Article

A Study on Innovative Models for Cultivating English Majors in the Guangdong-Hong Kong-Macao Greater Bay Area under the Digital Economy Context

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Abstract: In the context of rapid digital economic development, the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) faces increasing demands for interdisciplinary and application-oriented English talent. Traditional English major training models — centered solely on linguistic knowledge — are no longer sufficient to meet the evolving needs of the digital labor market. This study investigates the current status, challenges, and optimization pathways of English major talent cultivation in the GBA, with a focus on aligning educational outcomes with the demands of the digital economy. Employing a mixed-method approach that combines questionnaire surveys with literature review and comparative analysis, the research gathered responses from 920 participants, including students, educators, and industry professionals. Findings reveal significant gaps in digital literacy, industry-specific language application, and practical training. Based on the analysis, the paper proposes an innovative talent cultivation model featuring diversified curriculum design, enhanced industry-education integration, and pedagogical innovation. Furthermore, it puts forward comprehensive policy recommendations and institutional reform strategies to support systemic transformation. This study not only offers theoretical guidance for curriculum and policy development but also provides practical implications for building a forward-looking and industry-responsive English education system in the GBA.

Keywords: digital economy; English major talent cultivation; Greater Bay Area; curriculum innovation; industry-education integration

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1. Introduction

In the era of rapid digital economy development, the Guangdong-Hong Kong-Macao Greater Bay Area (GBA) stands as one of China's most dynamic economic regions, presenting unprecedented opportunities and challenges. The digital economy not only reshapes traditional industrial structures but also accelerates changes in workforce requirements, thereby imposing new demands on higher education talent cultivation models. Particularly in the training of English majors, adapting to digital transformation and enhancing students' cross-cultural communication skills and digital literacy have become pressing issues.

The GBA holds a significant position in the national digital economy strategy. According to the "Guangdong-Hong Kong-Macao Greater Bay Area Digital Economy Development Report 2023" released by PwC, the region has become a major growth pole of China's digital economy, with digital economic output exceeding one trillion Yuan, accounting for a significant proportion of the national digital economy, demonstrating its leading position and influence in the field [1]. Furthermore, the GBA has made remarkable

progress in digital infrastructure construction, providing a solid foundation for the development of the digital economy [2].

Against this backdrop, exploring new pathways for cultivating English majors in the digital economy environment demonstrates vital practical implications. By innovating educational models and integrating digital technology with English teaching, we can't only enhance students' comprehensive qualities but also provide strong language support for international cooperation and cross-disciplinary communication in the GBA's technological development.

Therefore, this study aims to thoroughly analyze the current situation and challenges of English major talent cultivation in the GBA under the digital economy context, and to explore innovative training models, with the goal of offering theoretical support and practical guidance — through English education enhancement — for regional economic development and higher education reform.

2. Overview of the Digital Economy and the Development of the GBA

2.1. The Concept and Characteristics of the Digital Economy

The digital economy refers to a new economic form in which digital knowledge and information serve as key production factors, modern information networks function as the primary carriers, and the deep integration and innovative application of digital technologies act as the driving force [3]. It is characterized by high data dependence, a high degree of intelligence, strong networked collaboration, and deep integration with the real economy.

With the widespread application of cutting-edge technologies such as artificial intelligence, big data, cloud computing, and blockchain, the digital economy has become a major engine driving the new wave of global industrial transformation and economic growth [4]. As outlined in the national "14th Five-Year Plan for the Development of the Digital Economy", the digital economy is pivotal in building a modernized economic system and promoting high-quality development [5]. The digital economy is evolving rapidly — from consumer-centered applications to industrial integration, and from technology-driven growth to a system supported by institutional mechanisms — reshaping economic structures and influencing how higher education cultivates digital-ready and interdisciplinary talent.

