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Scientific and Social Research

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Experimental Research on Introducing Skills Competition-Based Content into Classroom Teaching

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Abstract: The goal of talent training in vocational education is to deliver skilled talents to the society. Skills competitions act as a platform for students to showcase their abilities. In this paper, skills competition-related content was incorporated into the teaching of the Engineering Mechanics course. The teaching experiment was carried out in a class of 40 students and the teaching quality was evaluated in the form of questionnaires. The results show that skills competitions can draw students' attention and improve the quality of education. Therefore, more skills competitions should be organized to improve teaching quality.

Keywords: Skills competition; Experimental research; Teaching; Vocational colleges

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1. Introduction

Vocational education is an important component in China's modern education system. In recent decades, vocational education has delivered countless skilled talents to all sectors of society, which has strongly supported the rapid development of economy. In the context of industrial transformation and upgrading, the demand for skilled talents in various industries is increasing, thus increasing the importance of vocational education. Vocational education aims to nurture high-quality skilled talents. Therefore, the students' practical and hands-on ability is very important. They are not only the necessary skills for enterprise jobs, but also the focus of talent training of vocational education. Various skills competitions are not only an important complement to classroom teaching, but also an important platform for students to improve their hands-on skills ^[1]. The Chinese government attaches great importance to various skills competitions. In 2022, the government amended the Vocational Education Law, which emphasizes the role of skills competition. The law requires vocational colleges to "continue cultivating more high-quality skilled personnel through various skills competitions" ^[2-3].

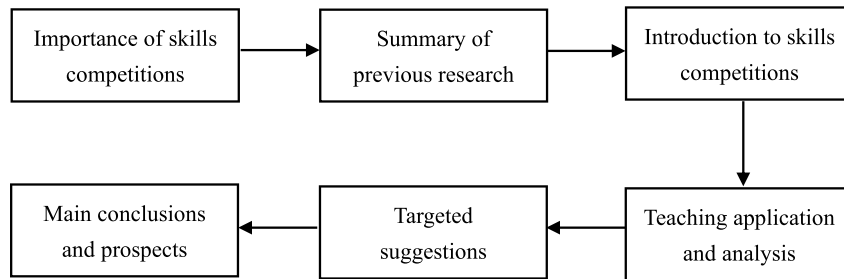


Figure 1. The research logic diagram of this paper. Source: Original figure

In what ways can skills competitions improve the quality of vocational education personnel training? This issue has become a hot topic among scholars. Therefore, this paper attempts to expound on this topic. The research logic of this paper is shown in **Figure 1**. Firstly, this paper explains the importance of skills competition for vocational education personnel training. Secondly, the results of relevant research are reviewed. Thirdly, a typical skills competition entry is introduced. Fourthly, the entry is applied to the classroom teaching of Engineering Mechanics. Fifthly, questionnaires are administered to assess the quality of teaching. Finally, the main conclusions and prospects are summarized.

2. Research status

Scholars have carried out research in different fields. Japanese scholar Wan ^[4] used a big data approach to investigate the intrinsic relationship between vocational skills and these findings can provide a theoretical basis for other vocational skills research fields. Maia ^[5], a British scholar, believes that skills competitions can improve the attractiveness of vocational education. He conducted 110 interviews with contestants of a skills competition. Based on these data, he analyzed the potential contribution of skills competitions in revitalizing British vocational education. Scholar Zheng ^[6] explained the importance of cultivating applied senior talents from the perspective of the rapid development of the sports market and analyzed the relationship between vocational skills competitions and the cultivation of applied talents. She designed a new system for cultivating applied talents based on skills competition, which provides a reference for cultivating applied talents in sports economy management. Scholar Li ^[7] analyzed the importance of the “tiered ladder” training mechanism in the context of vocational skills competition, taking the secondary-level electronics students as the research object. Wang ^[8] believes that the construction of training bases in vocational colleges should fully consider the needs of skills competitions. Zhu ^[9] believes that the important indicators of talent training in higher vocational education are skill level and practical ability. The vocational skills competition rules reflect the latest demand of the industry and enterprises for highly skilled talents. Scholar Li ^[10] believes that skills competitions are the propellers of the reform and development of vocational education and can promote the teaching reform of higher vocational colleges. He discussed the advantages of vocational skills competition in terms of professional curriculum teaching, quality of teachers, training base construction, and many more. Di ^[11] believes vocational skills competitions have a positive impact on the teaching of vocational colleges. He found that the vocational skills competition can effectively improve students’ innovative ability and practical skills. Scholar Gong ^[12] summarized the positive effect of nursing skills competition on the teaching of nursing in vocational colleges. He believes that skills competition is conducive to optimizing talent training programs and promoting the reform of teaching models and methods.

The scholars mentioned above have studied the skills competition from different majors and fields. These studies all show that various skills competitions have played a positive role in improving the quality of talent training in vocational colleges. However, there is a lack of cases in which the content of skills

contest works is applied to classroom teaching. This article has carried on the related research work.

3. Case analysis

3.1. Introduction to entries

To participate in an innovative design competition, a few students formed a team and designed a finite element model to test the bending data of a beam.

The traditional test method is shown in **Figure 2**. The base was first fixed, a section of the beam was then fixed to the base, while another section of the beam was in contact with the indenter. Under the action of motor or hydraulic press, the indenter exerts a downward force (in the negative direction of Y-axis). Several strain gauges (as indicated in **Figure 2**) were attached to the upper surface of the beam to measure the stress in different areas.

The traditional experimental scheme has obvious disadvantages. For example, it is time-consuming, has limited data (depending on the number of strain gauges), and has some risks. The students designed a finite element model to simulate the bending experiment. The geometric dimensions of the finite element model are consistent with **Figure 2**. The base and indenter are designed as an immutable shape in the model. The beam is made of aluminum alloy. The length of the beam is $Z = 300$ mm. The width of the beam is $X = 20$ mm and its height is $Y = 10$ mm. The distance between the indenter and the base in the Z-axis direction is $Z_1 = 290$ mm. The finite element model is shown in **Figure 3**. Different colors represent different displacement sizes (the redder the color, the greater the U3 value). According to the stress nephogram, students can easily understand the stress distribution of the beams under external forces.

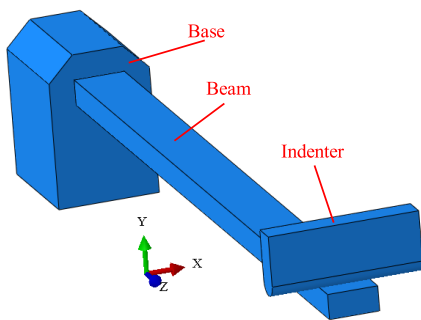


Figure 2. Geometric model of beam bending experiment. Source: Original figure

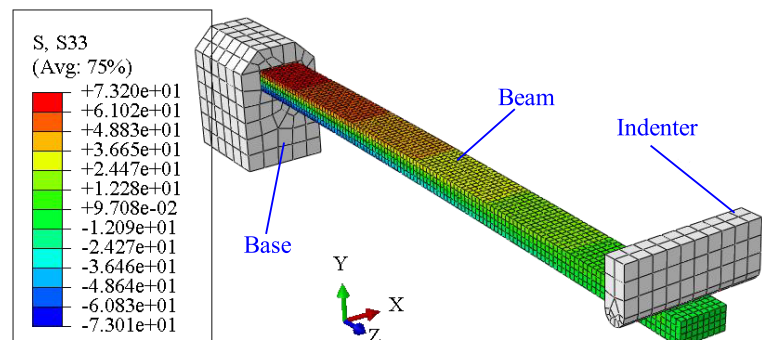


Figure 3. Finite element model with 100 N load. Source: Original figure

3.2. Teaching materials

The model was simulated on a computer and relevant nephograms were obtained. Some simulation materials will be applied to teaching. In order to study the stress law at different positions, 20 special nodes were selected on the upper surface of the beam, as shown in **Figure 4**. The S33 stress data of these nodes are called in the ODB (Open Date Base) of the finite element model and a statistical analysis was carried out, as shown in **Figure 5**.

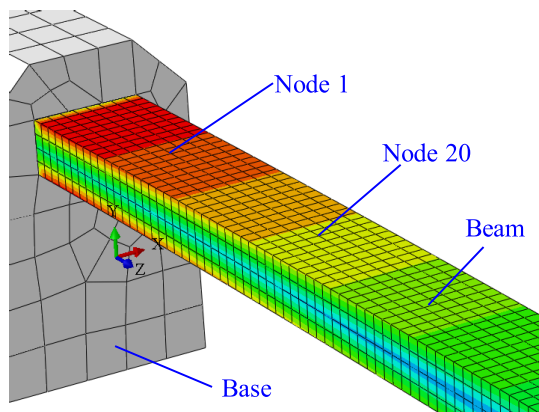


Figure 4. Selection of special nodes on the model. Source: Original figure

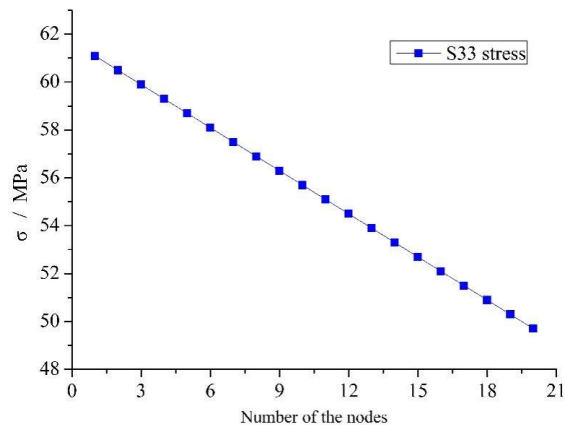


Figure 5. S33 Stress analysis of the special nodes. Source: Original figure

It can be seen from **Figure 5** that the further the node is from the base, the smaller the stress value. The law of change is approximately linear. This is consistent with the experimental data. However, it is clear that more data can be obtained by using the finite element method. In addition, it is easier for students to understand the method of representing the numerical difference of stress by different colors. These visual materials will be used in teaching experiments.

