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Requirement Survey And Design Approach For An HSK Learning App

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Abstract
Today, the Chinese language is increasingly serving as a vital bridge connecting China with the world, powerfully advancing mutual learning and shared prosperity among diverse civilisations[1]. A global wave of enthusiasm for learning Chinese is now surging. According to a 2023 report by the overseas edition of the People's Daily, over 30 million people worldwide are currently studying Chinese[2]. To better serve the multitude of Chinese language learners, the Confucius Institute Headquarters (Hanban) has organised experts from China and abroad in the fields of Chinese language teaching, linguistics, psychology, and educational measurement. Building upon thorough investigations into the actual conditions of overseas Chinese language teaching, and drawing upon the latest achievements in international language testing research in recent years, such as the International Chinese Language Proficiency Standards and the Common European Framework of Reference for Languages (CEFR), Hanban has launched the new Chinese Proficiency Test, namely the HSK examination[3]. Considering the learning needs of Chinese learners and the constraints faced by some learners due to physical and natural environmental conditions, while also integrating the development of contemporary scientific information technologies such as the internet and multimedia, this research plans to develop a comprehensive Chinese learning application tailored for the HSK examination. This application is named the 'YuLu' Chinese Learning App (hereinafter referred to as the 'YuLu App'). This research will first conduct a questionnaire survey among university student users, analysing their learning foundations, needs, and usage intentions. Based on these findings, four core modules will be designed: interface layout, learning functions, community interaction, and settings feedback. The aim is to provide diverse, personalised learning services to assist learners in achieving their HSK level objectives. Following the completion of the overall design, this research will conduct a systematic and comprehensive analysis of the Language Path App, with ongoing refinement and iteration. The goal is to meet learners' fundamental needs for passing the HSK examination while simultaneously stimulating their enthusiasm for independent Chinese language learning, thereby promoting the widespread dissemination, friendly exchange, and deep integration of international Chinese language education.

Keywords: *HSK; HSK learning app; questionnaire survey; app design*

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I. Introduction

Research Background and Significance

Research Background

In recent years, the trend of learning and using Chinese has continued to gain momentum overseas. Data shows that since its inception, the number of candidates taking the Chinese Proficiency Test (HSK) has grown at an average annual rate of 20%, with over 810,000 candidates worldwide participating in 2024. As of September 2024, 85 countries have incorporated Chinese into their national education systems, with the cumulative number of international Chinese learners and users exceeding 200 million[4]. Faced with such a vast HSK learner base, traditional teaching methods are increasingly struggling to meet demand. According to 2018 statistics, the global shortage of Chinese language teachers exceeded 5 million[5]. International Chinese language education faces multiple challenges: its short history and weak foundation, an incomplete standard system, insufficient localization, inadequate teacher training, relatively outdated teaching content, the normalization of the COVID-19 pandemic, and the risk of politicization in some countries[6]. These factors make it difficult to meet the needs of HSK learners. Addressing this phenomenon, and leveraging China's emerging collaborative innovation system centered on technology-driven enterprises, research institutions, and universities[7], alongside rapid advancements in multimedia, internet, and artificial intelligence technologies, this study aims to design an app that supports HSK learners' post-class studies. This app will assist learners in achieving their personal goals while simultaneously promoting the dissemination, exchange, and development of international Chinese language education.

Research Significance

At the individual level, by analyzing the learning needs of HSK learners through surveys and designing a personalized HSK learning app tailored to these needs, we help them improve learning efficiency, pass the HSK exam, and ignite their passion for learning Chinese. The HSK learning app supports learners in post-class practice or self-directed study, effectively reducing teaching workload and enhancing instructional efficiency. For regions and individuals lacking access to professional, systematic instruction, the app bridges learning gaps.

At the societal level, Minister of Education Huai Jinpeng emphasized the need to implement an AI empowerment initiative, promoting the deep integration of intelligent technologies with education, teaching, and scientific research[8]. The HSK Learning App aligns with the era of social informatization, achieving deep integration between online education and international Chinese language learning. It builds a unified online teaching database and creates a digital platform where learners can interact and progress together.

At the national level, the HSK Learning App serves national strategies by supporting the “Chinese Plus” Action Plan[9]. It enhances cultural soft power, promotes international cultural exchange, strengthens China's capacity to disseminate its language and culture, accelerates the modernization of international Chinese language education, and benefits learners worldwide.