2.2. The Strategic Role of the GBA in the Digital Economy

The GBA is one of China's most economically dynamic regions and is widely recognized for its contributions to the development of the digital economy. Recent data indicate that the GBA's digital economy exceeded 10 trillion yuan in 2023, reflecting its rapid growth [6]. The region features a high degree of digital industry clustering and notable intercity synergy, forming a robust digital industrial chain and innovation ecosystem driven by the core cities of Guangzhou, Shenzhen, Hong Kong, and Macao.

Shenzhen has developed strong capabilities in areas such as artificial intelligence, 5G communication, and smart manufacturing; Guangzhou is advancing digital trade and smart education; Hong Kong excels in fintech and cross-border data services; and Macao is focusing on the development of digital tourism and digital education [7-10]. This diversified and collaborative development model provides ample opportunities for high-level digital talent cultivation, which in turn places new demands on the higher education system in the region.

2.3. Emerging Demands for English Majors in the Digital Era

In the context of rapid digital economy development, the traditional training model for English majors — focused mainly on language proficiency — is no longer sufficient. There is an urgent need for interdisciplinary and application-oriented professionals who

can thrive in a digitally transformed and globally connected environment. As a result, the skill set required of English majors has significantly evolved:

1) Digital Literacy: Students must acquire proficiency in digital tools, information platforms, and basic data management, along with cybersecurity awareness and the ability to critically evaluate digital content.
2) Intercultural Communication Competence: The ability to communicate effectively in multilingual and multicultural settings is essential for international cooperation and cross-border services.
3) Industry-Specific Language Application: English majors should be able to understand the basic concepts and operational frameworks of emerging industries such as digital trade, smart manufacturing, and financial technology, and apply language skills in professional scenarios with precision and accuracy.
4) Critical and Innovative Thinking: As digital communication becomes more complex and dynamic, students must develop critical thinking abilities and the capacity for innovative expression.

To meet these new expectations, English programs in universities across the Greater Bay Area must transform from a "language + literature" model to an integrated "language + technology + industry" model. This shift will allow institutions to cultivate adaptable, digitally capable, and globally minded professionals prepared to contribute to the region's ongoing digital transformation.

3. Current Status of English Major Talent Cultivation in the GBA

3.1. Research Design

3.1.1. Research Objectives

This study aims to examine the adaptability, existing challenges, and optimization pathways of English major talent cultivation in the Guangdong-Hong Kong-Macao Greater Bay Area under the backdrop of the digital economy. It provides a systematic analysis of the current operation of talent training systems in terms of curriculum design, competency structure, and resource support, with the goal of offering both theoretical guidance and practical reference for building a regional model of English education that meets the demands of the digital economy era.

3.1.2. Research Methods

The study primarily adopts a questionnaire survey method, supplemented by literature review and comparative analysis. By collecting first-hand data from diverse groups — higher education institutions, employers, and students across the GBA — the study analyzes the alignment and gaps between existing training models and the requirements of digital economic development.

3.1.3. Respondents and Sample Composition

A total of 920 valid responses were collected (see Table 1). The sample includes current English major students (20%), graduates (20.54%), corporate recruiters (20.54%), university teachers and education practitioners (21.52%), and other related stakeholders (17.39%). In terms of geographical distribution (see Table 2), the majority of respondents are from Guangdong Province (61.96%), followed by Hong Kong (20.11%) and Macao (17.93%), making the sample generally representative and regionally relevant.

Table 1. Composition of Survey Respondents (n = 920).

Category	Number of Respondents	Percentage (%)
Current English Major Students	184	20.00%
English Major Graduates	189	20.54%

Corporate Recruiters	189	20.54%
University Teachers / Education Practitioners	198	21.52%
Others	160	17.39%
Total	920	100.00%

Table 2. Geographic Distribution of Survey Respondents (n = 920).

