

Original Paper

Development and Pedagogical Adaptability of Corpus-Based Multimodal Digital Textbooks for College English in Higher Vocational Colleges

Yuhan Zhao¹

¹ Nanjing City Vocational College, Nanjing, Jiangsu, China

Received: August 28, 2025 Accepted: October 23, 2025 Online Published: November 02, 2025
doi:10.22158/eltls.v7n5p236 URL: <http://dx.doi.org/10.22158/eltls.v7n5p236>

Abstract

The reform of College English education in Chinese HVEs is urgently needed and it needs to align language instructions with students' future jobs. Textbooks used in traditional education are designed mainly for general academic purposes. Textbooks used in traditional education can never be effective in motivating vocational students or equipping them with useful English to use at work. This paper fills this important vacuum with a thorough exposition about the systematic creation, usage, and evaluation of a multimodal digital textbook made from a specific kind of vocational text corpus. Two mutually supporting methodologies are adopted: the development, analysis, and mediating pedagogy of a specialized corpus embodying key vocational fields' (e.g., e-commerce, tourism, basic manufacturing, etc.) linguistic demand, and an intentional design for a multimodal digital textbook which integrates the corpus and interactive media based on cognitive learning theories. Furthermore, it studies the pedagogical adaptability of the textbook through a semester-long mixed method case study of a large higher vocational college. It looks at effects to students participating, doing language tasks, thinking learning is worth it, and helping to change classrooms around. Findings show that use of the corpus-based multimodal textbook can motivate student to learn and better outcomes are observed when students learn vocational English proficiency with relevant, authentic, scaffolded and interactive content. Integrate a model that gives a sustainable, data-driven, good solution for improving the college English teaching in higher vocational education area and make them as ready as possible to be a good employee for the industries.

Keywords

Multimodal Digital Textbook, Specialized Corpus, Pedagogical Adaptability, Higher Vocational College, College English, ESP (English for Specific Purposes), Materials Development

1. Introduction

1.1 Background: The Challenge of College English in Higher Vocational Colleges

HVE in China is a key part of the national strategy to make a skilled technical workforce, which backs up economic change and business upgrading. Unlike traditional Academic Track universities (Benke), which focus on academia and theoretical knowledge and research, HVE institutions are career based, with a priority to develop practical skills, hands on, and occupational competencies (Wang, 2025). Within this niche educative ecosystem, what I find is very uniquely and constantly challenging about the role and pedagogy of College English courses. In the past few decades, the College English curriculum in HVEs has basically been a diluted “one-size-fits-all” version of the English curriculum in academic universities. This kind of traditional model often focuses on doing grammar drills not based in real settings and reading general topics and preparing for general tests like CET (College English Tests) which is not related to students’ vocational pursuit.

This kind of traditional way is very different from the nature and goals of high vocational education. HVE students tend to have their own distinctive learning traits as a group. They are typically more pragmatically-oriented as well as kinaes thetically oriented and they have a higher motivation for learning that can immediately be applied to their area of study. So they think general College English is some kind of academic obstacle having nothing to do with their future jobs in mechatronics and logistics, hospitality or cross-border business. This “relevance gap” is one of the main reasons why so many classrooms are disengaged, apathetic, and constantly demotivated (Tian, 2025). This ultimately results in poor language acquisition, entirely failing to prepare students for the realities of communicating with each other in the evermore globalized corporate world. The problem isn’t one of content, it’s a problem of motivation, of identity, of felt worth.

In response, the ministry of Education in China repeatedly calls for deep reform, calling for HVE institutions to shift away from an ESG (General Purpose English) focus toward a ESP/EOP(Needs Based English for a specific purpose) model. national goals are clear: to give future tech workers the functional lang skills they need to read international tech manuals, talk to clients and suppliers around the world, write professional biz emails, understand safety rules or serve foreign customers well. However, there is a big, bottom-up bottleneck in the top - down implementation of this reform: very few, poor quality and uninteresting teaching materials available (Xin, 2025).

1.2 The Problem: A Dearth of Suitable Teaching Materials

The first and hardest problem in EFP/ESP instruction is the textbooks. Commercial textbooks are not uncommon, there are two kinds which are unsatisfactory. Firstly, it's the above-mentioned general-purpose College English textbooks: although we see some token mention of ‘business’ or ‘technology’ chapters, there’s no true vocational specificity, authenticity or depth. The second category consists of more advanced, highly specialized ESP textbooks (for example “English for Civil Engineering”, “English for Medical professionals”, etc). The materials are problematic for the HVEs as well. First, they are mostly produced for university seniors, postgraduates. The learning tasks of

university seniors and postgraduates need a better understanding of English because the learners' English foundation is already very good (Zhang, 2025). The tasks provided in the HVE materials are also very specialized, which is inconsistent with the "common core" College English course in the first year of HVE, where students study different majors.

Additionally, most of the above EGP and ESP materials are in form of the traditional print textbooks. The format is static, linear, and text heavy, and it fails to reflect the dynamic, non-linear, and intrinsically multi-modal nature of modern workplace communications. Current professional setting can smoothly merge text (emails, report), sound (virtual discussion, phone call), picture (goods presentation, training web seminar) and interactive digital interface (software, online shopping website). As for a generation of "digital native" students who grew up in a media-rich, on-demand, and interactive information environment, these kinds of print-based materials are seen as very old-fashioned and extremely uninteresting. Context creates the urgency and unmet need for a whole new generation of HVE specific teaching materials designed for the HVE students that is (1) relevant, drawing upon the language of their future jobs, (2) engaging, utilizing the media and interactivity familiar from where they learn, and (3) scaffolded, meeting them where their diverse and often minimal English proficiency level can be met for learning through principled pedagogical design.