4. Teaching experiment

The teaching resources were planned in detail. The subjects were a class of 40, including 6 girls. The detailed teaching practice is as follows:

- (1) The deformation and stress of beam under external force were reviewed.
- (2) The teaching objectives were outlined. This course is about the solution of the stress law in different places on the beam.
- (3) An example of an automobile crash simulation was presented on the projection screen.
- (4) During the demonstration, the teacher explained to the students the meaning of the different colors in the diagram. Afterwards, the teacher asked the students: “Would you like to look at the simulated results of the beam being deformed by external forces?”
- (5) Von-Mises stress nephogram was demonstrated in class. Then, the teacher asked: “Are the stress values of different regions equal? Why is it different?”
- (6) Students were required to read the textbook and understand the content of the animation by using the formula in the textbook.
- (7) The teacher encouraged students to speak on the platform and use what they have learned to prove their conclusions. The teacher encouraged the students to express their views bravely.
- (8) A few students commented on the presentation. The teacher then complimented the speaker and then encouraged the other students to comment on the content of the speaker.
- (9) The students’ discussion was analyzed and concluded by the teachers.
- (10) The teacher then carried out a detailed analysis of the function of stress and load
- (11) Based on the stress nephograph, the teacher explained to the students the traditional mathematical solution. Students were then encouraged to refer to the textbook to fully understand the equations used to solve the problem.

- (12) The teacher presented the results calculated using the traditional method. The teachers then asked the students to observe and determine if the results of the traditional calculation and the simulation were identical.
- (13) The teacher posed the question: “How come the two calculations are slightly different?” This will be the students’ after-class assignment.
- (14) The class ended

5. Teaching evaluation

A questionnaire was distributed to all 40 students in the class. All questionnaires collected were valid. There were five questions in the questionnaire (Q1–Q5).

Q1: Do you think this class is more interesting than the traditional class?

Q2: Do you still remember the general shape of the Mises stress nephogram?

Q3: Did the visualization material obtained by simulation help you better understand the mathematical calculation process?

Q4: Have your knowledge regarding this topic been consolidated through this lesson?

Q5: Have the material obtained by simulation helped you with your test scores?

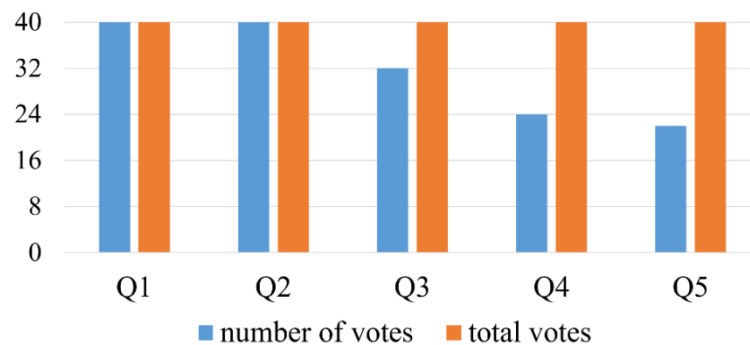


Figure 6. Questionnaire for students. Source: Original figure

The statistical data is shown in **Figure 6**. The “number of votes” bar refers to the number of “yes” votes. All the 40 students answered “yes” to Q1 and Q2. This shows that the skills competition works can enhance the students’ interest in learning and enable them to master the content they have learned more firmly. There are 32 “yes” votes for Q3, which showed that most students recognized visual teaching materials. However, the number of students that voted “yes” for Q4 is 24, accounting for 60.0%. Q5 received only 22 “yes” votes, accounting for 55.0%. Some students who voted “no” for Q4 and Q5 believed that Engineering Mechanics is very difficult to learn. There is no denying that these digital materials can help them more intuitively understand the laws of deformation of the support beam. However, these materials have little effect on test scores, effort during classes and after classes is still more important in order to get good grades.

6. Conclusions

Skills competitions act as a platform for students to showcase their abilities, as well as a rich source of materials for classroom teaching content. This paper creatively included skills competition as part of the teaching content of Engineering Mechanics and conducted a teaching experiment. The teaching quality was evaluated by questionnaire. The results show that skills competition-related content can draw students’ attention and significantly improve teaching quality.

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Disclosure statement

The authors declare no conflict of interest.

Author contributions

S.W. and F.P. conceived the idea of the study and wrote the first draft of the paper. X.W. revised the format of the article.

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Study on the Discursive Strategies of *Wired* to Repair Trust in Blockchain

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Abstract: Digital trust involves not only human trust mediated by certain technology but trust in that technology. However, emerging technologies confront ever-growing skepticism. The blockchain debate is a typical example which may be led by its hype from the mass media. If the place where blockchain is hyped is the place where the damaged trust in blockchain is repaired, *Wired* magazine, the voice of the industry, is an appropriate third-party repairer. Though previous studies have deeply investigated trust repair in interpersonal relationships, much remains unknown about how to measure trust in a specific technology and how to repair it if it is violated. This study aims to examine how *Wired* discursively repair trust in blockchain. To address the issue, 60 *Wired* stories on blockchain are collected as the corpus data. The corpus is annotated with the help of UAM CorpusTool. A discourse analysis is performed based on the annotation. Unlike the studies on interpersonal trust repair, the results show that the magazine puts more efforts on repairing the functionality and the helpfulness of blockchain partly due to the contextual variables. The discourse of the magazine, sitting on the rational side of trust, features open, objective, and straightforward. Together with the research standpoint of a third-party repairer, the repairing effect of trust-in-tech seems to be more predictable. The reparative strategies of EP & NN could be interpreted as a kind of justification to explain the violations of trust in blockchain, which the magazine mainly attributes to those externally unstable and uncontrollable factors. Above all, blockchain is a technological innovation with the aim to build a trustless world, but meanwhile, its development requires the escort from cyber-resilience which is built on the netizens' digital trust.

Keywords: Trust repair; Trust in a specific technology; Third-party evaluation; Blockchain; *Wired*

Online publication: February 28, 2023

1. Introduction

Compared with the optimism of technique worship in the past, emerging technologies are confronted with ever-growing skepticism. The mass media tend to be techno phobic and sometimes exaggerates the potential risks, and the public often form opinions and attitudes without scientifically or authoritatively pertinent information. Furthermore, to dispel the mystification of the emerging technologies is usually beyond the reach of amateurs. The issue of trust is thus the weak link of the technology industry. Though previous research has discussed the effect of trust repair attempts in interpersonal relationships ^[1], much remains unknown about the outcomes of reparative strategies when it is administrated by cyber network system. The disputable trustless mechanism of blockchain technology is an example of digital trust issues to name. The advocates consider it as the driver of future digital economy ^[2], but its decentralized feature ^[3] makes it also possible for criminals to use it for illegal purposes. Concerns about cybersecurity ^[4] hereby rise. More importantly, some empirical research has proved that the nontechnical drivers are the real

obstacles for its current low adoption rate ^[5]. In the long run, the technology industry has to deal with their users' damaged trust in a specific technology. As mass media is the place where blockchain has been misrepresented, and it should be the place where the people's distrust in that technology is going to be repaired. *Wired*, the voice of the technology industry, is at the forefront of reporting blockchain, serving as an appropriate third-party ^[6] to tackle the problem. However, previous linguistic research on trust repair mainly focuses on interpersonal trust, but seldom steps into the field of trust between human and technology. Therefore, this study aims to examine how *Wired* discursively repair trust in blockchain.

2. Literature review

A clear divergence of what exactly trust is exists across disciplines because trust has long been an issue concerned by scholars of various fields. Trust is also a complicated phenomenon that has been classified into many types in different research backgrounds. Trust within social context often refers to interpersonal trust and existing literature mainly differentiates initial trust from experiential trust since a trust relationship evolves. From management point of view, trust is the lubricant of interpersonal relationship and the important foundation of cooperation ^[7]. However, violation of trust seems to be unavoidable, trust repair is of great necessity then through basically either verbal (e.g., make an apology) or behavioral (e.g., make a compensation) strategies.

2.1. Interpersonal trust repair discourse

The action of trust repair could not be taken only by the trustee ^[8], but the trustor or both of them, suggesting three research standpoints. Among them, the standpoint of the violator is criticized for the lack of innovation on reparative strategies and the ignorance of realistic factors. Notably, the standpoint of third-party evaluation starts to prevail in the field. The theoretical mechanism of trust repair tends to be grounded on the attribution theory ^[9], the perceived equity theory or the theory of social risk, schematically presented in trust-related models. Reparative strategies like apology, denial, and explanation ^[10] draw attention if compared to those models, but the effect of trust repair is universally controversial since it is affected by various measurable and non-measurable factors ^[11] namely, emotion, time span, interpersonal relation, attribution of violation, and so on. There are also no approbatory criteria within a discipline or relatively mature approaches to consult partly because of different research methods.

Linguistic studies on the topic are still underdeveloped, but some of them believe that language plays a role in building and maintaining and sometimes undermining a trustworthy relationship ^[12]. It is feasible to construct trust as discourse ^[13] when ideational concepts of trust are concerned. The model of trust repair discourse ^[14], developed from the casual attribution model of trust repair, demonstrates how the damaged interpersonal trust is repaired through the discursively reparative strategies of “emphasize the positive and neutralize the negative” (EP & NN) from the dimensions of literature-grounded trusting beliefs of “ability, integrity and benevolence” (AIB) ^[15]. However, the adaptability of the model is questioned for it is developed from a particular text. Firstly, trust violation does not equate to or necessarily lead to trust crisis, but relevant studies seem to prefer the background of a palpable crisis. Therefore, similar research seldom probes trust repair in the background of a potential crisis. Secondly, the model lacks consideration of discourse purpose: it is inappropriate to construct AIB as discourse effects as they are not decided only by the speaker ^[16]. Thirdly, EP & NN are too general when applied in specific contexts, and they fail to manage emotion that is an important base for interpersonal trust repair ^[17]. Although various modifications to the model are made in order to make up for the one-sidedness of previous research, trust between individuals or groups, especially its emotional side, is still the focal point in the complex social intercourse.