Region	Number of Respondents	Percentage (%)
Guangdong	570	61.96%
Hong Kong	185	20.11%
Macao	165	17.93%
Total	920	100.00%

3.1.4. Questionnaire Structure

The questionnaire is designed around five core dimensions:

1) The current status and shortcomings of English major students' competencies.
2) New skill requirements under the digital economy.
3) Construction of innovative training models.
4) Practical feasibility of university-society cooperation mechanisms.
5) Priority assessment of proposed educational improvements.

Each dimension is measured using a five-point Likert scale, ensuring the quantifiability and analytical reliability of the data collected.

3.2. Analysis of Current Situation of English Major Talent Cultivation in the GBA

With the rapid development of the digital economy, the GBA is witnessing an urgent demand for highly qualified, interdisciplinary, and internationally minded English professionals. Based on a questionnaire survey of 920 respondents across students, educators, and industry professionals, this study analyzes the current state of English major talent cultivation in the GBA and identifies major challenges across five key dimensions: competence structure, curriculum design, practical training, faculty development, and regional collaboration.

3.2.1. Misalignment between Talent Competencies and Market Demands

The survey results show that approximately 70.87% of respondents agree that English major graduates in the GBA possess adequate language proficiency to meet basic communication needs in the digital economy. However, when it comes to interdisciplinary and applied competencies, significant gaps emerge. Specifically, 49.46% of respondents point out that graduates lack digital skills such as data analysis and proficiency in digital tools. Another 50.79% believe that intercultural communication skills need to be further strengthened, while 53.8% note a deficiency in practical abilities related to science, technology, and international cooperation. This indicates a structural mismatch between the traditional competence profile of English majors and the multifaceted demands of the modern digital workplace, where language proficiency alone is no longer sufficient.

3.2.2. Outdated Curriculum Design and Slow Content Upgrades

A robust and forward-looking curriculum is fundamental to talent cultivation. Survey data reveal that 67.83% of respondents advocate for the addition of digital economy-related courses such as data analytics and digital marketing, while 71.31% stress the need to optimize the overall curriculum framework to enhance students' employability in digital contexts. Despite these demands, many universities in the GBA still offer traditional language-focused curricula that emphasize literature, linguistics, and translation theory.

Such curricula often lack cross-disciplinary content and technical depth. For example, traditional translation courses rarely integrate AI-assisted translation tools or corpus linguistics, and business English courses seldom address topics like cross-border e-commerce or digital branding. The inertia in curriculum innovation thus hinders the development of students' interdisciplinary capabilities.

3.2.3. Inadequate Practical Training and Weak University-Enterprise Collaboration

In the digital era, English professionals are expected to not only communicate effectively but also engage in problem-solving and project-based tasks. Therefore, practical training and university-enterprise collaboration have become essential components of modern language education. While 64.28% of respondents affirm the importance of industry collaboration in practical training, only 16.85% believe that current internship and practicum opportunities are fully adequate. This discrepancy highlights the lack of well-structured, industry-relevant training platforms in many institutions. Most internships are short-term, loosely organized, and disconnected from academic content, thus failing to offer meaningful experiential learning. Moreover, innovative models such as project-based learning, corporate mentorship, and competition-based training have yet to be widely adopted. Students often lack opportunities to engage in real-world tasks, weakening their ability to transfer classroom knowledge into workplace competence.

3.2.4. Insufficient Faculty Readiness and Digital Competency

Faculty members play a pivotal role in curriculum reform and teaching innovation. Although the questionnaire did not include a dedicated section on faculty, indirect responses provide insight into existing challenges. For example, only 49.78% of respondents supported faculty-led engagement in digital economy-related research, suggesting a lack of proactive involvement in cutting-edge areas. The root causes may include limited faculty background in digital industries, insufficient training in educational technology, and a lack of interdisciplinary teaching experience. As a result, many instructors struggle to integrate digital tools, design cross-sector curricula, or facilitate innovation-focused classroom activities. Without systematic professional development and institutional support, faculty capability becomes a bottleneck for talent transformation.