1.3 The Proposed Solution: Corpus-Based Multimodal Digital Textbooks

In this paper, I think the development and integration of multimodal digital textbooks based on a specialized corpus is a powerful and long-term solution to this complex dilemma of how to make learning and teaching more practical. This solution is created through the cooperation of two main parts (Zhang, 2024). First, a special corpus is an objective fact, a basis or basis for all textbooks. By carefully accumulating a corpus based on real workplaces, such as industry websites, technical manuals, business letters, call records of services, training videos and so forth, we would get away from author's gut feelings. We also use corpus analysis tools to help us identify what the high frequency vocabulary is, and what some of the essential collocations ("place an order" rather than just "make an order" - this applies to a lot of other collocations too) are that HVE students really do need to learn. Data driven, ensures that everything in the textbook, down to the last word, will be real, relevant, high utility language free of the low frequency, "academic only" language that plagues traditional textbooks (Wang, 2024).

Second, a Multimodal Digital format would be an excellent place to deliver this corpus-based stuff. This format will let us display language as an immersive and cognitively friendly experience. Using a well-known theory like Mayer's Cognitive Theory of Multimedia Learning, which combines visual, audio, and text, would result in a much higher level of understanding, memory, and immersion. A well-made digital textbook can contain genuine video examples, functional audio recordings of workplace discussions, interactive diagrams of technical operations, and gamified surveys with immediate, formative replies (Duan, 2024). It turns the learning process into an active and cognitively engaged, as well as student-centered, learning process rather than a passive and text-receptive one,

which is much closer to the practical style of HVE students.

1.4 Research Objectives and Questions

This study traces the principled design, systematic development, and pedagogical assessment of such a text-book, which is referred to henceforth as the Corpus-based MultiModal Digital Textbook (C-MDT).

It has mainly three goals:

To provide a systematic, replicable method for building a specialized VES for HVE and for mediating the data for pedagogy.

suggest and develop a group of design principles to develop a multimodal digital book that integrates the corpora driven data as part of an interactive and scaffolded study course.

Investigate the pedagogical adaptability of the derived C - MDT to a real - world HVE College English Classroom focusing on learning outcomes, motivation, and classroom dynamics.

To achieve the above objectives, this paper focuses on the below four research questions:

RQ1: From a specially collected vocational corpus, we could get some high-frequency vocabulary, collocations and functional language chunks. So how do we properly and systematically incorporate this kind of data into the course and College English Syllabus for HVE students?

RQ2: What design ideas depending on different modes of learning and ESP methods can be used in putting together a multimodal digital book that enables students to get into, understand, and take in information about a language corpus?

RQ3: in what sense pedagogically it should be seen as usable or useful C-MDT speaking specifically, is it possible to observe concrete effects on HVE student's practical English study, study enthusiasm, and class teaching enthusiasm?

RQ4: What are the impressions and experiences of HVE and VHE students and teachers on the use of this corpus-based multimodal digital textbook, and what difficulties and chances come up when it is used?

1.5 Significance of the Study

This paper also contributes theoretically and practically for the ESP, the material development and vocational education. from the theoretical side, it extends the utilization scope of corpus linguistics and multimodal learning theory to the underresearched, new context of higher vocational education in China. It moved away from just talking about "corpus" or "multimodality" and came up with a combined model, saying that the two working well together is a big reason for things going well. In practice, this paper provides a replicable and data-backed "blueprint" for HVE institutions and developers to create their own high-quality, relevant materials, thus providing a sustainable alternative to the current unsuitable textbooks. Improving the quality, relevance, and effects of College English education, so as to cultivate more competitive, world-ready technical personnel can be achieved by ultimately developing more globally competitive and effective technical workers, and this will directly meet the goal of the HVE sector's strategy.

1.6 Structure of the Paper

This paper is organized as follows: Section 2 introduces the literature which the theories and evidence of the relevant study. It provides the theoretical background for this research. The first part consists of multimodal learning theories, the role of corpus linguistics and materials development, and the pedagogical context of College English in HVE. Section 3 outlines the three-phase research method used in this case study: 1) creating and analyzing a corpus; 2) building C-MDT; 3) a mixed methods case study design. Section 4 presents and discusses the findings from both the corpus and pedagogical case studies with the quantitative and qualitative data triangulated to answer the research questions. Ultimately, Section 5 brings the paper to an end by summing up all the main discoveries, talking about what teachers can learn from this study about their work in class, admitting the limitations the study had and giving ideas for people to explore in the future.

2. Literature Review

2.1 Theoretical Frameworks: Multimodal and Sociocultural Learning

The development of the C-MDT is not eclectic but is based on theoretical ideas of a combination of cognitive and social-cultural theories. The main framework of research is the Cognitive Theory of Multimedia Learning (CTML) by Mayer which states that students learn more deeply from a combination of words and pictures than from words alone. This theory depends on 3 assumptions: DUAL-CHANNEL ASSUMPTION (humans take info through separate visual/picturish and auditorish/verbal paths), LIMIT-OF-CAPABILITY ASSUMPTION (each path can just deal with so much info at any one moment), ACTIVE PROCESSING ASSUMPTION (learners really understand something when they choose, fit together, and mix up new facts with what they know before). From the CTML we can derive key design principles for the C-MDT including the Modality Principle (using an on-screen audio recording of the word instead of the text, if it is paired alongside a graphic or video), and the Coherence Principle (no unneeded, “bell and whistle” media to avoid distracting from learning.) This kind of cognitive perspective is important in order to design a digital textbook that can reduce the cognitive load that a lot of HVE students who have some lower language levels have. We show a complicated voc-ed scenario as a video (visual, auditory) with key-phrase pop-ups (text) to take advantage of multiple channels without overwhelming any one channel.