In fact, the rational side of trust plays a role in such reparative behaviors and the trust relationships do not confine to the human-human pattern. People do place their trust on non-human entities in daily life.

With the overwhelming popularity of technological usage in society, a critical examination of the human-technology trust relationship is ever more worthwhile. Considering the human factors inherited in trust, a shift to trust in a specific technology does not surpass the research paradigm of interpersonal trust, but expands its application, and might weakens the flaws of the model by changing the trustee.

2.2. Trust in blockchain

“Trust in a specific technology” (trust-in-tech)^[18] means “treat technology as trustee”^[19] in a digital world. It is neither unreasonable nor uncommon because people talk about trust in non-human entities in everyday discourse. Previous studies on interpersonal trust repair can serve as the starting place for exploring trust-in-tech, and relevant research questions like what constitutes and how to measure trust-in-tech are helpful to draw up a general picture of the dynamic circulation of the human-technology trust relationship. The answer to those questions lays a foundation for research on both the violation and the repair of trust-in-tech. Specifically, the system-like trusting beliefs of “functionality, reliability, and helpfulness” (FRH)^[20], corresponded to human-like trusting beliefs of AIB, are proposed to account for some of the complexities of building and maintaining such a new relationship in the digital world. FRH mainly involve and assess the social presence or affordance of a specific technology. The measurements of trust-in-tech resemble those of interpersonal trust. Studies on the topic are welcomed because such studies not only help to elucidate how human actually experience, feel about, and respond to the digital environment^[21], but more importantly, to address a big-time issue: in today’s technologically manipulated society, trust-in-tech confronts ever-growing skepticism and the debate on blockchain is a typical example.

Blockchain originally appeared in those bitcoin papers^[22] and became a buzzword in the cryptocurrency mania in 2017 because it provides financial services for customers without access to banking via smart contracts^[23]. As the most popular Distributed Ledger Technology (DLT)^[24] deployed in practice, it is believed to be the top area of exploration in supply chain and trade flow. Besides, it solves a fatal defect of past online systems: once the center was hacked, the whole system collapsed. The center of the system can be seen as the authorities in reality where people place trust. Quite a few research focus on the role of blockchain in strengthening cybersecurity and protecting privacy. Perhaps it is bringing human into a brand-new trust paradigm. However, it is not unbreakable^[25]. Although DLT is encrypted, its decentralized structure dooms that start-ups cannot have a full control over clients’ personal data. There were industrial efforts to handle data vulnerability in the past, and internet engineers keep working on technical loopholes and introducing new methods to resist cyberattacks^[26]. Opinions vary on if this trustless technology eliminates our needs for trust. The truth lies somewhere in the middle as corresponding challenges accompany with its wide applications^[27].

Blockchain, perhaps more than any other technology, is in need of trust-in-tech to change its low adoption rate at current stage and to escort its future development. The decentralized feature of blockchain leads to its coupling relation^[28] with our trust-in-tech, but people’s distrust in emerging technologies customarily root and sprout. This study aims to apply specific discursive strategies to repair system-like trusting beliefs of blockchain. In addition, *Wired* magazine is at the forefront of reporting the technology industry^[29-30] where blockchain has been hyped and misunderstood. Therefore, a possible research question could be: How does *Wired* apply EP & NN to repair trust in blockchain from the dimensions of FRH? Such study does not set in any trust crisis event and the state of trust-in-tech involves only a subtly unidirectional flow of cognition and emotion.

2.3. A model of trust-in-tech repair discourse

Based on the theoretical foundation reviewed above, a model of trust in blockchain repair discourse is initiated for research needs and presented in **Figure 1**. The model is adapted from the model of trust repair

discourse and the causal attribution model of trust repair. It is a gradable model circled in the dotted box that contains three linearly developed levels of discourse-as-context, reparative strategies and system-like trusting beliefs. At the micro level, engagement, and attitude systems of systemic functional linguistics ^[31] are introduced to identify those linguistic resources of dialogic engagement, evaluation (explicit or invoked) and affect respectively for fulfilling EP & NN. At the meso level, EP & NN are set to repair trust in blockchain from three key dimensions of RFH at the macro level. The research standpoint of the third-party evaluation goes through the whole process. The impact of contextual variables (i.e., *Wired* & blockchain) and the casual attributions to violations of trust in blockchain will be discussed based on the coming results, especially the discourse analysis.

Figure 1. An adapted model of trust in blockchain repair discourse

To answer the research question, 60 articles from the official website of *Wired* are collected and incorporate onto UAM CorpusTool ^[32]. The corpus data contains 70,000 words or so. For corpus annotation, three systems are built on the tool. Among them, amendments are made to the engagement and attitude systems in branch and depth to identify those linguistic resources in an alternant way. The trust-in-tech system is responsible to identify EP & NN and FRH respectively via text analyses. Finally, a discourse analysis is conducted to describe the reparative process. The data processing synchronizes with the corpus annotation, and each feature of the systems is enclosed with a detailed gloss to assist the annotation.

4,310 pieces of featured linguistic resources are identified in terms of engagement and attitude, which fulfill 500 pieces of EP & NN from the corpus data. The results are displayed in **Figure 2** and each feature is followed by its number of frequency and global percentage. Specifically, the engagement is slightly less than the attitude in the number of frequencies, but the contract distinctly outweighs the expand. Furthermore, the disclaim is about four times more than the proclaim. Subsystems of the disclaim vary slightly while those of the proclaim vary considerably.

above are generally consistent with similar studies of interpersonal trust repair [33]. Most of the judgment is subdivided into the capacity, and about half of the appreciation is subdivided into the reaction. The in/security is the most prominent affect, but most of the affect is non-authorial. For EP & NN, EP is fulfilled over four times more than NN. For FRH, the data is inclined to discuss the functionality and the helpfulness of blockchain. **Table 1** summarizes the main discursive motives of EP & NN made by *Wired* to repair FRH of blockchain. EP tends to start from the technology end while NN tends to start from the human end in the trust-in-tech relationship. The functionality seems to show what blockchain is, the reliability deals with what users care about, and helpfulness anticipates what its potentialities are.

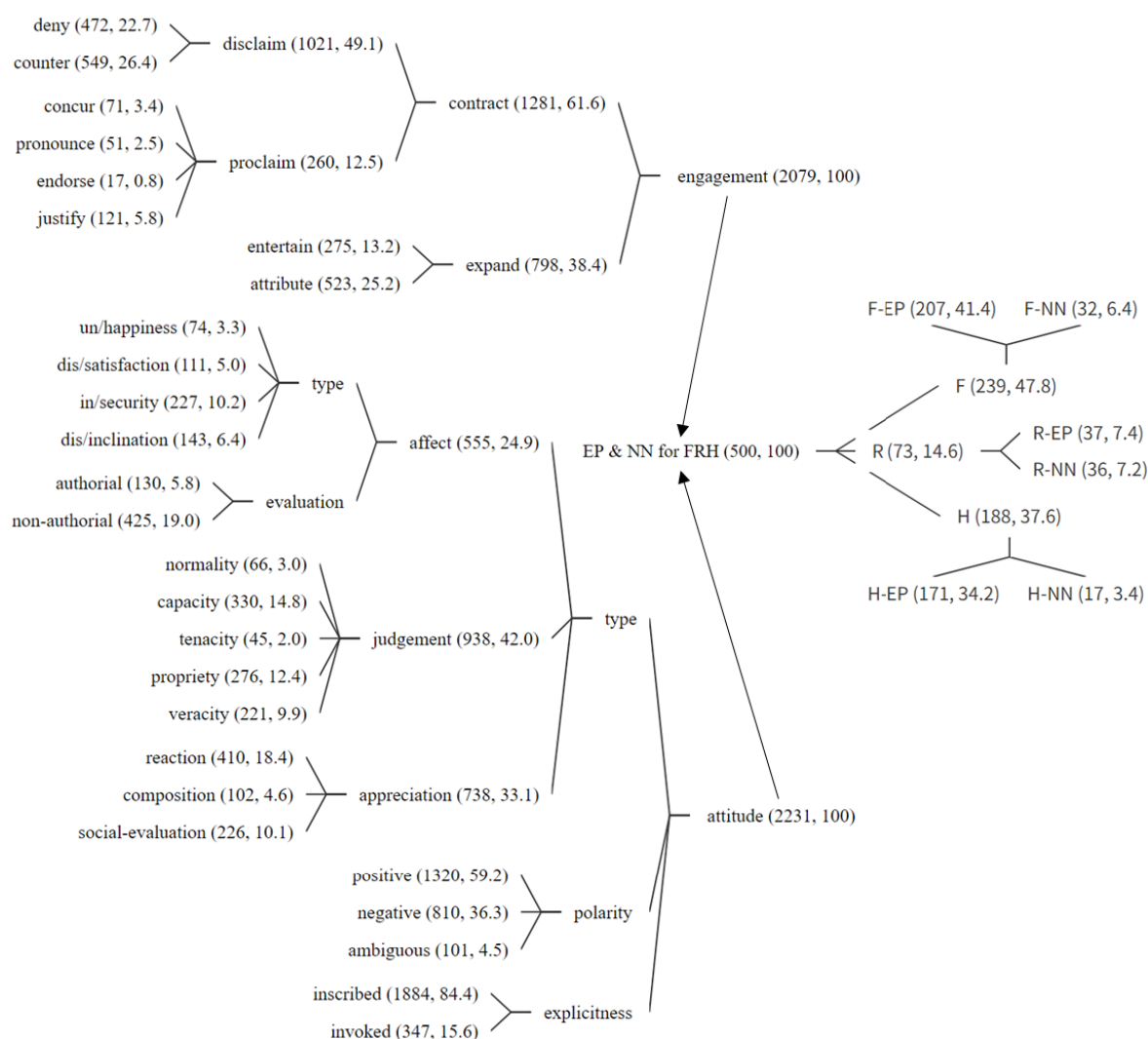


Figure 2. The statistical results of the annotation from UAMCT

Table 1. A summary of trust in blockchain repair discourse analysis

<i>F-EP</i>	Blockchain is openly secure, highly self-managing, hard to be tempered with. Blockchain is the solution to problems on record-keeping and provenance-providing. Blockchain fires middlemen and has potential to create a trustless cyberspace.
<i>F-NN</i>	The proof-of-stake algorithm will make blockchain less energy-consuming. Blockchain does not show the added information but only computational results. Tech megatrends boost blockchain hype that do not tell the full story.

