



Research article

What do they Need?—The academic counseling needs of students majoring in art and design in a higher vocational college in China

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ABSTRACT

Students in higher vocational education are always encountering various challenges. The way they attempt to conquer these challenges influences their success in achieving their academic goals. With the development of the times, the needs of students in China's vocational colleges to cope with challenges are also changing. In order to understand the changing needs of these students to cope with the challenges, based on Trautwein and Bosse's academic counseling demand model and Knowles's demand theory, this study adopted semi-structured interviews, key event collection methods, and purposive sampling to select 12 students of different grades majoring in art and design in a higher vocational college in Guangzhou, China. With reference to related studies on the key academic needs of students, interview outlines were designed, interviews were conducted, and coding and analysis were performed. Students' experiences were categorized according to learning-related, individual, organization, and social constructs. The study results showed that the academic counseling needs of China's higher vocational art and design students mainly focused on the learning-related construct, such as understanding the courses and course systems they were majoring in, setting and realizing academic goals, coping with setbacks, pressure and other students' comprehensive evaluation. This was followed by dealing with personal and financial issues, building social circles and peer relationships, and so on. Therefore, for students to overcome challenges and achieve academic goals, it is helpful to strengthen the collaboration between professional teachers and counselors, the influence of peers, the focus on academic consulting work related to learning, and to explore and carry out guidance on students' individual needs in higher vocational colleges.

1. Introduction

Due to the continuous inclination of China's national policies [1], the gradual improvement of multiple enrollment methods [2] and the change in Chinese family education concepts [3], almost all of the higher vocational colleges' current freshmen entered college

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directly after graduating from high school [4]. For these 18- to 21-year-old students who are experiencing the transition to adulthood [4], college life is both a challenging hurdle and a leap into the unknown [5]. While students complete their studies and achieve success, they also need to adapt to emotional reactions and fluctuations caused by changes in their environment, social circle, and personal status [6]. Compared with the steady state in which students were accustomed to the dual supervision of the school and the family and had clear goals before entering university, the new circumstances constantly encountered and adapted to in the university often make students feel at a loss [7]. Therefore, there is growing consensus among researchers that more attention should be paid to academic counseling for higher education students [7]. How to effectively implement relevant counseling programs is a serious issue. Such programs should be developed from the perspective of the parties/stakeholders (students), and should be able to provide more help that can meet their specific needs.

Academic counseling is a program or form widely used in the education system to provide guidance and advice for students entering colleges and universities to help them succeed [8]. It is also commonly utilized as a student support tool in higher education institutions around the world [7]. Because of its significant impact on the education system, academic advising in higher education is considered to affect learners' academic performance, enhance their learning experience and employment, and help them achieve success [9,10]. It can also increase student retention rates, graduation rate satisfaction and loyalty [11], and eventually lead to an effective measure of the win-win situation of achieving educational goals and fulfilling the educational mission of the school [12]. Therefore, it is particularly important to propose a good academic counseling program.

As an integral part of university life [13], the National Academic Counseling Association (NACADA) has defined the role of academic counseling as follows: 1. Helping students become talents; 2. Motivating students to achieve their goals; and 3. Training students' decision-making and problem-solving abilities [14]. In educational practice, academic counseling often adopts a variety of different tasks such as normative counseling, developmental counseling, invasive counseling, proactive counseling, appreciative counseling, and mixed counseling [15–18]. Various models in which academic staff and professional counselors are engaged and work together are concerned with student affairs and with assessing academic problems during school [19], family support [20], career development [21], management norms [22], personal behavior, lifestyle, and self-determination [23], among other domains and development [24].

The existing literature shows that there are many evaluation studies on university academic counseling advice [25] and empirical research cases on academic counseling [26] that have been carried out in different regions, but there have only been a few studies on academic counseling needs [27]. Moreover, most of the literature on academic advising has been conducted in the context of European and American universities [7]. Academic counseling research in China began to be carried out relatively late, so there is limited experience in this field [28]. The few studies that have been conducted have mainly focused on the construction of academic counseling systems [29], social adaptation [30], value systems and world view [31], the preferred consultation methods for Chinese students [21], and the study of foreign students [32]. The research subjects of these studies are mostly bachelor degree students or above.