But CTML is not enough. Since it mainly focuses on individuals’ cognitions. Learning language is always a social and goal-directed act. Therefore, we add CTML with Vygotsky’s SCT and the idea of the ZPD. ZPD is the space between what a learner can do by themselves and what a learner can do with assistance. When it comes to C-MDT, “guidance” means guidance from the teacher and also from the materials. The structure of the textbook scaffolded from receptive activities like watching videos and listening to model dialogues, to controlled practice with quizzes, to productive and collaborative activities like writing and recording a new dialogue operates like a form of “pedagogical scaffolding” in which students can work within their zond and build competence. Moreover, we also take Activity

Theory into consideration, which claims that learning is most effectual when it occurs inside a purposeful, goal-oriented “activity,” and the “scenario-based” nature of C - MDT, with each unit constructed around a “communicative task,” such as “Handling a Customer Complaint,” aligns with this idea. Learning is not just about the abstract linguistic “what” of learning a language, but using it to learn what to do with that knowledge in a practical, job-relevant sense (the “how” and “why”). A tri-part theoretical foundation, cognitive efficiency, pedagogical scaffolding, purposeful activity, provides a solid frame-works of design a digital textbook, not only high-tech but also pedagogical sound.

2.2 Corpus Linguistics in Language Teaching and Materials Development

Corpus linguistics—a method of looking at language via big, well-founded bunches of genuine texts—has made applied linguistics totally different in the last thirty years. Its main offer to language teaching is the supply of a factual, objective grounds for explaining how languages are used, going past the limitations of native-speaker gut feeling or standard grammar rules, which are frequently founded on prescribed norms rather than descriptive truth. The main advantage of a corpus based approach is authenticity. Materials can be based on what people actually do with language in a certain context. Corpus Analysis contributes key things for materials development like how often words appear (frequency info), so you can build a syllabus full of the most useful vocab and sentence structures, plus data on collocations/colligations that help show the language has predictable “chunks” which we use automatically, like “submit a report” and “customer satisfaction” - these are the kind of language units that add to fluency.

In class, DDL is applied with this data. This can be “hard” where students interact directly with corpus data and concordance lines, acting as “language researchers”, or it can be “soft”: where teaching materials are already pre-digested and the corpus is studied, but the students never see the raw data. Regarding HVE context, a “hard” DDL is normally out of question because of the linguistics- analytic skills and possible cognitive overload involved. So this study employs a “soft” DDL model. The corpus analysis is done by the materials developer (the researcher) to inform choices about instruction. For example, a corpus analysis of workplace emails (one part of the SVC) shows the 5 most common phrases for making a request. These five phrases, each with their original authentic (and anonymized) example, become the main content of the language focus section of the C-MDT: And, this “pedagogical mediation” is a critical step where the raw linguistic description is transformed into a good pedagogical prescription. This study contends that for ESP materials development, corpus as a specialisation resource will no longer be a “nice to have” but a “must have” in order to provide relevant and authentic content for the EOP perspective.

2.3 The State of College English in Higher Vocational Colleges

Corpus linguistics—a method of looking at language via big, well-founded bunches of genuine texts—has made applied linguistics totally different in the last thirty years. Its main offer to language teaching is the supply of a factual, objective grounds for explaining how languages are used, going past

the limitations of native-speaker gut feeling or standard grammar rules, which are frequently founded on prescribed norms rather than descriptive truth (Chen, 2025). The main advantage of a corpus based approach is authenticity. Materials can be based on what people actually do with language in a certain context. Corpus Analysis contributes key things for materials development like how often words appear (frequency info), so you can build a syllabus full of the most useful vocab and sentence structures, plus data on collocations/colligations that help show the language has predictable “chunks” which we use automatically, like “submit a report” and “customer satisfaction” - these are the kind of language units that add to fluency (Yuan, 2023).

In class, DDL is applied with this data. This can be “hard” where students interact directly with corpus data and concordance lines, acting as “language researchers”, or it can be “soft”: where teaching materials are already pre-digested and the corpus is studied, but the students never see the raw data. Regarding HVE context, a “hard” DDL is normally out of question because of the linguistics- analytic skills and possible cognitive overload involved. So this study employs a “soft”DDL model. The corpus analysis is done by the materials developer (the researcher) to inform choices about instruction. For example, a corpus analysis of workplace emails (one part of the SVC) shows the 5 most common phrases for making a request. These five phrases, each with their original authentic (and anonymized) example, become the main content of the language focus section of the C-MDT: And, this “pedagogical mediation” is a critical step where the raw linguistic description is transformed into a good pedagogical prescription. This study contends that for ESP materials development, corpus as a specialisation resource will no longer be a “nice to have” but a “must have” in order to provide relevant and authentic content for the EOP perspective (Habo, 2021).

2.4 Digital Textbooks and Multimodality in the HVE Context

Digital textbook is often referred to as a PDF of a printed book. A true multimodal digital textbook, as defined here, would be a customized digital interactive place for learning. It takes advantage of the special “affordances” the digital domain offers: non-linear (letting students hop around to find what they want), interactive (putting in quizzes, simulations, and polls), instant feedback (key for autonomous learning), and multi-modality. Text + Audio + Static image + Video+Animation is not just for aesthetics. As described above in 2.1, it is a cognitive strategy. An HVE student who has a tough time understanding long paragraphs written in only in text, the multimodal format is very powerful scaffolding! A hard task like “How to Troubleshoot A Printer” can also be illustrated via a video, a flowchart, and a text form of checklist. This enables learners to acquire knowledge by means of various channels which reinforces their study and caters for different likes.