II. Survey On HSK Learning App Requirements

Survey Questionnaire Design

Survey purpose

Understand the acceptance levels of HSK learners across different genders, educational backgrounds, and HSK proficiency levels toward HSK learning apps, as well as their needs regarding the app's functionality, design, and communication features.

Survey participants

Universities serve as the primary gathering places for HSK learners. This study conducted a centralized survey of HSK learners in Zhejiang Province through the distribution of online questionnaires.

Investigation approach

The questionnaire consists of 11 questions, divided into three types: single-choice, multiple-choice, and open-ended questions.

Questions 1-4: Single-choice questions gather respondents' personal information, including gender, educational background, HSK exam participation history, and current HSK proficiency level.

Question 5: Single-choice question, gathers respondents' views on key HSK content areas to identify common weaknesses.

Questions 6-10: Multiple-choice questions, assess respondents' foundational knowledge, usage needs, effectiveness, and willingness to use an HSK learning app, informing its design approach.

Question 11: Open-ended question, collects suggestions for various aspects of the HSK learning app design, with reasonable requests to be considered for implementation.

Survey results

Question 1: What is your gender?

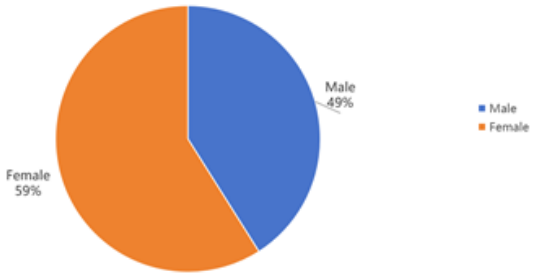

Figure 2-1: What is your gender?

Considering that different genders may have varying needs for product design, this questionnaire includes a gender question. As shown in Figure 2-1, female respondents accounted for 59% of this survey, slightly exceeding the 41% of male respondents.

Question 2: What is your educational background?

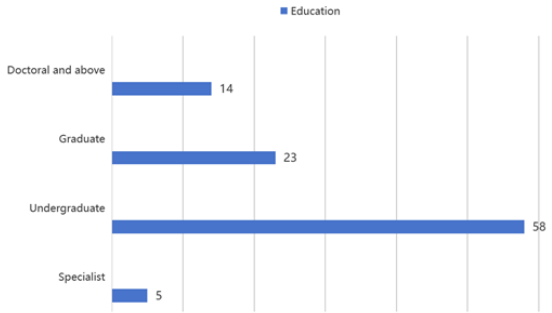

Figure 2-2: What is your educational background?

Learners with different educational backgrounds have distinct learning stages and needs. As shown in Figure 2-2, there are 58 undergraduate learners, while those with associate degrees and doctoral degrees or higher are the smallest group at 19. Learners with master's degrees number 23, placing them in the middle range.

Question 3: Which level of HSK exam do you plan to take?

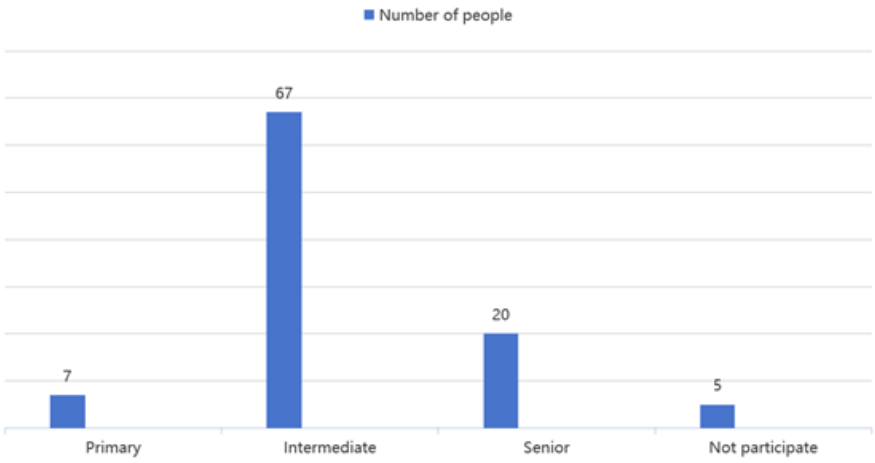

Figure 2-3: Which level of HSK exam are you preparing to take?