(Continued on next page)

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R-EP	Blockchain is immutable, so records are permanently stored. The interdependence of blockchain ensures integrity of records.
R-NN	As a distributed ledger technology, it is impossible to take blockchain down easily. Blockchain cannot refuse online attacks and online attacks make blockchain robust. Quantum computers could break blockchain but rescue it, too. What blockchain needs now is not regulation but understanding.
H-EP	Blockchain optimizes complex supply chains for big corporations. Blockchain helps photographers assert control over their work. Blockchain provides permanent provenance to counteract different kinds of fraud.
H-NN	Some use blockchain for illegal purposes, but others use it for good. Blockchain disrupts music market but develops music business.

5. Discussion

It is truly inappropriate to construct AIB for interpersonal trust repair as discourse effects which are not decided only by the speaker. At the macro level, matters of emotionality are naturally harder to control than those of rationality; at the micro level, the particularity of trust-in-tech requires a third-party to play the role of repairer, and the evaluation from reputable *Wired* would lower the uncertainty of discourse effect. Besides, trust repair dynamics in the human-technology interaction is different from those in human-human relationship. FRH of a technology are theoretically easier to be measured than AIB of a person. Moreover, FRH have a positive bias for technology but against human ^[34], inclining the discourse effect to be prominent.

According to the attribution theory, *Wired* mainly attributes the violations of trust in blockchain to those external factors such as tech megatrends, the blockchain hype ^[35], internet system, cyberattacks, illegal or unethical applications and so on. Owing to the locality of the factors, subscribers of *Wired* perceive a weak correlation between the violations and the violator, resulting in positive credential assessments on FRH of blockchain. The credibility of the violator stays because those factors are uncontrollable. The instability of the factors is also in favor of repairing trust-in-tech. As for EP & NN, they could be categorized into explanation, justification more precisely, to repair trust in blockchain; both of them also function well. On the one hand, the unrequited emotion between the trustor and the trustee is not so urgent to be managed if compare with those negative even hostile emotions in trust crises; on the other hand, the effect of a third-party on trust repair implies almost unnecessary emotion management between it and the other two parties. Furthermore, the trust-in-tech repair discourse focuses more on the technology and what users do with it than on human.

The influence of contextual variables on some of results on **Figure 2** is discussed mainly from two aspects. Firstly, the affect fails to outnumber either judgement or appreciation in frequency. One possible explanation goes to the context of *Wired*. The magazine has devoted itself to all aspects of technology and innovation for three decades. Stylists see it as a men's lifestyle magazine that allows for a negotiation of masculinity premised on work and leisure and production and consumption. The way of conceptualizing technology as culture accumulatively exerts subtle influence on the language of *Wired*, which is open, objective, and straightforward. Secondly, the security is the most frequently observed effect though the effect is the least kind of the attitude. This could be attributed to the seemingly predetermined relation between the technology and data security ^[36]. Thirdly, the data talks more about the functionality and the helpfulness than the reliability of blockchain. This can be justified if consider the corpus annotation. What FRH refer to is semantically links with the subsystems of the judgement and the appreciation, but the

context of blockchain is the reason behind it. The blockchain hype is actually an exaggeration of its key features or functionality under the technique megatrends^[37]. The wide applications of blockchain argue for its usefulness, and the technology is still in nascence with limited feedbacks or assessments, which explains the inferior positions of the reliability and NN in frequency counting.

The security concern is a trigger to blockchain debate, and the trust-in-tech repair discourse analysis finds that *Wired* appears to respond to the debate^[38]. The response is not a black or white affair. There are problems to think about, such as the general classification of the technology and the level of trust in need. Public or permissionless blockchain like bitcoin and Ethereum is trustless, but both of them require a low level of trust among anonymous users in order to take in charge of the network. Private or permissioned blockchain like Hyperledger is not trustless due to the dominant role of one or more organizations in maintaining those ledgers^[39]. Therefore, blockchain indeed has challenged the traditional mode of trust and been trying to bring us to the paradigm of digital trust^[40], but we still need interpersonal trust to reach a real trustless world.

6. Conclusion

The consideration of both trust repair and digital trust is of necessity to deal with the growing skepticism towards emerging technologies in the digital age. This study starts from the theoretical foundation of interpersonal trust repair to our damaged trust-in-tech and situates at *Wired* magazine to frame blockchain debate. The trust-in-tech repair discourse analysis demonstrates how *Wired* apply EP & NN to repair FRH of blockchain. Compared with studies on interpersonal trust repair, this study reiterates the rational side of trust which would result in more predictable discourse effects. The major findings could give certain references for technical enterprises to tackle trust-related problems of products or services powered by emerging technologies. Of course, there are limitations. The corpus data comes from only one magazine that may not show the whole picture of blockchain, and the manual annotation is often questioned for subjectivity. Future research would expand the corpus data and collect feedbacks from the subscribers of *Wired* on the topic by questionnaire if possible.

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Study on the Destination Image Improvement of Guangxi Rural Tourism

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Abstract: Rural tourism has become an important part of tourism. Rural tourism in China is developing rapidly, the development of rural tourism in Guangxi has also reached its peak. The number of rural tourism scenic spots in Guangxi has also skyrocketed, and the competition among rural tourism destinations is becoming more and more fierce. Shaping and improving destination image is an important means to enhance the competitiveness of tourist destination. A good image can not only distinguish a destination from its competitors, but also attract tourists and improve its performance. Therefore, it is of great significance study the image enhancement path of Guangxi rural tourism destination for the development of Guangxi rural tourism.

Keywords: Rural tourism; Destination image; Guangxi

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1. Introduction

Rural tourism has become an important part of tourism, and rural tourism in China is developing rapidly. In 2019, there were more than 300,000 operators of leisure agriculture in China, and about 3 billion rural tourists in China, with revenue exceeding 850 billion yuan. In 2020, rural tourism provided 11 million job opportunities. Although the tourism industry in 2020-2021 was not good due to the COVID-19 pandemic, but rural tourism still developed steadily. Guangxi rural tourism is also booming, up to now, Guangxi has a total of 209 Guangxi leisure agriculture and rural tourism demonstration sites. There are 89 star-rated rural tourist areas in Guangxi, including 4 five-star, 18 four-star, 65 three-star, and 2 two-star. In 2021, Guangxi has 9 key towns and 48 key villages for rural tourism. In the first three quarters of 2021, Guangxi's rural tourism received approximately 322 million tourists, which is an increase of 18.4% over 2019; and rural tourism consumption increased by approximately 231.289 billion yuan, which is an an increase of 19.4% over 2019.

2. Related concepts

2.1. Rural tourism

According to the World Tourism Organization, rural tourism refers to “activities where tourists stay, study, and experience rural activities in and near villages (usually traditional villages in remote areas).” British scholars Bramwell and Lane ^[1] believe that rural tourism is not only a tourism activity centered on agriculture, but a tourism activity involving various forms. In addition to agriculture-based holiday tourism, rural tourism also includes other natural tourism showing personal preferences, such as mountaineering,

fishing, recreational picking and other activities. Gannon ^[2], another British scholar of the same period, believed that rural tourism refers to a series of services, activities, and pleasant behaviors that farmers or rural residents provide for specific economic purposes to attract tourists to come and consume. Spanish scholars Gilbert and Tung ^[3] believe that rural tourism is a form of tourism in which farmers provide accommodation and lodging for tourists and enable them to engage in various leisure activities in typical rural environments such as farms and pastures. Japanese scholar Shisei ^[4] defines rural tourism as leisure tourism featuring farmers, humanity, and natural landscape.

In China, scholars have discussed the definition of rural tourism at different levels and angles. For example, Yang ^[5], an earlier scholar, believed that rural tourism is a tourism activity targeted at agricultural biological resources, agricultural social resources, and rural customs. Liu ^[6] believes that rural tourism is a sightseeing method based on rural customs. Lin ^[7] defined rural tourism as leisure, sightseeing, and vacation activities taking place in rural areas with rural customs, agricultural activities, and other natural and cultural landscapes as attractions through a quantitative and qualitative combination. Tang, Yang, and Liu ^[8] pointed out that the definition of rural tourism can be divided into a broad sense and a narrow sense. Rural tourism in a broad sense refers to non-urban tourism, while rural tourism in a narrow sense refers to taking rural areas far away from cities as destinations and taking unique rural natural and cultural landscapes as attractions. It is a kind of tourism that obtains economic and social benefits by meeting the needs of tourists for leisure, seeking knowledge, and returning to nature. Hu ^[9] believes that rural tourism attracts tourists through is a combination of rural culture and beautiful natural environments with unique sceneries and local traditions, giving the urban residents a chance to return to nature and countryside. Zhang states that ^[10] rural tourism destination is a rural area with attractive resources and characteristics, with some form of tourism reception facilities and services, and organized to carry out some rural-oriented tourism activities. It can be a specific rural scenic spot or a village (town). Huang et al. ^[11] pointed out that recreation is also one of the characteristics of rural tourism, which contains four connotations: human nature, attraction, experience, and compound. Human nature means to balance the needs of tourists and the interests of villagers; attractions are elements like rural natural landscape, local culture, production, and so on; experience means to attract tourist participation through sceneries, products, activities, and services. Compound is to highlight the functions of leisure, ecology, culture, health, and research, and finally realize the coordinated development of rural economy and society. Wan thinks that ^[12] rural tourism is a tourism activity carried out by tourists in rural areas where rural resources and culture acts as the core attraction, and at the same time has recreation characteristics. It can not only meet the needs of tourists for leisure vacation, but also drive the sustainable economic and social development of rural tourism destinations.