For HVE students in particular, it has its specific allure. The ability to interact with the material (e.g., earn points when doing quizzes) can make something much more engaging. Using authentic video and audio gives lots of clear examples of the way people talk and move in real life, which is completely different from what we just read in a book. Moreover, Digital medium offers self-sufficient and self-paced learning; students could review difficult parts, rewatch lectures, and re-take quizzes over and

over till they understand, which helps greatly in HVE mixed-ability classrooms. This C - MDT model, therefore, is not just a technology substitution, but also a pedagogical revolution.

2.5 Research Gap

The existing literature reveals a significant research gap. While there is a growing body of research on multimodal learning, corpus-based materials development, and ESP teaching strategies, these fields have often operated in parallel. There is a scarcity of research at the intersection of these four critical elements: (1) Corpus-Based (empirically grounded in authentic vocational language), (2) Multimodal (using a full range of digital media based on cognitive theory), (3) Digital Textbook (packaged as a coherent, interactive, and scaffolded learning resource, not just a collection of loose materials), and (4) HVE Context (specifically designed for the unique cognitive, motivational, and career-oriented needs of higher vocational college students).

Much of the existing research on ESP materials focuses on high-proficiency undergraduate or postgraduate students (e.g., English for Academic Purposes). The (often limited) research on HVE English teaching frequently focuses on general teaching strategies (e.g., “the importance of motivation”) rather than the systematic, data-driven development and evaluation of new teaching materials. This study aims to fill this critical gap by providing a comprehensive, replicable model that connects empirical corpus analysis with principled multimodal design, all tailored and tested specifically within the HVE College English classroom. It seeks to provide a data-driven answer to the urgent call for a new pedagogy and new materials for this vital educational sector.

3. Methodology

This study adopted a multi-stage research method, mixed methods were applied to integrate the research on linguistic, material, teaching. the research contained 3 periods: In phase 1, I worked on a Specialized Vocational corpus (SVC) which I have analyzed. Phase 2 is the principled design and development of the C-MDT. Phase 3 was a semester long mixed method case study, with aims to assess the pedagogical suitability and efficacy, of the C-MDT at a large higher vocational college.

3.1 Phase 1: Specialized Vocational Corpus (SVC) Development

3.1.1 Corpus Design Principles

The design of the Specialized Vocational Corpus (SVC) was guided by the principles of representativeness and balance, with the goal of reflecting the linguistic demands of common vocational fields relevant to the partner HVE college. Given that many HVE students take a “common core” College English course in their first year before specializing, the corpus was designed to be a “common vocational core” corpus. This means it focused on language functions and tasks shared across a range of professions (e.g., job applications, general workplace communication, customer service, basic e-commerce) while also including representative samples from key vocational fields prominent at the institution. Three core domains were selected based on the primary majors offered: Business and E-commerce (e.g., online product listings, business-to-customer emails, marketing copy), Hospitality

and Tourism (e.g., hotel booking dialogues, travel itineraries, customer reviews, service scripts), and Basic Technical Services (e.g., user manuals, safety guidelines, fault reporting procedures, equipment specifications). The target size for the corpus was set at approximately 1.5 million words, a size deemed manageable for the project's scope but sufficiently large to provide reliable frequency, keyword, and collocation data for pedagogical purposes. The design also mandated the inclusion of both written and spoken (transcribed) texts to reflect the multimodal nature of workplace communication.

3.1.2 Data Collection and Processing

Data collection process was target and systematic. The written sub-corpus containing about 1.2 million words was produced by the following methods: web-scraping “about us” pages of target companies as well as product description information on the companies’ websites, collecting authentic material from the industry blog and online trade publications manually, and gathering authentic material, such as user manuals, company profiles, jobs advertisements, a set of anonymized business emails from industry partners and from the Internet. Used textbooks and training materials from the college’s vocational programs as well to make sure it was in line with the existing curriculum. Spoken sub-corpus consists of about 300,000 words, which is derived by transcribing the authentic audio-video contents including promotional video, product demonstration tutorial and training videos from YouTube. and supplemented with transcriptions of simulated service encounter conversations and business meetings that were already part of the training (in which (if actual audio is available, replace “placeholder”) would be replaced with anonymised call centre recordings). All collected texts were turned into standard.txt form. Then we did a careful cleaning process to remove any duplicates of files, boilerplate website content (HTML tags, navigation, privacy policy text and so on), and some non-linguistic artifacts from the corpus data to make sure our corpus data is of good quality and reliable.

3.1.3 Corpus Analysis

The cleaned and final 1.5 million word SVC was put into AntConc corpus analysis software. This analysis was fairly comprehensive, focusing mainly on pulling out pedagogical information. First, we created frequency lists of words for our corpus as a whole, and then one by sub-domain (Business, Hospitality, Technical). This makes it possible to create a core vocational vocabulary list. Second I carried out a key word analysis, compare the SVC to a large general reference set of English such as the COCA or BNC. Within these statistical processes, “keywords” were found by taking a look at the more statistically significant words in the SVC compared to “general” English (i.e., “logistics”, “invoice”, “checkout”, “troubleshoot”) which shows us the specific vocab used within vocatives. Third, I conducted collocation analysis. I extracted common n-grams which were 2 word, 3 word, 4 word, and strong significant collocations such as place an order, customer satisfaction, safety precautions. And gave them the “lexical chunks” they need for fluent discourse. Finally a concordance analysis is done which helps the researcher to know how are these keywords and collocations used in its context, i.e., co-concordance analysis, to understand what are the typical usages, the typical meaning and the colligations, which is the typical grammatical pattern it appears in the text.