Figure 2-3 data shows that 7 individuals plan to take the Basic Level HSK exam, 67 plan to take the Intermediate Level HSK exam, and 20 plan to take the Advanced Level HSK exam. The Intermediate Level exam has the highest number of participants, while 5 individuals do not plan to take the HSK exam at all.

Question 4: Which module do you consider the most important in the HSK exam?

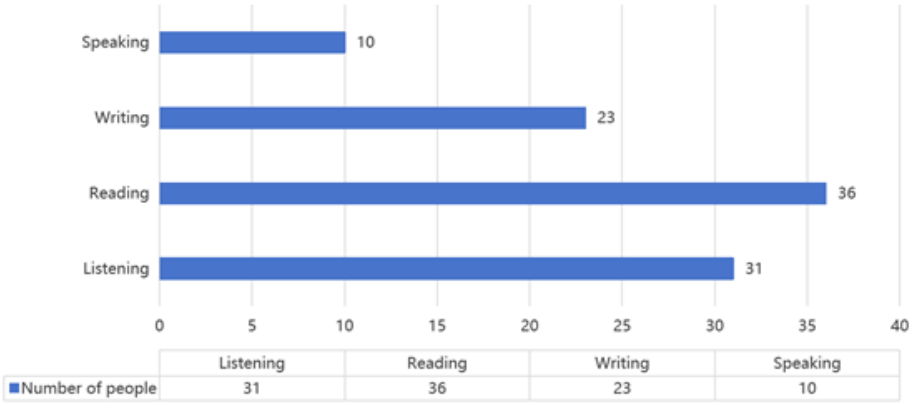

Figure 2-4: Which module do you consider important in the HSK exam?

Based on the data in Figure 2-4 and a cross-analysis of the data from Questions 3 and 4, it was found that most learners preparing for the Intermediate HSK exam place greater emphasis on the writing module. Learners preparing for the Basic HSK exam consider listening comprehension to be the most important section, while those preparing for the Advanced HSK exam place relatively greater emphasis on reading and speaking.

Question 5: Have you used HSK learning apps (e.g., HelloChinese) to study Chinese?

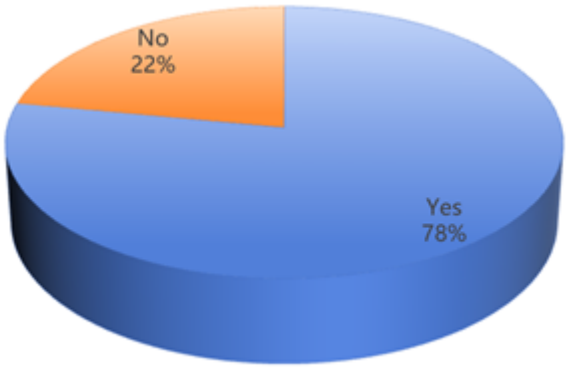

Figure 2-5: Have you used the HSK Learning App to study Chinese?

As shown in Figure 2-5, approximately 78% of learners have used the HSK learning app, while only 22% have not.

Question 6: What aspect of the HSK learning app's design do you like the most?

Figure 2-6: What aspect of the HSK learning app's design do you like best?

Figure 2-6 shows that 50 respondents found the learning features of the HSK study app to be robust, while 26 preferred its community interaction section. Additionally, 24 respondents appreciated the app's interface layout and settings feedback functionality.

Question 7: Which aspects of the HSK study app's learning features do you find most helpful?

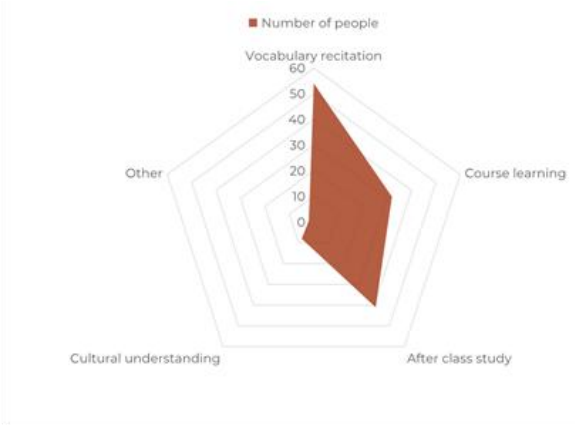

Figure 2-7: Which aspects of the HSK learning app's study features do you find most helpful?

