China's higher vocational colleges. This design, also known as explanatory research, is chosen to clarify cause-and-effect relationships between variables, such as the impact of intrinsic, extrinsic, and motivation on learning motivation among English as a Foreign Language (EFL) students. The study uses field experiments and questionnaires to manipulate and observe the effects of various independent variables on a dependent variable, thereby establishing robust evidence for academic and practical applications.

### **Population and Sampling**

The population in this study refers to EFL students in China's higher vocational colleges who received formative assessment training. Due to practical constraints, students of EFL teachers in China's higher vocational colleges attending the online learning community of productive assessment training were selected as representative sample for this study. The sampling technique and sample size are vital for ensuring the study's credibility and reliability. Different sampling methods, like random or purposive sampling, have advantages and are chosen based on the study's goals and context. The sample size needs to be large enough to provide reliable results but not so large that it wastes resources or overemphasises minor effects. This study's minimum sample size of 124 respondents is sufficient to achieve reliable results using advanced statistical methods like structural equation modelling. This approach ensures that the study's findings are scientifically rigorous and practically relevant to the educational field.

## **Instrumentation**

The instrument used in the present study is three questionnaires distributed to the selected respondents before the formative assessment training, during productive assessment training, and after practical assessment training. The questionnaires were modified from Deci et al. (1991), Jackson-Kersey & Spray (2016), Ryan & Deci (2020), and Vallerand et al. (1992) and were translated into Chinese. Each questionnaire consists of 20 items with a five-point Likert scale, ranging from “strongly disagree” to “strongly agree”.

## **Data Collection**

The data collection for this research is a carefully planned and multifaceted process. It begins with creating a detailed questionnaire tailored to capture students' perspectives in China's higher vocational colleges. This questionnaire is rigorously pre-tested to ensure its effectiveness and relevance to the study's goals. Considering the budget challenges and the post-pandemic context, the study adopts a hybrid data collection method, combining online distribution with in-person collection through enumerators in selected colleges. This strategy is chosen to counter the low response rates often seen with purely online methods in China. The questionnaires are distributed to a strategically selected sample of 250 respondents, a size determined to provide comprehensive and insightful data. This thorough approach to data collection is designed to align with the study's objectives, adhere to ethical standards, and manage practical constraints, demonstrating a solid commitment to academic rigour and integrity.

## **Data Analysis**

Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed in this study because of its capability to dissect intricate relationships among variables and constructs, providing a holistic framework for confirmatory and exploratory inquiries. This research's data analysis and interpretation section outlines a comprehensive statistical approach to validate constructs and test hypotheses. The initial phase of data analysis is devoted to a meticulous examination of the reliability and validity of the constructs, which is essential to evaluate the statistical model's fit with the data. The reliability and validity of the model were tested by Cronbach's Alpha, rho\_A, and Composite Reliability. Depending on the data and research questions, various statistical tests represented by path coefficients (Beta), one-tailed T statistics, and P values are also used in hypothesis testing. This structured methodology aims to provide valid, meaningful insights, contributing to scholarly discourse.

## **RESULTS**

### **Reliability and validity**

The measurement of the model in this research is a crucial, multi-step process that ensures the study's empirical rigour and credibility. This phase goes beyond simple statistical calculations, focusing on the conceptual integrity of the research. It includes convergent and discriminant validity tests, essential for confirming that related constructs are correlated and distinct constructs are independent, per theoretical expectations. The process also involves reliability tests to ensure the stability and consistency of the measurement model. This thorough

approach is not just a procedural necessity but a fundamental aspect that substantiates the methodological choices of the study. It ensures that the theoretical model is grounded in solid theories and accurately measures the intended constructs. This rigorous validation process enhances the credibility of the study's findings and contributes significantly to the academic discourse in the field.

Within the particular framework of this research, the model has exhibited remarkable levels of dependability and validity through the tests of Cronbach's Alpha, Rho\_A, and Composite Reliability. As shown in Table 1, Cronbach's Alpha coefficients for the constructs of this study were found to be above the predetermined threshold value of 0.6, with values ranging from 0.856 to 0.885. Likewise, the Rho\_A values for these constructs had values that exceeded the predetermined thresholds of 0.7, with a range of 0.856 to 0.885. The Composite Reliability value for the constructs of this study exceeded the threshold value of 0.7, ranging from 0.896 to 0.912. The indicators mentioned above jointly validate the model's reliability, providing evidence supporting its appropriateness for this research.