2.2. Destination image

Destination image was first defined as an individual's impression of a place other than his residence. Crompton ^[13] improved on the previous concept, believing that tourism destination image is an individual's comprehensive feeling of belief, concept, and impression on a certain destination. This interpretation obviously has deep limitations. Later, as many scholars continue to interpret and study this concept, it has been endowed with more and more connotations. Fakeye & Crowpton ^[14] believed that tourists' perception of destination image is a dynamic process, not a static quantity, their perception of destination image will also change overtime as they visit the place more frequently. Embacher believes that tourism destination image is the inner perception image formed for individuals or the public after the experience of tourism places, including rational part and emotional part. Fakeye believes that tourism destination image is the inner perception image obtained by potential tourists after sorting out tourism destination information before they carry out tourism activities. According to Kim ^[15], the image of a tourist destination refers to tourists' cognition, confidence, expectation, and perceptual understanding of the destination. In foreign

countries; the concept of tourist destination image is mainly from the perspective of individual or the public's perception of tourist destination, and it is believed that this image is derived from a combination of personal cognition, perceptual cognition, and rational cognition. Gartner ^[16] raised the definition of tourist destination image to the behavioral level through cognitive image, emotional image, and ideational image. Foreign scholar Tasci, Cavusgil ^[16] regards tourist destination image as an interactive system of subjective emotion.

China's research on tourism destination image and rural tourism destination image began in the middle and late 1990s, which is also the practical demand generated by social and economic development ^[17]. Zhang ^[18] defines the concept of tourism destination image from the perspective of tourists' perception, believing that it was the impression of tourists' comprehensive experience of tourism resources, activities, projects, degree of development, and other related aspects of the tourism destination. Both Deng and Liao ^[19] generalizes and defines the image of a tourist destination from the perspective of tourists, believing that the image of a tourist destination is a combination of the perceived impression of tourists and potential tourists, that is, the perceived impression before and after visiting the destination. Zhang and Tu ^[20] began to extend the concept of destination image from the perspective of perceived environment. They believe that destination image is the overall impression of the potential tourists towards their destination after obtaining and understanding related information about the place in the planning stage.

3. The image of Guangxi as a rural tourism destination needs to be improved

With the development of Chinese economy and the rapid increase of urban population, the demand for rural tourism is increasing and rural tourism destinations are emerging rapidly. The development of rural tourism in Guangxi has also reached its peak. However, most rural tourism destinations are created by the villagers themselves, therefore lacking unified management, and the overall image is not emphasized enough. Some rural tourism places are rich in resources but they lack of a distinct positioning. Although many rural tourism destinations are highly developed and have diversified tourism products and projects, their local characteristics have not been properly identified. Therefore, to achieve personalized and sustainable development of rural tourism, it is necessary to adopt image building paths and promotion strategies suitable for rural tourism destinations and provide methodological guidance for the design, publicity, and marketing of rural tourism destinations. To provide impetus for sustainable development of rural tourism destinations. Only by deeply understanding the tourist destination, mastering the advantages and disadvantages of the tourist destination, and establishing a good image of tourist destination, can we ensure keep tourists coming.

A good image of a tourist destination attracts tourists, but also influences their travel behavior, especially their post-trip behavior, such as recommendation behavior and re-parade behavior. In theoretical studies, domestic and foreign scholars have verified that tourist destination image has a certain impact on tourists' recommendation behavior, repeat performance, satisfaction, loyalty, and other aspects. From the perspective of management, tourists' post-trip behavior is not only the key to the success of destination marketing strategy, but also provides a basis for the improvement of destination image. Post-trip behavior also plays a positive role in reducing costs and increasing profits for local enterprises in tourist destinations.

4. Suggestions on improving the image of Guangxi as a rural tourism destination

4.1. Focusing on tourists' needs

To better attract target tourists, more emphasis should be given to tourists' preference and encouraging recommended behaviors. Guangxi rural tourism should be promoted on multiple platforms for better publicization, pay attention to the evaluation of tourists on online platforms, and timely discover and solve problems. Short video platforms such as TikTok can be used to promote tourism packages and attract tourists. Besides, unique product design and innovation can also be a selling point. Nowadays, cultural and

creative products are popular, thus, tourism products can be created by taking the image of longevity of Bama, forest health, water, minority culture and other representative scenery as inspirations. The memories of tourists and the unique tourism products are the motivation for tourists to revisit this place and promote the image of Guangxi as a rural tourism destination by recommending them to others.

4.2. Strengthening Guangxi rural image positioning and promotion

A branding or positioning of “Guangxi, the most beautiful countryside,” which can be easily remembered, can be used to market the tourist attractions by tourists through the publicity and reports on various platforms. In order to highlight the “Guangxi, the most beautiful countryside,” image, a beautiful travel environment and good travel experience needs to be provided; secondly, Guangxi rural tourism needs to be highlighted, showing “the most beautiful” image, to create “internet famous” places; lastly, unique tourism experience activities or products need to be offered at the tourism attractions.

4.3. Protecting Guangxi’s rural tourism environment and resources

The tourism resources and tourism activities in Guangxi is relatively well-recognized, and this should be maintained that way. The local government should protect Guangxi’s rural tourism resources and keep their authenticity and localism. Government supervision and public supervision shall be exercised over major polluting factories, and industrial wastewater shall be properly treated to protect the rural environment. The cooperation of the local government with the media needs to be strengthened to publicize the Guangxi countryside and attract tourists. Local villagers can take the initiative to learn singing folk songs, dragon and lion dances, and other activities.

4.4. Constantly improving infrastructure and tourism services

The government should increase capital investment, increase the number of public toilets and garbage cans, and clear signs to direct tourists to their destinations. Besides, more cleaners should be allocated to ensure timely cleaning of tourist attractions, and the quality of the environment should be improved. In the process of improving infrastructure, we should not blindly pursue luxury and modernization. The homestay, shops and restaurants in the village should have a rural look and characteristics of the local culture, which can attract more tourists. In order to improve service quality and cultivate rural tourism developers, relevant policies can be formulated to attract young people from other regions of Guangxi to return to their hometown, bring new ideas and concepts, and promote the development of local rural tourism. In terms of catering, accommodation, shopping centers, and other business, health and safety would be the main focus as well as the rationality of the prices. Rural tourism operators should invest more financial resources, manpower, and material resources to develop tourism products to make tourist souvenirs unique and avoid shoddy production and monotony.

4.5. Strengthening the emotional resonance with tourists

A relaxed and light-hearted atmosphere is especially important for tourists who visit Guangxi to relax, relieve stress and get away from the hustle and bustle of the city. In order to improve the tourists’ emotional image evaluation of Guangxi rural tourism, we should utilize characteristics of Guangxi rural tourism and create a relaxed tourism atmosphere. Firstly, the utilization of tourism resources, the construction of infrastructure, and the level of tourism services should be improved, and a relaxed, orderly and beautiful tourism environment should be created. Secondly, the sense of participation of tourists and the sense of identity of local customs needs to be strengthened, the interaction with tourists needs to be increased, and a good atmosphere needs to be created. Lastly, smart tourism needs to be integrated into the rural tourism of Guangxi. Through technologies like Internet navigation, virtual tour guide, explanation and shopping

guide, travelling is made much easier.

In short, by improving the cognitive image elements of rural tourism in Guangxi, the emotional image of rural tourism in Guangxi can be enhance, making tourists feel happy and relaxed after visiting Donghe Village. Consequently, the tourists' review and impression of Donghe village will improve and the image of rural tourism destination in Guangxi can be improved.

Disclosure statement

The author declares no conflict of interest.

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Research on the Employee Satisfaction of the Chinese University Graduates: A Case Study of Qingdao Hengxing University of Science and Technology

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Abstract: In recent years, the problem of job dissatisfaction among graduates of vocational and technical universities is particularly significant. Through field research, it was found that it is not difficult for graduates to find a job, but it is difficult to find a job that is satisfactory. Therefore, a questionnaire is distributed in this study, the research subjects are the university graduates from Qingdao Hengxing University of Science and Technology that have graduated from this university for half a year. Then, an empirical study was carried out to analyze how to properly construct an employee satisfaction evaluation system for vocational universities and evaluate the factors affecting employee satisfaction. Based on the results of this study, it is recommended that employers, universities, and students should take effective measures to cope with external changes in the market and concentrate on self-improvement. Besides, the government and other relevant departments should also take corresponding supporting measures to support the employment of vocational school graduates, reduce employment barriers, and achieve a mutually beneficial situation.

Keywords: Vocational school; Employment quality; Employment satisfaction

Online publication: February 28, 2023

1. Introduction

In recent years, with the gradual slowdown of China's economic growth, the expansion of vocational universities in China, and the country's increasing emphasis on the development of high-quality vocational education, more and more graduates are facing difficulties in terms of employment, especially those of vocational and technical universities. Through field research, it was found that it is not difficult for graduates to find a job, but it is difficult to find a job that is satisfactory ^[1].

1.1. Statement of problem

With the continuous deepening of vocational education, the situation of employment among students in vocational schools are becoming increasingly grim. At the same time, the understanding of theories and practical skills are given more emphasis as well as the comprehensive quality of college graduates. Therefore, the employment status and job satisfaction among the students reflects the quality of education and management of universities ^[2-3].

1.2. Objectives

In this paper, a scientific and comprehensive employee satisfaction of university graduates' evaluation index system is built from the perspective of employment quality, in consideration of the actual situation in our country, and based on the employee satisfaction evaluation index system and the research status of factors affecting job satisfaction. Then, the employee satisfaction among college students were analyzed based on the scores of the index system ^[4].

1.3. Scope of study

The study was conducted between January 2021 and August 2021 among 374 graduates of the 2019 batch from Qingdao Hengxing University of Science and Technology and based on the existing employment quality construction system research ^[5].

2. Literature review: The Human Motivation Theory

The Human Motivation Theory was put forward by David C. McClelland, a professor of Harvard University, in a series of articles in the 1950s through his research on human needs and motivations. McClelland states that every person has one of three main driving motivators: the needs for achievement, affiliation, or power. He has studied these three needs extensively, especially the need for achievement ^[6-7].