The survey found that 54 respondents considered the vocabulary check-in feature of the HSK learning app most helpful, 32 preferred the course learning function, and 44 gained benefits from the post-class exercises. Only 7 learners selected cultural understanding and other options.

Question 8: What aspects of the HSK learning app's design do you consider lacking?

Table 2-8: What aspects of the HSK learning app's design do you consider lacking?

Option	Number of people	Proportion（%）
Lack of professionalism	15	15%
Lack of interest	32	32%
Insufficient interface design	18	18%
Insufficient cultural depth	48	48%
Other	5	5%

According to Table 2-8, approximately 15 respondents felt the HSK learning app lacked professional design, while 32 found it insufficiently engaging. Additionally, 48 users reported inadequate cultural depth, and 23 learners disapproved of the app's interface and other design elements.

Question 9: Which of the following payment models would you accept?

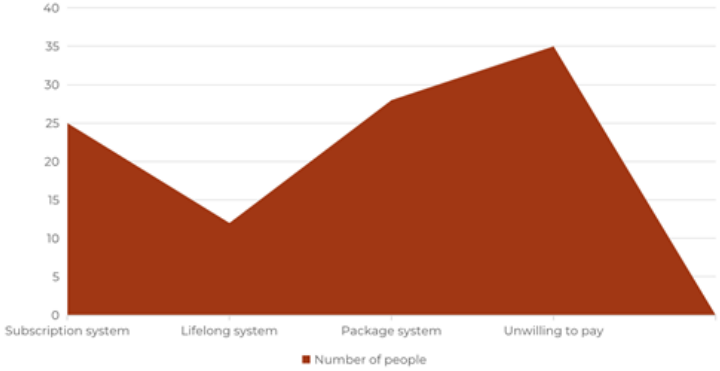

Figure 2-9: Which of the following fee models would you be willing to accept?

Figure 2-9 data shows that 25 people are willing to accept a subscription membership plan, only 12 learners are willing to try a lifetime membership plan, and 28 prefer a flexible package membership plan. Additionally, a significant portion of learners are unwilling to pay, totaling 35 people.

Question 10: If there were a brand-new HSK learning app, would you be willing to try it?

Table 2-10: If there were a brand-new HSK learning app, would you be willing to try it?

Option (points)	10	9	8	7	6	5	4	3	2	1
Number of people	39	17	14	3	5	12	4	4	2	6

According to the data in Table 2-10, 78 learners scored above 5 points and expressed a willingness to try a brand-new HSK learning app, with 39 of them giving it a perfect score of 10. Only 28 learners were reluctant to try it, and 6 even gave it a score of 1.

Question 11: If you were to develop a Chinese learning app now, what suggestions would you offer?

Figure 2-11: Keyword Cloud of Suggestions for Developing Chinese Learning Apps

Analysis of the keyword cloud reveals that "free," "professional," "fun," "multi-functional," and 'community' appear most frequently. Following these are "efficient," "aesthetic," "mock exams," and "personalized." Other keywords appearing less frequently include "videos," "games," "one-on-one," "Chinese culture," "aesthetic," "efficient," "answer explanations," and "practice with real exam questions."

III. Design Concepts For HSK Learning Apps

Overall Design Concept

The YuLu app logo features a winding road traversing the globe, inscribed with the seal script characters for “YuLu” symbolizing Chinese as the pathway to the world. The app's overall color scheme combines sandalwood brown with off-white, evoking an antique Chinese aesthetic. Headings use bold regular script while body text employs regular regular script—both fonts convey the charm of Chinese calligraphy while remaining dignified and eye-catching.

Figure 3-1: YuLu App Design Logo

Specific Design Approach

Interface Layout Design

On the main interface, we placed a quick search bar at the top for learners to swiftly search for new words and phrases. Below the quick bar is the daily vocabulary check-in section—tapping it allows users to check in. Upon successful check-in, a gold coin pop-up animation appears, rewarding learners with study coins. Below the quick bar, content sections scroll vertically from top to bottom: Vocabulary Memorization, Course Learning, Practice Tests, and Mock Exams. Tapping any section initiates learning. Completing daily tasks earns learning coins, redeemable in the community for avatar customization rewards, name change vouchers, workbooks, and more.