3.2.5. Underdeveloped Regional Coordination and Resource Integration

As a national strategic region, the GBA is expected to lead in educational innovation through cross-border collaboration and resource sharing. However, current mechanisms for regional synergy are still immature. Although 61.96% of survey participants are from Guangdong, feedback from Hong Kong and Macao highlights issues of limited interregional cooperation and fragmented policy alignment. For instance, joint curriculum development, faculty exchanges, and shared training platforms among GBA institutions are not yet institutionalized. Structural barriers such as differing education systems, administrative procedures, and cultural expectations hinder deeper integration. Furthermore, the disconnect between education policy and industry needs prevents the formation of a "university–enterprise–government" cooperative talent ecosystem.

4. Construction of an Innovative Talent Cultivation Model

4.1. Diversified Curriculum System Design

In response to the evolving needs of the digital economy, English major curricula in the Greater Bay Area must undergo a strategic transformation to move beyond the traditional "language and literature" paradigm. The proposed curriculum system should be modular, competency-oriented, and responsive to the evolving demands of the digital economy. It should integrate three core dimensions: linguistic proficiency, technological literacy, and industry-specific application, such as language use in digital trade, smart manufacturing, and financial technology contexts.

Firstly, foundational language courses must be upgraded with enhanced emphasis on applied communication in digital contexts, such as courses in "Digital Rhetoric and Discourse", "Professional Writing in Virtual Environments", and "Multimodal Communication". Secondly, digital literacy should become a core component of the curriculum. Courses in "Data Analytics for Language Studies", "Information Literacy", and "Computer-Assisted Language Learning" will enable students to harness technological tools in their academic and professional pursuits. Thirdly, industry linkage should be foregrounded through content-specific modules such as "English for Digital Finance", "Cross-Border E-Commerce English" and "Interpreting for Smart Tourism". These courses should be co-designed with industry experts to ensure relevance and authenticity. Furthermore, course delivery can adopt hybrid modes — integrating online resources, flipped classrooms, and immersive technologies (e.g., virtual simulations) — to cultivate adaptability and autonomous learning in students.

4.2. Development of Practice Platforms through Industry-Education Integration

A core tenet of the innovative model is the systematic development of experiential learning platforms that bridge academia with industry practice. The traditional university internship model, often limited to administrative observation, must evolve into a robust industry-education collaboration framework. Higher education institutions should establish long-term partnerships with enterprises in sectors such as digital trade, fintech, AI-driven services, and cross-border communication. These partnerships can give rise to co-founded "Talent Development Bases", where students participate in co-supervised projects, field assignments, and skill-based training.

Such platforms should be fully embedded into the academic credit system rather than treated as mere add-ons to the curriculum. For example, capstone projects can be jointly supervised by academic mentors and industry professionals. Hackathons, innovation bootcamps, and entrepreneurship labs — run in partnership with technology companies — can serve as intensive training grounds for applying English and digital knowledge in real-world contexts. These initiatives also foster soft skills such as collaboration, leadership, problem-solving, and intercultural negotiation, which are crucial in the increasingly globalized and digital work environment.

4.3. Innovation in Teaching Methods and Evaluation Mechanisms

Innovative teaching strategies are essential to realize the goals of interdisciplinary and applied talent training. Traditional lecture-based models must be restructured into learner-centered, problem-based learning (PBL) environments. For instance, instead of teaching translation theory in isolation, students could work on live translation projects using AI-assisted tools, engaging in peer review and iterative revisions. Similarly, cross-cultural communication can be taught through role-plays and digital storytelling in international virtual exchange programs.

To match pedagogical innovation, the evaluation system should transition from rote examination to continuous, formative assessment. The introduction of performance-based assessments, such as digital portfolios, reflective journals, group presentations, and industry project reports, enables a more comprehensive evaluation of student competencies. Additionally, institutions can implement digital badges or micro-credentials to certify specific skills (e.g., "Digital Research Competence" or "Intercultural Project Management") that students acquire throughout their studies. This layered assessment framework aligns with international talent accreditation standards and increases students' visibility in the job market.