- (1) The need for achievement: the need to be successful and to be the best at what you do.
- (2) The need for power: the need to influence or control others.
- (3) The need for affiliation: the need to establish friendly and intimate interpersonal relationships.

3. Research methods

3.1. Sampling methods

The research is done by distributing a questionnaire the graduates of Qingdao Hengxing Institute of Science and Technology of the 2019 batch. The values of the basic component profile table of the three dimensions of work, school level and individual level are all derived from the questionnaires filled out by 303 employed students ^[8].

3.2. Variables

Influencing factors on a work level, school level, and individual level.

4. Data analysis result

4.1. Analysis on factors of employee satisfaction among graduates of Hengxing University

Based on the analysis of existing literature and theories on employment quality and satisfaction at home and abroad, on-site investigation, and research results of Hengxing University, the factors affecting secondary vocational school graduates are divided into three dimensions: work level, school level, and individual level. the scores of the items of the questionnaires, which were filled in by 303 employed students ^[9-10], are shown in **Table 1**.

4.1.1. Basic overview of influencing factors of employee satisfaction

Table 1. Scores of the influencing factors on a work level

Dimension	Indicators	Composition	Mean score
Work	Job content	Operational	3.3927
		Interest	3.4092
	Work environment	Environment	3.5215
	Labor remuneration	Wages	3.0561
		Welfare	3.1485
	Career prospects	Career development opportunities	3.2244
		Learning opportunities	3.4554
	Expected coincidence	Work environment	3.2211
		Job content	2.8284
		Salary	3.0363
	Atmosphere	Company atmosphere	3.7492
		Company culture	3.7756
	Relationships	Relationship between colleagues	3.5083

Table 1 shows the scores of the influencing factors at the work level. Of all the factors affecting the employee satisfaction, company atmosphere was the most highly-rated, with both of the items (company atmosphere and company culture) having the highest score; secondly, the work environment was scored relatively well. In addition, many think that their current job is in line with their own interest, with adequate learning and career development opportunities. However, in terms of labor remuneration, the evaluations of contact expectations and wages were relatively low, especially the two evaluations related to minimum wages, including wage composition and expected wage composition ^[11].

4.1.2. Basic overview of influencing factors on a school level

Table 2. Scores of the influencing factors on a school level

The dimension	Indicators	Composition	Mean score
College	Curriculum system	Course structure	3.5479
		Rationality of curriculum	3.5347
	Education	Teaching attitude	3.6007
		Quality of teachers	3.8944
		Exercises given	3.7723
	Management	Facilities	3.7162
		School ethos	3.7657
		Teaching evaluation system	3.7558
		Education system	3.7657

As can be seen from the **Table 2**, the quality of teachers had the highest score, followed by the exercises assigned by teachers, the school's ethos, and the education system. However, the respondents thought that the facilities of the school were insufficient, the teaching attitude of teachers needed improvement, the curriculum framework of the school was not ideal ^[12-13].

4.1.3. Basic overview of influencing factors on an individual level

Table 3. Scores of the influencing factors on an individual level

The dimension	Indicators	Composition	Mean score
Individual	Career path	Work planning	3.6832
		Direction of specialization	3.3036
		Career planning	3.5908
	Self-understanding	Self-awareness	3.4059
	Adaptability	Interpersonal skills	4.0066
	Work attitude	Hardworking	3.6964
		Conscientiousness	3.9340

When evaluating the influencing factors on an individual level, the components of the influencing indicators were evaluated through numerical scores. The components include interpersonal skills, conscientiousness, hardworking, work planning, career planning, self-awareness, career direction, and many more. Based the results shown in **Table 2**, interpersonal skills and scored the highest. Hardworking and conscientiousness scored the second highest, which means that most of them took their work seriously and try to complete their tasks and learn more about their jobs. However, the respondents seem to be relatively lost in terms of work and career planning and direction of specialization. Moreover, the results also indicate that they were not self-aware, meaning that they did not understand themselves ^[14].

4.2. Descriptive statistical analysis of influencing factors of employee satisfaction

4.2.1. Basic overview of influencing factors on a work level

Figure 1 shows that on a work level, 68.02% of respondents were satisfied with their work content, 70.43% thought that the working environment was suitable, 62.05% of the employees were satisfied with their labor remuneration, and 66.80% of the graduates thought that there were opportunities of salary increment. 60.57% thought that their work was similar to what they have studied, 75.25% of students thought that the working atmosphere of their workplace was harmonious, and 70.17% of employees were satisfied with the relationship between colleagues ^[15].

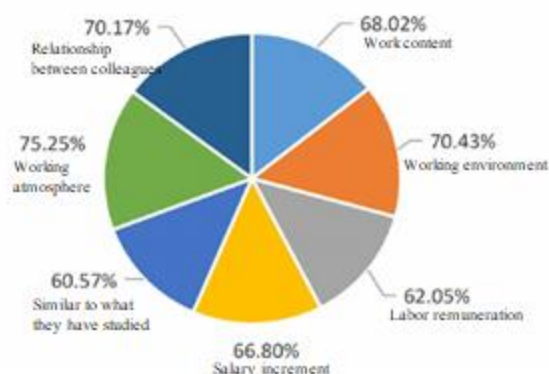


Figure 1. Influencing factors on a work level

4.2.2. Overview of influencing factors at school level

Figure 2 shows that on a school level, 70.83% of respondents thought that the curriculum system is relatively complete, 73.04% of graduates thought that the teachers were capable and responsible, and 74.44% thought that the school's education system, ethos, and other management elements were relatively good.

Therefore, it is clear that many students thought the school's curriculum was reasonable and practical.

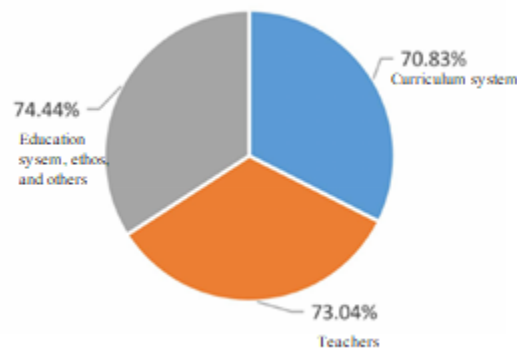


Figure 2. Influencing factors on a school level

4.2.3. Basic overview of influencing factors on an individual level

Figure 3 shows that an individual level, 70.52% of respondents had a clear career path, 68.12% had some form of self-awareness, 80.13% have strong adaptability, and 76.30% have a positive work attitude. Therefore, the results indicate that most of the students who were employed in 2019 had a clear understanding of work planning, career direction, and career planning.

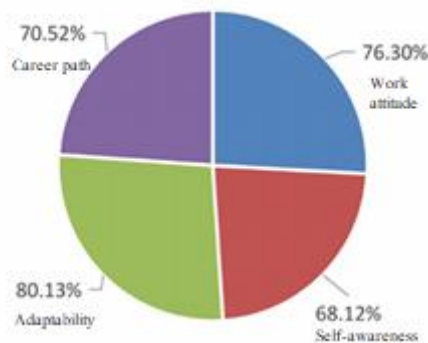


Figure 3. Influencing factors on an individual level

4.2.4. Overall results

Based on the evaluation results, the components of the employee satisfaction on an individual level had the highest score, followed by the school level, and finally the job level.

According to the scores of the influencing factors on a work level, the respondents were not very satisfied with their current company. Therefore, if appropriate measures are taken to address each influencing factor, the employment quality of workers will undoubtedly be improved ^[16-17].

5. Conclusion

Using Qingdao Hengxing University of Science and Technology as an example, the factors affecting employee satisfaction among college graduates were analyzed, with the goal to determine the weight of each influencing factors and propose targeted improvements in order to improve secondary vocational school graduates employee satisfaction ^[18].

In view of the results obtained in this study, there is still a large room for improvement for level of job satisfaction whether on a work level, school level, or individual level. Therefore, the employer should pay attention to the employee's satisfaction, interest in the work content, their potential, welfare and wages, company culture, and relationship between colleagues. Schools should also pay attention to the rationality

of the curriculum, the comprehensiveness of the education system, and the improvement of the school management based on the evaluation of students. Teachers should understand the real needs of students, check on them, and answer their questions regularly ^[19-20].

Based on the existing theories and research on employment quality and employee satisfaction, the problems faced by college students in their jobs were discovered. Besides, the current employment quality of secondary vocational school graduates is generally mediocre. In addition, it is clear that job satisfaction not only affects the employment quality, but also the economic and social harmony to a certain extent.

Therefore, the government and other relevant parties should take corresponding measures to ensure the employment of college graduates, to improve their employee satisfaction, quality of employment, and promote social and economic development.

Disclosure statement

The authors declare no conflict of interest.

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Research on the Factors Affecting Job Satisfaction Among Teachers in Qingdao Hengxing University of Science and Technology

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Abstract: With the rapid development of social economy and the deepening of higher education reform, college teachers in China are presenting increasingly complex and diverse characteristics. One of the main issues is that the phenomenon of job burnout is becoming increasingly rampant. Therefore, it is of great theoretical and practical significance to study the job satisfaction and burnout of university teachers to ensure effective development of universities and to improve the utilization of human resources, which will then enhance the competitiveness of universities. By analyzing the correlation between job burnout and job satisfaction, it is found that three factors of job burnout are negatively correlated with nine factors of job satisfaction, and the correlation coefficient was 0.01. It was found that the three dimensions of job burnout, which are emotional exhaustion, low achievement, and depersonalization of teachers has a direct negative predictive effect on the nine variables of job satisfaction of teachers, among which salary and welfare had the strongest predictive ability.