The central section of the bottom navigation bar features the main interface logo and the word “Study.” To the left is the community logo and the word “Community,” while to the right is the settings logo and the word “Settings.” The logo designs are clean and aesthetically pleasing.

Learning Function Design

The vocabulary memorization feature is designed based on a principle of the Ebbinghaus forgetting curve: “The forgetting process is uneven, with a rate that is ‘rapid at first and then slows down’”[10]. It is divided into four learning stages: The first stage is the review session, where words learned the previous day are reviewed. If multiple days pass without review, the words accumulate for later review. The review process follows the same learning flow as the subsequent three stages. Stage Two presents four aspects of learning: pronunciation, meaning, example sentences or idioms, and antonyms or synonyms for each Chinese character or word. Learners can select their preferred dictionary and choose to study 5 to 30 words per day. If encountering a word they already know well, they can click the trash can icon in the bottom left corner, and that word will no longer

appear in future reviews. If a word is deemed important, clicking the star button next to the trash can adds it to the priority list for focused review later. The third stage features either multiple-choice exercises where learners select the correct Chinese character for a given meaning, or vice versa, with distractors included in the options. After three incorrect attempts, the word is automatically added to the error log for targeted practice. Stage 4 features spelling exercises where you write the corresponding Chinese character based on its pronunciation. AI scoring evaluates both handwriting and accuracy.

Course learning functions provide lessons categorized by type: Listening, Reading, Grammar, Writing, Speaking, Comprehensive, and One-on-One. One-on-one lessons require a paid subscription membership at 30 RMB per month, with one free trial session available. All other courses are free. These sessions feature recorded lectures and exam guidance from professional international Chinese teachers, covering HSK exam key points, difficult areas, and test-taking strategies.

The practice test feature provides challenging questions from past HSK exams. After answering, learners immediately see the correct answer and explanation. If an answer or explanation is found to be incorrect, learners can click the “Feedback” button at the bottom to explain their reasoning. The feedback will be reviewed and modified by the backend team, with a response provided within seven days via the feedback feature. If the feedback is confirmed correct, the learner will receive a reward of study coins.

The Mock Exam feature randomly generates test papers from the question bank, strictly simulating HSK exam timing with a countdown displayed in the upper right corner. Learners cannot exit mid-exam or use split-screen mode. After completion, AI scoring is provided, and learners can review questions and explanations. The feedback process described above applies to these reviews.

Community Interaction Design

The community interaction feature comprises three sections:

The top section features a search bar where learners can freely enter keywords. The system recommends topics based on relevance to the keywords. Clicking a topic displays learning and cultural shares posted by other learners, which can be liked, commented on, reposted, or followed. Learners may also post their own learning culture shares. If a post receives a certain number of likes, comments, shares, and followers, it may be selected as a “Quality Share.” Such shares will be featured in the “System Recommendations” section below the search bar and earn the learner Learning Coins for redemption rewards. Additionally, the system will publish content such as philosophical ideas, classical poetry, and historical stories to promote cultural awareness.

Settings Feedback Design

The Settings feedback interface displays the following sections from top to bottom: Personal Account & Security, Learning Coins, Learning Notifications, Community Settings, Issue Feedback, Check for Updates, Policy Agreements. Personal Account & Security allows password changes, phone number binding, email binding, device login history checks, account freezing, account deletion, account switching, and logout. Learning Coins lets users check their balance and redeem rewards. Learning Notifications lets users choose whether to receive system reminders for daily check-ins, course start notifications, and membership expiration alerts. Community Settings allows users to choose whether to receive likes, comments, shares, follows, and replies, manage blacklists, and configure blocked words; Issue Feedback enables users to submit questions and suggestions, with system customer service responding and offering Learning Coin rewards if accepted; Check for Updates detects whether the app is the latest version; Policy Agreements allows users to view the User

Agreement, Privacy Policy, Personal Information Collection List, Third-Party Shared Personal Information List, and other usage agreements agreed upon with the app.