**Table 1.** Reliability and Validity

	<b>Cronbach's Alpha</b>	<b>Rho_A</b>	<b>Composite Reliability</b>
Intrinsic motivation	0.878	0.885	0.911
Extrinsic motivation	0.855	0.856	0.896
A motivation	0.880	0.880	0.912
Learning Motivation	0.857	0.864	0.897

### **Hypothesis Testing**

The present study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to analyse the complex relationship between intrinsic motivation, extrinsic motivation, motivation, and learning motivation among EFL students in China's higher vocational colleges throughout formative assessment training. The SmartPLS algorithm is instrumental in this analytical process. It performs dual functions: calculating the path coefficients and generating t-statistics for each relationship through its bootstrapping algorithm. These coefficients offer more than just numerical values; they provide empirical validation for the theoretical constructs that form the foundation of the study. Each path in the structural model symbolises a hypothesis, and the corresponding path coefficient quantifies the nature and strength of the relationship between the variables involved (Guenther et al., 2023). These t-statistics act as the benchmark for evaluating each path coefficient's statistical significance, adding methodological rigour to the analysis. This ensures that the study's findings are statistically sound and theoretically significant (Manley et al., 2020). The study employs a predetermined threshold to assess each relationship's significance, setting the statistical significance level at 0.05, consistent with academic norms.

H1-1 explored the relationship between intrinsic motivation and learning motivation before formative assessment. As shown in Table 2, the beta value, indicative of the strength and direction of the relationship, was found to be 0.184. This suggests a moderately positive relationship between the two constructs. The T value, which tests the significance of this



relationship, was 3.303, surpassing the standard threshold of 1.96 for a 95% confidence level. The P value was also 0, reinforcing that the relationship is statistically significant. Given this evidence, the hypothesis H1-1 is supported.

H2-1 postulated a relationship between extrinsic motivation and learning motivation before formative assessment. As shown in Table 2, the beta value for this relationship was 0.221, indicating a moderately positive association. The T value, at 3.197, again confirms the significance of this relationship with a P value of 0.01. As such, hypothesis H1-2 is supported, indicating a positive relationship between extrinsic motivation, and learning motivation before formative assessment training.

H3-1 tested the relationship between motivation and learning motivation before formative assessment. As shown in Table 2, the beta value is 0.265, suggesting a positive relationship between these two constructs. The T value of 3.818 confirms the significance of this relationship with a P value of 0. There is solid statistical evidence in support of this relationship. Hence, the hypothesis H3-1 is supported.

**Table 2.** Summary of Hypotheses Testing (Before Formative Assessment)

Hypothesis	Relationship	Beta	T value	P Values	Supported
Before formative assessment training					
H1-1	Intrinsic motivation -> Learning Motivation	0.184	3.303	0.000	YES
H2-1	Extrinsic Motivation -> Learning Motivation	0.221	3.197	0.001	YES
H3-1	A motivation -> Learning Motivation	0.265	3.818	0.000	YES

**Note:**  $p < 0.05$  (1-tailed)

H1-2 assessed the relationship between intrinsic and learning motivation during the formative assessment training. As shown in Table 3, the Beta value for H1-2 is 0.246, indicating a moderately positive relationship between the two constructs. The relationship is solidified with a T value of 4.566 and a P value of 0. Thus, H1-2 is supported, which denotes a positive relationship between intrinsic and extrinsic motivation during the formative assessment training.

H2-2 explored the relationship between extrinsic motivation and learning motivation during formative assessment. As shown in Table 3, the Beta value for H2-2 is 0.117, indicating a weak positive relationship between these two constructs. Although the T value of 1.797 is below the standard threshold of 1.96, the Beta value of 0.117 and P value of 0.036 meet the 95% confidence level threshold for significance. Given this, the hypothesis H2-2 is supported.

H3-2 examined the relationship between motivation and learning motivation during the formative assessment training. Here, the beta value was 0.271, denoting a positive relationship. The T value of 4.651 signifies the importance of this relationship, and a P value of 0 solidifies its statistical significance. Thus, the hypothesis H3-2 is supported.

**Table 3.** Summary of Hypotheses Testing (During Formative Assessment)

Hypothesis	Relationship	Beta	T value	P Values	Supported
During formative assessment training					
H1-2	Intrinsic motivation -> Learning Motivation	0.246	4.566	0.000	YES
H2-2	Extrinsic Motivation -> Learning Motivation	0.117	1.797	0.036	YES
H3-2	A motivation -> Learning Motivation	0.271	4.651	0.000	YES

Note:  $p < 0.05$  (1-tailed)

H1-3 investigated the relationship between intrinsic motivation and learning motivation after formative assessment. As shown in Table 4, the beta value stands at 0.136, indicating a weak positive relationship. However, the relationship is statistically significant, with a T value of 2.41 and a P value of 0.008. Therefore, the hypothesis1-3 is supported. A rise in intrinsic motivation can lead to a minor increase in learning motivation after formative assessment.