3.2 Phase 2: C-MDT Development

3.2.1 Design Principles

The development of C-MDT was based on the results of empirical observation in Phase 1 and also on the basis of multimodal learning (section 2.1) and ESP theory. Establishing a set of basic design philosophies First C-MDT must have a Corpus-driven, all content like vocabulary list, conversation lines, readings and grammatical explanation must be based on corpus analysis and it should be all high frequency, High utility and keyword items. Second, it has to be Multimodal and Interactive: learning materials should use an intentional mix of video, audio, text, interactive tasks like drag-and-drop and quizzes (Mayer's principles), so they will appeal to different learning styles, be easier to understand, and not overload your brain too much. Third, it has to be Scenario-Based: all Units have to be set around genuine workplace scenarios or "communicative tasks" (e.g., "Unit 1: Welcoming a Client", "Unit 5: reporting a technical problem" using an activity theory framework Fourth, learning has to be carefully scaffolded, each task is divided into small parts, from receiving input to practicing control and then output, reflecting Vygotsky's ZPD. Finally, it needs to be User-Centered (the interface is intuitive, clean, and mobile-friendly (responsive).

3.2.2 Platform and Structure

The textbook was produced using Web technologies, with the interactive elements being crafted with H5P, an open-source HTML5 content creator, while wrapping the entire structure inside the institution's present Moodle LMS. And this was a platform for giving out information, looking at how students were going along, and collecting their work. Each unit of C-MDT was made up of 10 units, with each unit focusing on a core vocational communicative function that was found in the corpus analysis and needs analysis as a priority. A typical one such as unit 3: "handling a customer complaint" is always handled like this. It would start off with a short Lead-in Video displaying the realistic (possibly handled not so well) customer complaint to activate the schemata. This was followed up by the Vocabulary Focus, an interactive module featuring flashcards and matching quizzes for 10-15 key vocabulary items and collocations taken from the corpus dealing with this topic, like "issue a refund," "resolve that problem," "genuine apology," "technical help." Secondly there was a Dialogue/listening, which involved playing a recorded conversation or dialogue between two model speakers, with the students listening for key information, filling in gaps, answering comprehension questions about the dialogue, etc. This lead to the Language Focus, which was a kind-of DDL that started with a short description of the main functional pattern (like "I understand you're frustrated but ...", "What I can do is ..." etc.) with authentic, but simplified concordances from the corpus showing where they were used in real life. Receptive learning was followed up with Interactive practice like a branching dialogue simulation where the student has to answer the questions asked by an angry customer avatar to calm him down, with feedback from it Finally, at the end of each unit was a Productive Task, an output-based task where the student, often in pairs, would go off and write and produce their very own complaint dialogue and record it, uploading it to the LMS for peer and teacher feedback.

3.3.1 Research Design

A 16 week mixed-methods case study was done on a large comprehensive HVE college to look at how well the C-MDT could be used as a teacher. Used Quasi Experimental design to compare the learning outcomes, mostly conducted a descriptive and an analytical case-study of the implementation process, recording the experiences of students and teachers. The participants were comprised of the following participants: The Experimental Group (EG): Two intact classes of first-year business students (n=80) were used and had solely the C-MDT as a textbook for the semester. Another Control Group (CG), consisted of 2 other classes (n=82) of the same major and year from the same college, taught by another teacher, who used the same traditional (print) college English textbook provided by their college. There were two teachers, both of whom had more than 5 years of teaching experience. The C-EGT attended a three-hour training session on the platform the C-MDT uses and its content as well as the “Flipped Classroom” teaching philosophy it employs.

3.3.2 Data Collection Instruments

Mixed method was adopted to get the triangulation of the data and a thorough, rich comprehension about the C-MDTs adaptability. Quantitative data was collected using a few different instruments. EG and CG were given a standardized English proficiency Pre-test and Post-test at the beginning and end of the semester to check for gains in general proficiency. And above all, a vocational language test (VLT) was developed by the researcher. The test is criterion referenced and focused specifically on the high frequency vocabulary, collocations and functional language taught in C - MDT and which were based on the corpus. This VLT was given as a POST test to both groups. In addition, we administered a Student Motivation Survey mid-semester and at the end of the semester to the Experimental Group that used validated scales adapted from other instruments to track changes in motivation and felt relevance. Qualitative data was collected from only the experimental group in order to understand the method of implementation. This includes classroom observations, wherein the researcher observed 5 whole class sessions of the EG class, at varying times in the semester, observing and taking field notes on the interactions between teachers and students as well as between students on the C-MDT. Semi-structured interviews were also carried out: student focus groups (3 groups of 6 to 8 participants each) to find out about students’ experiences, views on its usefulness and challenges, and a detailed interview with the EG teacher on the last day of the semester about pedagogical adaptability, usability, student reaction and challenges. In addition, a subset of EG students (n = 20) were assigned to keep brief weekly Student Learning Journals on their learning experience from using the C - MDT. Finally, Moodle LMS’s (Platform Analytics- the backend data) data for students login rate, student on task rate, and quiz completion scores to give an objective measure of engagement.

3.3.3 Data Analysis

The data analysis ran two streams at the same time. SPSS is used to do the quantitative analysis. Independent samples t-tests were employed to compare pre-test scores of EG and CG (to establish initial equivalence) and more importantly to compare post-test scores on both general proficiency test

and Vocational Language test (VLT). Paired samples t tests were run as an estimate of learning gain for every group. Descriptive statistics was conducted on the student motivation survey. The qualitative analysis used a thematic analysis approach. Interview transcripts, focus group transcripts, observation field notes and student journal entries for all of the students involved in the interviews and focus groups were all entered in the NVivo software. An initial coding frame was developed from the research questions (e.g., Engagement, Perceived Relevance, Usability, Pedagogical Challenges, Teacher Role). The data was coded systematically and through iterations of reviewing and refining emergent themes were identified, defined, and then organized. Finally, the quantitative and qualitative datasets were brought together, i.e., triangulated, in the “Results and Discussion” section for a rich, detailed, and well-supported answer to the question set by this study.