Keywords: University teachers; Job satisfaction; Job burnout

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1. Introduction

1.1. Work exhaustion

In 1982, a famous scholar Yang Jinfu defined job burnout as “the combination of emotional exhaustion, depersonalization, and low sense of accomplishment in interpersonal work” [1]. The concept of job burnout put forward by Farber includes the causes and influencing factors of job burnout [2]. Wang, a famous psychologist in China, believes that the main features of job burnout are as follows: bad mood, lack of enthusiasm, and low efficacy [3]. Farber divides teacher burnout into three dimensions: emotional exhaustion, depersonalization, and low sense of achievement [2].

1.2. The concept of job burnout

Psychologists Tang and Peng believe that job satisfaction is a comprehensive concept, which is mainly composed of working environment, nature of work, and psychology [4]. Demerouti and Bakker believe that job satisfaction is an individual's perception of the job itself [5]; Liu believes that job satisfaction is determined by the gap between the actual benefit and the expected benefit they get from a specific job [6].

1.3. Qingdao Hengxing University of Science and Technology

Qingdao Hengxing Institute of Science and Technology has 944 teachers and more than 10,000 students. Therefore, it was established as a full-time regular university in 2000. The school pays attention to engineering and management, covering nine disciplines including engineering, economics, law, education, management science, art, and literature. There are 470 in-service teachers with a master's degree or above, and 238 teachers with a bachelor's degree or professional and technical qualifications. In addition, 144 part-time teachers are employed. Experts and professors from many undergraduate colleges in and out of the province are hired to teach in the college. At the same time, industry elites and skilled workers are gathered to serve as practical teachers of related majors and participate in the compilation of special teaching materials.

1.4. Related research

1.4.1. Research status of job satisfaction among teachers

Feng and Wang found that the factors that affect the job satisfaction among teachers are the wages and salaries, the relationship between colleagues, the relationship between teachers and students, the workload, and many more ^[7]. Su divided job satisfaction among teachers into internal and external parts ^[8]. Internal satisfaction is mainly brought by the job itself, such as personal achievements and career development. Zhu found that job dissatisfaction among teachers are caused by poor time management, heavy workload, non-teaching-related activities, uncooperative parents, and the low social status of teachers ^[9]. Based on an empirical investigation in 2014, Peng divided the job satisfaction into school standards and personal standards considering the particularity of their work ^[10]. Lu found through research that there is a significant correlation between job satisfaction and emotional labor of primary and secondary school teachers ^[11].

1.4.2. Research status of job burnout among teachers

The research on job burnout at home and abroad can be divided into two categories, one is the research on the antecedent variables of job burnout, the other is the research on the outcome variables of job burnout. Hu conducted a survey on primary and secondary school teachers through empirical research methods ^[12]. The results show that there are differences the degree of burnout based on gender. Emotional exhaustion is more prevalent among female teachers compared to that of male teachers. Xu and Wang reported in an empirical study that there is a significant positive correlation between occupational stress and job burnout ^[13], Qing took primary and secondary school teachers as the research subjects, and found that positive emotions were negatively correlated to burnout ^[14], while negative emotions were positively correlated with burnout, and there was a significant difference between negative emotion and depersonalization.

The variables of consequences of burnout can be divided into three dimensions: intention of resigning and poor mental health and job performance. The research of Wang shows that the higher the degree of burnout, the higher the physical and mental exhaustion of employees, and the lower their job performance ^[15]. In addition, the employees' mental health can be estimated using these three dimensions of a burnout. In fact, the intention of resigning can be predicted through the degree of emotional exhaustion. Su believes that job satisfaction can be improved through playing games and expression of emotions, and hence reduce the intention of resigning among employees ^[16].

2. Research method

2.1. Research design

The following technical route is used in this paper.

2.1.1. Independent variables

Personal characteristics: gender, age, educational background, tasks given, position, period of employment.

2.1.2. Dependent variable

Job satisfaction: salary, promotion, supervision, marginal benefits, contingent rewards, work environment, colleagues, nature of work, communication.

Job burnout: emotional exhaustion, depersonalization, individual fulfillment

2.2. Research hypothesis

Hypothesis 1: Job satisfaction among teachers is not related to personal attributes.

Hypothesis 2: There is a significant negative correlation between burnout and job satisfaction among teachers.

2.3. Population and sample group

The research subjects of this paper are full-time teachers in Qingdao Hengxing Institute of Science and Technology. In order to obtain a large number of survey data, a systematic sampling method was adopted, and online questionnaires were sent to teachers in the form of emails, in which they replied and sent them as attachments, with a total of 300 emails sent.

2.4. Research tools

The two questionnaires used in this study are Qingdao Hengxing Institute of Science and Technology Teachers' Job Satisfaction Scale and Job Burnout Scale. This scale is designed according to the Job Satisfaction Scale of University Teachers compiled by Cao ^[17]. This study preliminarily summarized three dimensions of teachers' job burnout: emotional exhaustion, depersonalization, and low sense of achievement. A total of 22 items were included, including 8 items in the personal achievement subscale, 5 items in the depersonalization subscale and 9 items in the emotional exhaustion subscale.

2.5. Data collection

The questionnaire was sent to 300 teachers via email, and the data were collected by "Questionnaire Star" (*Wenjuanxing*) data collection software to eliminate invalid questionnaires and obtain the actual sample size.

3. Data analysis results

A total of 212 valid questionnaires were collected in Qingdao Hengxing University of Science and Technology. Then, the influence of job burnout on job satisfaction among teachers were analyzed. All the collected data were processed by SPS 23.0.

3.1 Reliability test of questionnaire

3.1.1. Reliability analysis

From the perspective of psychometrics, the reliability of data determines whether the measured data and conclusions are credible. The higher the reliability, the more stable the data. Based on a paper by Woo, a reliability coefficient between 0.65 and 0.70 is the minimum acceptable value ^[18], 0.70 to 0.80 is good, and

around 0.80 to 0.90 is excellent.

In this paper, the correlation coefficient of each dimension is high, which indicates that the results of the questionnaire is reliable and valid. Generally, there are significant differences among teachers of different genders and teaching years. The total happiness score of male teachers is significantly higher than that of female teachers; besides, young teachers are more prone to burnout than middle-aged and older teachers.

3.1.2. Validity analysis

Content validity indicates the degree of intention and purpose of the test, which aims to express and elicit the expected response. The items of this research questionnaire are all based on a comprehensive scale, so its content is highly valid. Before the factor analysis, the suitability of factor analysis is first tested. In this study, Kaiser-Meyer-Olkin (KMO) and Bartlett's tests were conducted using the same method, and the results are shown in **Figures 1 and 2**.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.753
Bartlett's Test of Sphericity	Approx. Chi-Square	235.842
	df	10
	Sig.	.000

Figure 1. KMO and bartlett sphericity test of teacher job satisfaction scale

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.707
Bartlett's Test of Sphericity	Approx. Chi-Square	216.615
	df	3
	Sig.	.000

Figure 2. KMO and bartlett sphericity test

A paper by Freudenberger states that when the value of KMO is less than 0.5, it is not suitable for factor analysis^[19]. The results show that the KMO values are all higher than 0.7, which indicates that the factor analysis in this study is acceptable, and the values of the significance tests are 0.000, which is lesser than 0.001, which indicates that the correlation matrix is not identity matrix, so factor analysis can be carried out.

3.2. Descriptive statistical analysis of each research variable

The research subjects of this paper are full-time teachers in Qingdao Hengxing Institute of Science and Technology. In order to obtain a large sample of survey data, an online questionnaire is distributed via email and the teachers replied in the form of attachments. The online survey lasted for 30 days, with 300 emails sent and 212 valid results, which is a recovery rate of 70.67%. The following are descriptive statistics of sample demographic characteristic, burnout and job satisfaction.

3.2.1. Descriptive statistics of job burnout among teachers

Table 1. Descriptive statistics of job burnout among teachers ($n = 212$)

	M	SD	Median	<i>t</i>
Emotional exhaustion	3.215	0.869	3	4.640***
Individual fulfillment	2.733	0.629	3	-7.960**
Depersonalization	2.890	0.823	3	-2.500*
Average score	2.966	0.600	3	-1.061

Note: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

From **Table 1**, the average value of emotional exhaustion was higher than the theoretical median value of 3, and the other two items are lower than the median value of 3. The rate of burnout among teachers in Qingdao Hengxing Institute of Science and Technology was still relatively low, which was consistent with the relatively high average job satisfaction score.

3.2.2. Descriptive statistics of job satisfaction among teachers

Table 2. Descriptive statistics of teacher job satisfaction and various dimensions ($n = 212$)

	M	SD	Median	<i>t</i>
Supervision	3.849	1.292	4	-2.191*
Work environment	3.305	1.143	4	-11.405***
Marginal benefits	3.403	1.381	4	-8.115***
Contingent reward	3.647	1.531	4	-4.318***
Relationship with colleagues	3.764	1.266	4	-3.506**
Nature of job	4.816	1.514	4	10.114***
People network	4.163	1.288	4	2.370***
Salary	2.931	1.319	4	-15.205***
Career development	3.928	1.457	4	-0.924
Average score	3.948	0.823	4	-1.178

Note: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

Based on the results shown in **Table 2**, median scores for all items were 4, which means a relatively high job satisfaction, with the score of “nature of job” being the highest at 4.816.

3.3. Variance analysis of demographic variables of job satisfaction among teachers

3.3.1. The impact of gender on job satisfaction

The result shows that gender had no significant impact on the first four items of job satisfaction, with almost equal scores among men and women. However, in terms of interpersonal relationship, the satisfaction score of female teachers was higher than that of male teachers.

3.3.2. The influence of age on job satisfaction

Age has a significant impact on all factors of job satisfaction, especially in three aspects: leadership, nature of job and rules and regulations, with a significance of 0.01. A survey of teachers aged 56–65 showed that teachers under 30 years old scored higher than those in other five age groups in four aspects: leadership ability, salary and welfare, nature of work, and relationship with colleagues.

3.3.3. Influence of education status on job satisfaction

Those with a bachelor's degree or lower levels of education had the lowest degree of satisfaction, while those with doctor's degree or above had the highest job satisfaction degree. There were significant differences in terms of salary and welfare satisfaction, especially in leadership positions. The main reason for this difference is that the higher the education level of teachers in Qingdao Hengxing Institute of Science and Technology, the more opportunities they have to further study and improve themselves, and their welfare will be increased accordingly.