H2-3 examines the relationship between extrinsic motivation and learning motivation. As shown in Table 4, the beta value for this relationship is 0.187, indicating a weak to moderate positive relationship. The t-value of 2.987 and a p-value of 0.001 suggest that this relationship is statistically significant. The hypothesis is thus supported. As extrinsic motivation increases, a slight increase in learning motivation is likely.

H3-3 explored the relationship between motivation and learning motivation after formative assessment training. As shown in Table 4, a moderate positive relationship exists with a beta value of 0.281. A T value of 4.545 signifies that this relationship is statistically significant, and the p-value of 0 reaffirms this significance. Thus, H3-3 is supported, implying that an increase in motivation can lead to a corresponding decrease in learning motivation.

**Table 4.** Summary of Hypotheses Testing for Q2

Hypothesis	Relationship	Beta	T value	P Values	Supported
After formative assessment training					
H1-3	Intrinsic motivation-> Learning Motivation	0.136	2.410	0.008	YES
H2-3	Extrinsic Motivation -> Learning Motivation	0.187	2.987	0.001	YES
H3-3	A motivation -> Learning Motivation	0.281	4.545	0.000	YES

Note:  $p < 0.05$  (1-tailed)

## **DISCUSSION**

This study explores the relationship between intrinsic motivation, extrinsic motivation, motivation, and learning motivation among EFL students in China's vocational colleges throughout different phases of formative assessment training. The results of PLS-SEM indicate that all three types of motivation—intrinsic motivation, extrinsic motivation and motivation—have a significant relationship with learning motivation across all phases of the assessment. This finding provides theoretical and practical insight into the effective implementation of formative assessment in China's higher vocational colleges and beyond.

Firstly, the result of the study suggested that intrinsic motivation significantly impacts learning motivation across different phases of formative assessment training in China's higher vocational colleges. This finding resonates with Peng and Fu (2021), who emphasise that genuine interest in learning the language can lead to better outcomes than external rewards or pressures. This aligns with the findings of Liu and Hou (2018), who indicated that intrinsic motivation significantly enhances academic achievement. In the specific context of EFL learning, the role of inherent motivation becomes even more pronounced. Shin (2018) found that when combined with feedback, intrinsic motivation positively predicted students' confidence in their purpose. This suggests that students who are intrinsically motivated and receive constructive feedback in formative assessment training are more likely to be confident in their learning journey, leading to better outcomes. In a word, intrinsic motivation is crucial in influencing learning motivation in EFL contexts. Given its significance, teachers, curriculum designers, and policymakers must prioritise fostering inherent motivation, ensuring a conducive and effective learning environment for EFL students, especially in the context of formative assessment in China's higher vocational colleges.

Secondly, the findings of this study affirm the positive relationship between extrinsic motivation and learning motivation among EFL students in China's higher vocational colleges across different phases of formative assessment training. This finding is pivotal, suggesting that while fostering intrinsic motivation is essential, there is a tangible benefit in addressing and leveraging extrinsic motivators, especially during specific training phases. Extrinsic motivation, driven by external factors such as rewards or recognition, also significantly influences students' success in foreign language learning (Peng & Fu, 2021). This is evident in the findings of Ulfa and Bania (2019), who noted that teachers, as a component of extrinsic motivation, significantly impact students' learning of English. Building on these insights, it is suggested that EFL programs could benefit from incorporating strategies that recognise and utilise extrinsic motivators, such as teacher feedback and classroom rewards, to enhance student motivation. This approach could be efficient in phases where intrinsic motivation might be challenging to foster (Amiryousefi & Geld, 2021). Additionally, other research demonstrated that teachers' motivational practices are linked to increased levels of motivated learning behaviour and motivational state in learners, further emphasising the role of extrinsic factors in language learning motivation (Guilloteaux & Dörnyei, 2008). In summary, while intrinsic motivations are central to fostering genuine interest and engagement, the role of extrinsic motivators in shaping EFL student learning motivation across different training phases is significant. For teachers, curriculum designers, and policymakers, this indicates the need for a

balanced and strategic approach to motivation in EFL contexts, ensuring a holistic and practical learning environment for students.