5. Policy Recommendations and Implementation Pathways

5.1. Policy Support Recommendations

At the macro level, effective implementation of the proposed model requires robust policy support from government bodies at municipal, provincial, and national levels. Governments should issue clear guidelines that encourage higher education institutions to reform English major programs in alignment with the demands of the digital economy. Special funding mechanisms should be established to subsidize pilot projects in curriculum innovation, digital infrastructure upgrades, and cross-border education collaboration.

Furthermore, to promote university-industry cooperation, policy tools such as tax incentives, government procurement contracts, and innovation vouchers can be used to stimulate corporate participation in talent training. Regional education authorities should also promote the construction of "Digital Economy Talent Development Zones" where universities, enterprises, and research institutions form synergistic clusters. These zones can serve as innovation incubators for applied English education and interdisciplinary research, ensuring alignment between higher education output and industrial talent needs.

5.2. Reform Pathways for Higher Education Institutions

At the institutional level, reform must begin with reconfiguration of academic governance and faculty incentive structures. Universities should establish dedicated units or task forces for interdisciplinary program coordination, responsible for curriculum co-design, course evaluation, and partner engagement. Cross-disciplinary faculty teams should be encouraged through joint appointments and shared course delivery.

To support these reforms, internal faculty development programs are essential. Universities should offer regular training sessions on digital pedagogy, educational technology, and emerging industry trends. Sabbaticals and exchange opportunities with industry partners can also broaden faculty exposure to real-world applications. In teaching, course modularization and stackable credentials should be introduced, allowing students to personalize their learning trajectories and engage in lifelong learning. Institutions should also integrate learning analytics to monitor student progress and adapt instruction accordingly.

5.3. Mechanisms for Regional Coordinated Development

Given the geopolitical and institutional diversity within the Greater Bay Area, coordinated regional development is a strategic imperative. A trilateral coordination mechanism should be established involving Guangdong, Hong Kong, and Macao, aimed at standardizing educational objectives while allowing for local flexibility. This could take the form of a "GBA Consortium for Digital English Education", involving universities, educational authorities, and business councils.

The consortium can facilitate regional synergy in several ways:

1) organizing annual forums to exchange best practices.
2) establishing joint degree or micro-credential programs.
3) pooling teaching resources and digital platforms.
4) setting up shared talent development metrics.

In the long term, a digital credential verification system could be developed to facilitate cross-border mobility and employment of graduates. Policy harmonization and coordinated planning will be vital to eliminate systemic barriers and ensure the smooth operation of interregional collaboration initiatives.

6. Conclusion

6.1. Summary of Key Findings

This study reveals that under the digital economy context, traditional English major training models in the GBA are no longer adequate to meet emerging interdisciplinary and applied talent needs. There is a significant gap between students' existing competencies and the demands of the digital labor market, particularly in areas such as digital literacy, industry-specific application, and practical engagement. Through comprehensive analysis, the study confirms the necessity and feasibility of constructing an innovative training model that emphasizes curriculum diversification, industry-education integration, and pedagogical transformation. These reforms will enable universities to cultivate English professionals who are not only linguistically proficient but also digitally empowered and industry-ready.

6.2. Research Limitations and Future Directions

While this study offers valuable insights, it is limited by its reliance on self-reported survey data, which may be subject to bias. Additionally, regional differences in educational infrastructure and institutional capacity were not deeply analyzed. Future research should adopt longitudinal and comparative case studies to examine the long-term effectiveness of innovative training models. Moreover, further empirical research is needed to explore interdisciplinary integration frameworks and to assess the impact of digital technology on teaching outcomes. Expanding the scope to include international benchmarks could also offer valuable perspectives for globalizing talent cultivation strategies in the GBA.

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