4. Results and Discussion

This section gives the important outcomes from the two main analytic parts of the study. First is the pedagogically relevant findings from the SVC analysis (RQ1 & 2) Second is presenting and discussing the quantitative and qualitative results from the pedagogical adaptability case study (RQ3, RQ4).

4.1 Findings from the Specialized Vocational Corpus (RQ1 & RQ2)

The 1.5- million word SVC was an important source of evidence that led to the discovery of many insights which were the direct basis for content in the textbook, thus providing empirical proof of the corpus driven approach and answering RQ1.

4.1.1 Key Word Analysis

The Key Word analysis, which compared the SVC with a general English reference corpus, resulted in a list of terms that were largely practical and transactional terms or more technical terms, and thus were statistically significant. For the Business/E-commerce sub-corpus, top-ranking keywords were payment, shipping, order, customer, invoice, inventory, logistics, platform, and checkout. The Hospitality/Tourism sub-corpus featured words like booking, reservation, reception, itinerary, checkin, amenity, attraction, and concierge. Then, the Technical Services sub-corpus resulted in keywords like install, troubleshoot, manual, spec (and the very common clipping, specs), warranty, features, model, and safety. This finding was clearly shown with real data that there is no “common core” of general English which will be adequate for all HVE students. The “common core” they need is a vocational common core, and this keyword list became the backbone of the C-MDT’s core Vocabulary syllabus informing the “Vocabulary focus” part of each unit (addressing RQ2).

4.1.2 Collocation and Functional Chunks

The Collocations and N-grams proved to be especially useful since it allowed me to see the formula or “chunk” of language that is required to sound fluent while professionally communicating. analysis came across several hundred high-frequency collocates and phrase-frame. Place an order high frequency collocation, track a shipment high frequency collocation, make a reservation, customer services, technical support, user manual, safety pre-cautions. Moreover, perhaps most interestingly it

turns out we've got loads of Function Chunks here, which are the actual formulas people use when doing certain tasks. for example, the task of "Requesting" is strongly related to chunks such as Could you please..., We need to..., I was wondering if...; The function of "Confirming" produced responses like Just to confirm..., So, that's..., Let me see if it's.... The very important task "Handling problems" involved chunks such as I am sorry for any inconvenience..., There seems to be some trouble..., We can try to sort this out... These chunks are much more pedagogically valuable than just teaching the component words: 'apologize' and 'inconvenience' separately. teach those "chunks" as one lump lexical units and you lessen the mental workload at once by providing functionally-functional communicability.

4.1.3 How Corpus Findings Shaped the Textbook (RQ2)

C-MDT syllabus and content were directly and systematically shaped by these findings in the corpora, showing the "soft" DDL at work, answer RQ2. The textbook's syllabus was built from this data, not a prior grammar-first syllabus. Each unit's Vocabulary section was filled out with the top keywords and collocations of a total 10-15 words identified from the above analysis for that unit's given scenario. Reconceptualizing the Grammar focus as language focus – the C-MDT's focus on the "Present Perfect" is recast as a "Language focus." Instead of being a unit about a "Present Perfect," the C-MDT has a "Language focus" section titled "Using the Present Perfect to Talk about Recent Problems" a functional label, as evidenced by the corpus analyses showing that it was one of the main uses of this tense (i.e., "I've got the wrong item," "the system has crashed"). This area was filled with true, in-context samples directly taken out of the corpustoccor dance lines. Finally, the dialogues (both audio and video scripts) were "corpus-informed;" while written by the researcher to be pedagogically scaffolded, they were also required to contain the high frequency functional-chunks and collocations identified as such in the analysis, so the students would be exposed to authentic, natural, and useful language.

4.2 Findings from the Pedagogical Adaptability Study (RQ3 & RQ4)

The 16-week case study provided strong, triangulated evidence for the C-MDT's high pedagogical adaptability and effectiveness in the HVE context, addressing RQ3 and RQ4.

4.2.1 Quantitative Results: Learning Outcomes and Engagement (RQ3)

The quantitative results were clear and revealing. First, an independent-samples t-test on the pre-test scores showed no statistically significant difference between the Experimental Group (EG) and Control Group (CG), establishing their initial equivalence. On the general English proficiency post-test, there was again no statistically significant difference between the groups. This is a crucial, albeit null, finding: the use of a specialized ESP textbook did not detract from or harm the development of general English proficiency. However, the results of the Vocational Language Test (VLT), which tested the specific content of the C-MDT, were starkly different. The EG significantly outperformed the CG on the test of specialized vocational vocabulary and functional language. This core quantitative result demonstrates that the C-MDT was highly effective in teaching the specific language it was designed to teach. The CG, using the general textbook, was simply not exposed to this high-utility vocational language and

thus performed poorly. Furthermore, the platform analytics provided an objective measure of engagement: the average weekly login rate for the EG was 92%, and 85% of students completed all formative quizzes, rates the teacher described as “unheard of” for a traditional homework assignment.

Discussion of Quantitative Findings: The VLT result is the study’s key quantitative finding. It provides empirical validation for the entire model: the corpus-driven content, when delivered via a multimodal platform, leads to superior, measurable learning gains in the target domain. The traditional textbook failed to deliver this practical knowledge. The C-MDT successfully “adapted” the curriculum to the students’ specific needs, and the VLT captured the concrete results of this adaptation. The engagement data from the LMS corroborates the qualitative findings (see below), showing that students were not just logging in, but actively completing the interactive tasks.