Thirdly, the hypothesis results indicate that motivation negatively influences EFL student learning motivation at various stages of the formative assessment training. This finding is consistent across the three (before, during, and after) phases of productive assessment training, underscoring the pervasive impact of motivation on learning outcomes in EFL contexts. Before practical assessment training, students often harbour preconceived notions or apprehensions about their learning of English. These initial attitudes can significantly influence their motivation levels. Granero-Gallegos et al. (2019) emphasise that students with higher self-determined motivation are less likely to engage in low-engagement behaviours, suggesting that initial motivation levels can set the tone for the entire learning experience. Therefore, teachers must identify and address any signs of motivation early on, ensuring that students begin the training with a positive and engaged mindset. Likewise, unique challenges and complexities that can impact student motivation are present during formative assessment training. For example, Sianipar (2020) found that factors such as expected learning outcomes and peer learning play a critical role in students' metacognitive strategy use in EFL learning, suggesting that these elements should be carefully considered and integrated into the training program to maintain or enhance motivation. After the training, students' reflections on their performance and learning outcomes can reinforce or lead to increased motivation. Wang et al. (2017) emphasise the positive impact of engaging and authentic learning activities on EFL learners, suggesting that post-training activities should be designed to reinforce the positive aspects of the learning experience and address any areas of concern that could lead to motivation. To effectively manage motivation across these phases, teachers must adopt a holistic approach that considers students' psychological needs, learning environment, and personal perceptions. Additionally, continuous assessment and feedback mechanisms are crucial in identifying and addressing any signs of motivation as they arise in the context of formative assessment training.

Lastly, the study's results suggested that although intrinsic, extrinsic, and motivation are essential factors influencing students' English learning motivation across phases of formative assessment training, their relationships are dynamic rather than static across different stages of training. This finding challenges the static view of motivation and suggests that a more nuanced understanding of motivation is required. For instance, the role of extrinsic motivation, often viewed as less desirable than intrinsic motivation, appears to be more complex and context-dependent (Ryan & Deci, 2020). The study's findings imply that extrinsic factors, such as grades or future job prospects, might significantly motivate EFL students, especially in vocational college settings where practical outcomes are highly valued.

In conclusion, the results prove the complex connections between various forms of motivation and the drive to learn English at different stages of a formative assessment training program. Considering these links, educators and policy-makers must consider motivational factors while developing and executing constructive assessment initiatives. This study can provide a basis for future research and educational strategies to improve the motivation to learn among English as a Foreign Language (EFL) students in China's higher vocational colleges and beyond.

## **CONCLUSION AND IMPLICATIONS**

This research offers an in-depth look at how intrinsic, extrinsic, and learning motivations interact among EFL students in China's higher vocational colleges across different phases of formative assessment training. A significant discovery of this study is the positive impact of intrinsic and extrinsic motivation on students' English learning motivation throughout different phases of formative assessment training. This finding aligns with previous literature's findings (Karimi & Sotoodeh, 2020), indicating the need to activate and sustain students' learning motivation with motivational strategies. Additionally, the study highlights the importance of preventing demotivation throughout formative assessment training. In short, the present study's findings deepen our understanding of how these elements combine and influence learning outcomes, emphasising the diverse nature of motivation in educational settings, especially in the context of formative assessment training in China's higher vocational colleges.

The present study has both theoretical and practical implications. Theoretically, it reinforces literature on the role of intrinsic, extrinsic, and motivation in influencing learning motivation in different educational contexts. Besides, it provides empirical evidence and expands the application of motivational theory to the context of formative assessment training in China's higher vocational colleges. Practically, the present study provides deep insight for EFL teachers to design effective EFL curricula catering to diverse student needs and encourage students' personalised learning experiences by understanding different motivation types in formative assessment training. Overall, this study enriches our understanding of the dynamics of motivation and underscores the complexity of motivational factors in EFL learning.

The present study has two notable limitations, which need to be addressed by future research. A significant limitation of this study is its heavy reliance on quantitative data from questionnaires, which capture a limited range of human experiences and emotions. This is particularly relevant in studying motivation and learning, where the predictive power of self-report questionnaires may not be entirely adequate (Kikas & Jõgi, 2016). The study's focus on higher vocational colleges in China limits its applicability. The unique aspects of vocational education in China mean that the findings may not fully apply to other educational contexts, both within and outside China. This focus suggests that while the study offers valuable insights into the vocational college setting, its findings should be cautiously applied to other educational environments.

As a result, future research may take longitudinal studies to explore the long-term effects of formative assessment on EFL students' motivation and achievement (Aboulsoud, 2011; Baleghizadeh & Masoun, 2014). Besides, future research may delve into how different motivational types are affected by various formative assessment practices in other educational contexts both in China and outside China.

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