3.4. Correlation analysis between job burnout and job satisfaction

Through data analysis, the following conclusions were drawn: the higher the job satisfaction, the lower the possibility or degree of job burnout, the lower the degree of emotional exhaustion. In this paper, Pearson product-moment correlation method was used to investigate the relationship between nine factors of job satisfaction and three factors of burnout. There was a negative correlation between job burnout and job satisfaction among teachers ($R = -0.469^{**}$), and the correlation was significant, which is consistent with the results of other studies. There were also significant numerical expressions between the three dimensions of job burnout, job satisfaction and emotional exhaustion. However, there were individual irrelevance or common significant correlation among each dimension. The correlation coefficient between job nature and emotional exhaustion and job satisfaction was the largest, and the partial regression analysis coefficient was 0.500. Lastly, the results showed that teachers with low job satisfaction were more likely to experience job burnout.

4. Conclusion

A total of 212 valid questionnaires were obtained, and SPSS23.0 software was used to input data and perform statistical analysis. The reliability and usability of the questionnaire was tested by factor analysis and reliability analysis, and then the research hypothesis is verified by descriptive statistics, variance analysis, correlation analysis and regression analysis. Therefore, the following conclusions were obtained:

- (1) Organizational justice and leadership behavior were the most important factors that affect the job satisfaction among college teachers, followed by the teaching environment and colleagues' relationship, and salary and benefit. In addition, gender, teaching experience, and educational background also affected their job satisfaction.
- (2) The differences between job satisfaction and job burnout among teachers in demographic variables were reflected in the following aspects: gender, age, educational background, and professional titles.

The results show that there was a negative correlation between job satisfaction and job burnout among teachers. Therefore, future research should emphasize on teacher burnout based on intervention, in order to obtain more reliable research conclusions.

Disclosure statement

The authors declare no conflict of interest.

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Study on the Influence of Short Videos on the Popularization and Development of Tai Chi

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Abstract: The purpose of this study is to analyze the challenges faced in popularizing of Tai Chi and the impact of short videos on the popularization of Tai Chi. Then, several suggestions are put forward on how short video Tai Chi can be popularized through short videos. Through literature review, this study analyzes the difficulties faced in the development of Tai Chi, such as lack of dissemination methods and long learning time. Tai Chi practitioners and organizations should make full use of the advantages of short videos in the new era, keep up with the trends, actively introduce new dissemination methods, firmly grasp modern communication methods, create Tai Chi-related short videos, and provide guidance to Tai Chi content creators.

Keywords: Short video; Tai Chi; Popularization

Online publication: February 28, 2023

1. Introduction

Tai Chi is a sport guided by Yin and Yang ideologies manifested through attack and defense, its exercises involves the coordination of Qi and spirit, with the goal of strengthening the body and prolonging life. The movements of Tai Chi are expansive, slow, and gentle, with the combination of hardness and softness ^[1], which has a positive effect on fitness and health ^[2]. Tai Chi not only has strong performance value in the modern society, but also has important fitness value and cultural value. One can learn about Chinese culture through practicing Tai Chi.

Short videos are defined as videos that are played on various new media platforms, which can be viewed using mobile phones during our pastimes. The duration of short videos ranges from a few seconds to a few minutes. Short videos have become a new platform for domestic news and information dissemination, which has promoted the communication and development of Chinese culture to a certain extent ^[3]. Tens of thousands of short video creators have promoted the cultural features and social environment of different parts of the country with their own strength, and China Central Television CCTV have also created a short video publishing department ^[4], laying a strong foundation in the current society, which is enough to support the development of the society. The methods of development and popularization of Tai Chi should keep up with the times. With the help of short videos, Tai Chi can be popularized and flourish in China.

2. Problems and challenges faced in the popularization of Tai Chi

2.1. Contrary to traditional culture

When China was forced to open its closed diplomatic door, Western culture flooded into China. At that

time, China was suffering from social unrest and cultural aggression from Western countries. Under the huge influence and oppression of Western culture, China was unable to withstand the cultural corruption and decided to carry out reform. For example, in Chinese martial arts (boxing ceremony), the right fist against the left palm means respect ^[5]; if the left fist is placed against the right palm, it means to challenge or to provoke, which is impolite. China has always advocated good etiquette, attached importance to ethics, and emphasized on rules and ceremonies ^[6], and has always been known as “an ancient civilization and a land of rites” ^[7]. However, Western sports’ ideologies are different from Chinese Tai Chi.

2.2. Weakened cultural identity

The weakened cultural identity of Chinese people is probably caused by the rapid economic development of foreign countries and rapid dissemination of information through the internet. Foreign cultures invade young minds in different ways and. Besides, they also publicize their own fine policies, beautiful scenery and social welfare on the Internet to gain young people’s favor, and this has affected the lives of modern people. It has made some young people prefer the West ^[8]. Besides, international fighting events like Taekwondo competitions are more popular among the public, more accepted by young people, and more easily spread among teenagers. Traditional Chinese martial arts like Tai Chi is no match for young people’s love of Taekwondo. Therefore, their cultural identity is weakened, which makes international fighting events a major stumbling block for promoting Tai Chi ^[9].

2.3. Limited publicization of Tai Chi

There is limited dissemination of Tai Chi. Firstly, due to the restriction of the school, a complete set of *quanshu* (‘pattern’ or ‘form’ of a martial art) is spread within the school, with limited access from outsiders. The scope and methods of publicizing it are limited. Secondly, although the moves of Tai Chi are simple, it is not a quick sport. It is difficult for people with uncoordinated bodies to like them, so fewer people choose to practice Tai Chi. The third reason is due to the restrictions of the age ^[10], while some folk Tai Chi is not affected by school restrictions, it is not an easy sport, it requires rigorous training to master the basics and it is physically challenging, which caused many young people to quit practicing Tai Chi. In fact, many of them quit due to the pandemic because no gatherings were allowed.

2.4. Insufficient reserve strength of Tai Chi

Most of the Tai Chi practitioners are middle-aged and elderly people. The elderly focus more on health and not doing strenuous exercise. Therefore, the best way of exercise is fitness Qigong and Tai Chi. Whereas young people prefer exciting and new sports, many new sports have emerged such as racing, skateboarding, motorcycling, and skydiving, which are nerve-wrecking, while Tai Chi is mostly remembered for its traditions. Many Tai Chi institutions and schools have been shrinking year by year, and the inheritance and dissemination of traditional Tai Chi has been faced with an awkward situation of not being able to keep up with the times ^[11].

3. The influence of short videos on modern life

Short videos reflect the general life of the people. They can transform users from “bystanders” to “participants,” and each user can have his or her own “network newspaper,” “network radio,” or “network TV.” Short video has a low threshold and is easy to operate; whereas the operation of traditional media such as TV and newspaper is more complicated, in which it requires a lot of manpower, resources, and finance to maintain. Besides, the content of traditional media has to go through layers of verification and inspection by the relevant departments of the state. Its evaluation is strict, the threshold is very high, and it is intimidating, which makes it almost an “impossible task.” With strong interaction and fast

communication, there is no limitation in space and time. Thanks to the development of digital technology, we can operate our own “media” at any time and anywhere, and information spreads rapidly with longer timeliness

4. The positive effect of short videos on the popularization of Tai Chi

4.1. Promotes the rejuvenation of Tai Chi

In order to improve people’s happiness index and provide entertainment, a variety of new short video software targeting young people are springing up. People frequently watch short videos, and it has become a major channel of information transmission. Due to the pandemic, gathering activities are not allowed, so students cannot take Tai Chi classes in schools. In view of this situation, short videos would come in handy. Teachers can shoot short videos for students to watch and learn repeatedly. Other people who are interested in Tai Chi could learn it without leaving their homes, and Tai Chi can be publicized. It is not only necessary to ensure the comprehensive dissemination of traditional Tai Chi culture, but also to further simplify the dissemination methods, so that Tai Chi can be taught and disseminated online ^[12]. Lastly, the broadcast of Tai Chi competition through short videos has a significant and far-reaching impact.

4.2. Active Tai Chi entertainment performance function

The military value of Tai Chi is gradually declining in the process of modernization, political warfare becomes more common and world peace is highly advocated by world leaders. The Chinese society has been harmonious and stable, so Tai Chi gradually transformed into folk Tai Chi, from the fight-and-attack type to the performance type ^[13], Tai Chi entered the performing arts industry and made some impressive achievements. Some movie stars, such as Donnie Yen, Jet Li, and Wu Jing, have been trained in Tai Chi to show the performance function of Tai Chi incisively and vividly ^[14].

5. Conclusion

The development of Tai Chi is faced with difficulties such as lack of limited dissemination due to school restrictions the sport being physically challenging itself while modern sports are faced are more diverse. Short videos can be used as a platform to popularize Tai Chi. The layout of Tai Chi’s cultural industry needs to be reformed, the investment promoting Tai Chi through online platforms should be increased. Besides Tai Chi can also be integrated into current hot topics, and the network of communication should also be expanded so that more people can get to know Eastern culture. With the development of technology in the modern era, short videos have given Tai Chi an opportunity to spread vigorously.

Disclosure statement

The author declares no conflict of interest.

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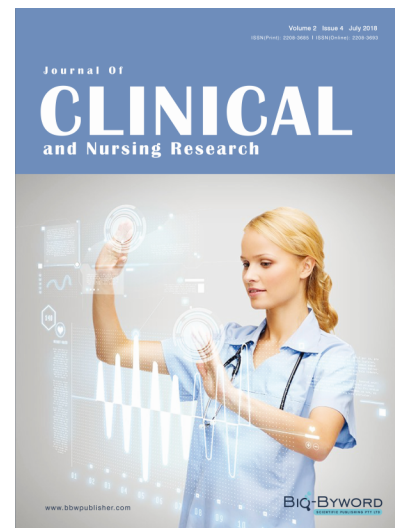
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