4.2.2 Qualitative Results: The “Why” Behind the Numbers (RQ4)

The thematic analysis of interviews, focus groups, and observations revealed three major themes that explain why the quantitative results were achieved. These themes directly address RQ4 by detailing the perceptions of students and teachers.

4.2.3 Theme 1: Enhanced Motivation and Engagement

One major theme that came through in every single focus group, as well as the teacher interview, was the positive effect that the C-MDT had on motivation and engagement. The students in EG were definitely more awake, involved, and “on task” during classroom observation. The source of this engagement is twofold: Firstly, the Interactivity of the platform was always getting praise. As one student stated in a focus group “I liked the quizzes... you got the score right away. And with the print book you do the exercise and maybe the teacher will check it next week. This is fast. You know whether you’re right or wrong, and you can try again.” This instant, private cycle of feedback, this chance to revise based on your own assessment rather than someone else’s, is an affordance of the digital medium. Second, the Multimodality, especially Videos, was very popular “The videos themselves were fun. “It’s not just read, read, read” a hospitality major student said, you see the problem – the angry hotel guest. you see his face and you hear his voice. “It feels more real”. This statement fully corresponds to the theories about multimedia learning, where the use of visual combined with listening and writing led to an experience that felt both more engaging, more comprehensible, and felt truer to life than before.

4.2.4 Theme 2: Perceived Relevance and Value

This was the most impactful, prominent theme; this was the major engine propelling the engagement that came before. Students finally knew why they were learning English. “the relevance gap” is closed. A student who studies E-commerce said this plainly: “this is useful. My major is e-commerce. I learn ‘place an order’ or ‘address for shipping’. It makes sense. In the old book I read, it was about. I guess it’s like environmental protection. It’s important. but... it’s not for me,” was repeated. C-MDT was rooted in the special corp, it could provide a curriculum for students who were connected to their own vocational identity and their career aspiration. This perceived relevance fostered a virtuous cycle:

relevance bred increased intrinsic motivation, so students engaged even more with the already engaging multimodal material, leading to the better-than-expected learning gauged by the VLT. C-MDT turned English from a “superfluous requirement” into a “helpful tool.”

4.2.5 Theme 3: Pedagogical Adaptability and Teacher Role Shift

EG teacher gives a nuanced, professional take on the pedagogical adjustability of C - MDT. She was “over the moon” about the student engagement saying, This is the first time in my career where I don’t have to fight to get them to participate Load material. ‘They want to do it’ she said...She also commented on how “the C-MDT flipped the classroom in itself” She put the receptive-skills sections (video, vocabulary, listening) on the homework, which the platform analytics showed the students were completing. This left me with valuable class time to do productive things together, like practicing the dialogues and presenting our own scenarios. At the same time, she had valid concerns and issues worth addressing. First was Technology (on the first day, 3 students couldn't log in, and classroom wi-fi was so slow that it killed the video). Digital materials are utterly dependent on solid tech infrastructure and support. The second challenge was a Teacher Role Shift “I changed my role.” I’m not much of a “lecturer” up front, I'm more of a “walker” around the group, helping little groups of students. I had to get used to that. and the tech. had to trust them with doing the HW on the platform. And also, I had to learn how to let go of control. And finally, I noticed that there was this persistent M-A challenge, because, “the textbook was good, but some of my lowest level students had still struggled. They watched the video, but they needed more basic vocab support before the video”. This provides a good jumping-off point for future iterations: making the program adaptive and providing even more support for learners.

4.3 Discussion: An Adaptable and Integrated Model for HVE

After triangulation the findings showed the pedagogical adaptability of C - MDT was high. it adapts itself to the HVE context quite a few, intertwining ways. 1. First, it is Adapt to student needs and goals: replaces irrelevant and non-content-specific EGP with more relevant, career-based and corpus-driven ESP/EOP, which students care about and want to learn; Second, it Adapts to Student Learning Styles and Habits: It moves from one that was static, single text modality to one that is dynamic, multi-modal, interactive which is more fun, cognitively supportive and effective for the varying digital native skills levels. The third is adapting the teaching model itself. C-MDT is both a resource and a pedagogical engine: it is a pedagogical engine because it can help shift from a teacher-centered, “grammar-translation” approach to a student-centered, task-based, flipped classroom approach. The problems posed by the teacher (technology, role shift, mixed-ability), do not indicate failures on the part of the textbook, rather they are important considerations for the successful implementation of the textbook. Pedagogical adaptability is not about the tool. It is about whether the tool + teacher + student + institution fits. This study reveals that fit in this C-MDT model is high, but it needs an institution (good Wi-Fi, teacher training) to get it up and running.

5. Conclusion

5.1 Summary of Key Findings

This study reported on the systematic, theory-grounded development, and mixed methods evaluation of a C-MDT designed for the College English curriculum in Chinese higher vocational colleges. The research gives out some clear and intertwining findings. First, corpus-driven approach is necessary and useful; analyzing the SVC showed that there were major differences between general English and the specific language needed for the vocational setting. I found the keyword, Collocation, and functional chunk that I identified (place order, troubleshoot problem) this provided me with strong empirical data, that helped me create a much more relevant curriculum for my HVE class secondly, the C-MDT is very effective at what it is supposed to be doing: the experimental group using the C-MDT was clearly much better than the control group at a test of vocational language (the VLT), which we can see means the textbook did a good job reaching a specific practical pedagogical goal. And third, the C-MDT does boost engagement and motivation, both the quality and quantity type showed the C-MDT's multi-modal, interactive, and scenario-based design are extremely engaging and simple to use. Fourth, it is about perceived relevance: C-MDT has its strongest feature according to students—that is, directly, face-valid relevance to their future careers, and closing what they call “the relevance gap” to foster intrinsic motivation. And finally, it's pedagogically flexible (C-MDT “fits” the HVE context because it is something students need, making C-MDT part of a modern flipped, learner-centred pedagogy.