IV. Conclusion

Research Summary

This study employed a questionnaire survey to identify potential users of HSK learning apps among college students. It collected and analyzed their personal information, usage intentions, and learning needs. Based on these findings, an HSK learning app was designed to meet the requirements of most respondents across four key areas: interface layout, learning functions, community interaction, and settings feedback.

Research Limitations and Future Prospects

The questionnaire survey focused on university students at intermediate to lower HSK proficiency levels, lacking representation from advanced HSK learners or younger learners with lower educational backgrounds. Consequently, the sample may not be comprehensive. Due to funding constraints, the HSK learning app developed in this study could not match the performance of commercially available Chinese learning apps. Limitations included small server capacity, which led to frequent lagging and crashes, insufficient graphic resources, and a limited professional knowledge base. These factors hindered the achievement of ideal results. Continuous improvements in design and development techniques are necessary to provide HSK learners with more comprehensive and personalized services.

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References

[1] Beijing Youth Daily. Representatives From Education Sectors Around The World:“Chinese Language Boom” Bridges Com munication And Prosperity For The World [EB/OL]. (2025-11-18)[2025.12.26].Https://Baijiahao.Baidu.Com/S?Id=184910637 3712508704&Wfr=Spider&For=Pc

[2] The Paper. " Chinese Language Boom Resurges: Which Nationalities Love Learning Chinese Most?" [EB/OL] (2025-01-2 1) [2025.12.26]. Https://Baijiahao.Baidu.Com/S?Id=1821858331306934824&Wfr=Spider&For=Pc

[3] Confucius Institute Headquarters/Hanban. Introduction To The New HSK Test[EB/OL].(2009-10-16)[2025.11.17].Https://Ww w.Chinesetest.Cn/Userfiles/File/Dagang/HSK4.Pdf

[4] Xie Binbin. “Chinese Language Boom Reflects China Boom” [N]. Xinhua Daily Telegraph, 2025-06-09(006). DOI:10.288 70/N.Cnki.Nxhmr.2025.005157.

[5] Foreign Language Teaching And Research Press. Global Shortage Of Chinese Language Teachers Exceeds 5 Million: No w Is The Time To Pursue A Master's In Chinese Language Education At Beijing Foreign Studies University [EB/OL]. (2 018-06-07) [2025.11.17]. Https://Www.Fltrp.Com/C/2018-06-07/493243.Shtml

[6] Ministry Of Education Of The People's Republic Of China. Letter Responding To Proposal No. 2624 (Education Categor y No. 091) From The Fourth Session Of The 13th National Committee Of The Chinese People's Political Consultative C onference [EB/OL]. (2021-11-04)[2025.12.26].Http://Www.Moe.Gov.Cn/Jyb_Xxgk/Xxgk_Jyta/Yuhe/202111/T20211104_577702.

Html

[7] Xinhua News Agency. Accelerating Progress Toward A Science And Technology Powerhouse—A Review Of China's Scientific And Technological Development Over 75 Years Since The Founding Of New China [EB/OL]. (2024-09-11) [2025.12.26]. Https://Www.Gov.Cn/Yaowen/Liebiao/202409/Content_6973831.Htm

[8] Red Star News. Minister Of Education: Implementing AI Empowerment Initiative To Deepen Integration Of Intelligent Technologies With Education, Teaching, And Scientific Research [EB/OL]. (2024-02-01) [2025.12.26]. Http://Www.Moe.Gov.Cn/Jyb_Xwfb/Xw_Zt/Moe_357/2024/2024_Zt02/Mtbd/202402/T20240202_1114004.Html

[9] China-Foreign Language Exchange And Cooperation Center. International Online Chinese Education Action Plan (2021-2025) [EB/OL]. (2022-1-25) [2025.10.30]. Https://Www.Chinese.Cn/Uploads/File/20220125-1643091053961452.Pdf

[10] Peng Wei. Application Of Ebbinghaus's Forgetting Curve In Vocabulary Teaching For Vocational English [C]//Sichuan Provincial Association Of Science, Education, And Innovation Makers. Proceedings Of The 2021 Academic Symposiumon Science And Education Innovation (Part II). Hunan Industry And Trade Technician College;, 2021:184-185. DOI:10.26914/C.Cnkihy.2021.007029.