5.2 Pedagogical Implications

This has great practical value for higher vocational education. A replicable, data-driven “corpus + multimodality + scaffolded design” model for HVE institutions developing their own high-quality, relevant, and “home-grown” teaching materials can be provided by this study. It offers an eco-friendlier and teaching-wise superior choice when compared to the ongoing dependence on badly-fitted products from the standard academic market. But this kind of material can only be successfully applied if there is the same investment in teachers. Based on what I discovered during my conversation with the teacher, shifting from paper-based to digital and ESP-type materials requires a corresponding shift in pedagogy. Institutions must invest in training teachers who can become both “lecturer” and “facilitator,” who can effectively integrate technology, and who are confident managing a task-based, flipped-classroom environment. This model supports a “bottom-up” curriculum reform as well, in which linguistic data from the corpus influences the syllabus, so that the College English curriculum can really, and concretely, align with the overall career-oriented mission of higher vocational education.

5.3 Limitations of the Study

This study does provide strong positive results, but it is not perfect in every aspect, and these should also be recognized. First, Scale and Generalizability: Due to this being a case study at a single institution, involving a small number of students from one academic school, results may not be immediately generalizable to other HVET colleges in China, who have varying diversities (e.g., agriculture schools, arts, health sciences) and resource levels. Secondly, Corpus Size: as for the corpus

size, the 1.5-million-word corpus was adequate for this research, but a larger and continuously updated national-scale vocational English corpus would be even better. And third, long-term effects: this was just one semester of a 16-week semester. We don't know what impact this will have on the students' ability to actually do stuff, and whether they can use those skills in real jobs, or if they'd still want to do it after a while. And finally, the novelty effect: it could be that the student engagement we're seeing is the "newness" of being able to use the fancy, high-tech technology tool. We need a long time to see if that level of engagement is going to last for a whole lot of other classes.

5.4 Suggestions for Future Research

Based on the above shortcomings, we can go in various directions. First, we need to expand and replicate. The study should also be redone with other kinds of HVE institutions to check if the model works well and can adapt in various vocations. To Expand the Corpus. The creation of an expanded corpus would be ideal, with a larger and more diverse multi-institutional, national-level vocational English corpus being available to all other instructors. This corpus must be longitudinal in nature. Future research should track students throughout their two to three year HVE program and hopefully track them again upon their first year post-graduation to measure transfer in the real world. Finally, with regard to mixed abilities, the teacher's comment refers to an important area for both technical and pedagogical learning: Investigating Adaptive Learning. In terms of future C - MDTs, we could experiment with using AI and adaptive learning technologies to create personalized learning paths that offer more intensive scaffold for lower ability students, and more challenging extension activities for the high flyers. This would truly cater to our mixed-ability classrooms. In conclusion, to some extent, the development of corpus- based multimodal digital textbooks is also a necessity for higher vocational colleges and also a technological necessity. By framing instructions in an authentic language of the workplace and providing them in an attractive, scaffolded, and varied form, it was finally possible to bridge the relevance gap, turning College English from a dreaded requirement to a useful skill in building a great career.

References

- Chen, J. (2025). Research on the Current Situation of Integrating Ideological and Political Education into English Teaching in Higher Vocational Colleges. *English Square*, (21), 63-66. DOI:10.16723/j.cnki.yygc.2025.21.015
- Duan, Y. H. (2024). *Research on English Commentative Clauses Based on Corpus*. Dalian Maritime University. DOI: 10.26989/d.cnki.gdlhu.2024.001590.
- Habo. (2021). The Current Situation of English Teaching in Higher Vocational Colleges and the Innovation of Teaching Methods. *Modern Business Trade Industry*, 42(15), 140-141. DOI:10.19311/j.cnki.1672-3198.2021.15.065.
- Tian, M. (2025). Research on the Difficulties and Breakthrough Paths of Digital Application of English Teaching Materials from the Perspective of Connection between Secondary Vocational Education

- and Higher Education. *Information and Computer*, 37(16), 182-184.
- Wang, H. J. (2024). *A Contrastive Analysis of Lexical Grammar Profiles of Modal Verbs in English Academic Papers Based on Corpus*. Changchun University of Science and Technology, 2024. DOI:10.26977/d.cnki.gccgc.2024.000527.
- Wang, X. Y. (2025). Discussion on the Problems and Countermeasures of English Grammar Teaching in Higher Vocational Colleges. *Path to Success*, (27), 109-112.
- Xin, J. X. (2025). The Ethical Design of Digital Textbooks and Its Practical Approach. *Journal of Educational Research in China*, (09), 44-49.
- Yuan, J. (2023). Investigation on the Current Situation of Specialized English Teaching in Higher Vocational Colleges. *Journal of Chongqing Electronic Engineering College*, 32(02), 110-115. DOI:10.13887/j.cnki.jccee.2023(2).16.
- Zhang, N. (2024). Analysis of Blended Teaching of University English Vocabulary Based on Corpus. *English Square*, (26), 99-103. DOI:10.16723/j.cnki.yygc.2024.26.019
- Zhang, Q. (2025). A Study on Collocations in the Writing of Vocational College English Learners Driven by Corpus. *Overseas English*, (15), 225-228.