In an empirical study on the academic counseling needs of higher vocational education students and specific majors that are similar to this study, Wang et al. (2021) conducted quantitative research, administering a questionnaire survey to 1512 vocational students [33]. Aiming at formulating an academic counseling plan for vocational students, their study analyzed the aspects of academic adaptation, academic performance, reasons for academic maladjustment, factors affecting academic development, and academic emotions from the perspectives of gender, high school category, and admission methods. Li et al. (2016) analyzed the academic characteristics of students in medical colleges and universities [34], and introduced the countermeasures and achievements of academic counseling in China. Chan (2016) used the method of group qualitative research to investigate the views of 79 nursing students on academic counseling regarding the four aspects of relationship building, academic development [4], personal growth and career goals to verify the effects of academic counseling on students.

Behavior and development are based on needs [35]. It is common sense in China that "what I give may not necessarily be what is wanted." Retrospective studies have shown that in order to provide academic counseling that meets their needs, it is necessary to understand students' counseling perceptions and needs [21]. Therefore, differing from previous studies, the purpose of this study was to conduct semi-structured interviews with students of art and design in higher vocational education to understand the changes in their environment, social circle, personal role, and academic goals upon entering university. An understanding of their academic counseling and guidance needs should help to partially fill the research gap regarding the needs of Chinese higher vocational students.

2. Theoretical basis and scope

2.1. Demand theory

Rogers (2013) argued that human beings need to grow from dependence to self-direction [36], while Havighurst (1948) clarified the developmental tasks of different growth stages [37]. Abraham Maslow's hierarchy of needs theory was formed in 1954 [38], then Knowles (1970) put forward the view of adult educational needs based on research on the various stages of development and the concept of identity formation [39]. Knowles believed that there are two types of needs: 1. Basic physiological survival needs such as physical or material needs, growth needs (an important factor in learning motivation, including knowledge, skills, attitudes, interests, comprehension and discrimination); safety needs (including physical, self-esteem, psychological, environmental and other safety needs), new experience needs, emotional needs (socialization needs, through behavior, to be liked, valued, and respected, to be recognized), identification needs (different from others); and 2. Educational needs: Individuals have a need for self-improvement in order to achieve the set goals. Therefore, this study explored the actual needs of students in the stage of academic development,

focusing on two types of needs, physiological survival and education needs.

2.2. 2 The academic consultation demand model

As part of a project at the University of Hamburg in Germany which studied the individual and institutional factors that contribute to the successful transition to higher education, using qualitative research, Trautwein and Bosse (2017) defined the characteristics of German university students from psychological and sociocultural perspectives [40], as they faced academic challenges. It was proposed that the achievement of academic goals was based on a combination of factors related to individual student performance, prior prerequisites, and the personal goals and role transitions during schooling. Hence the interactions between individual and institutional factors were determined as comprising primary core codes of the four constructs of individual, organization, learning-related and social constructs, and the secondary core codes of an academic consulting demand model comprising 32 secondary codes.

Sneyers and De Witte (2018) referred to the academic counseling needs model to point out the impact of interventions such as higher education administrative penalties [41], teacher-student guidance, and needs-based grants on various student outcomes. Based on the data of German college students' academic counseling needs, Mah and Ifenthaler (2019) found that big data analysis was better at identifying students' strengths and their targeted academic counseling needs [42], thereby improving the success rate of the students in higher education if possible.

Nerdinger et al. (2008) believed that investigating related individuals' needs for specific situations [43] from the perspective of organizational psychology would help to reproduce and accurately construct the basic state of students in higher vocational colleges in specific situations [44–46]. This study referred to Trautwein and Bosse's academic counseling demand model to observe the subjects' description of academic counseling expectations. By using these expectations as the psychological tendency and demand construction, it reflected the academic counseling needs of Chinese higher vocational students. The Academic Advising Requirements Framework is shown in Fig. 1.

2.2.1. Individual factors

According to the research of Trautwein and Bosse [40], Yu [47], and Chan [4], the main individual factors include but are not limited to balancing the relationship between study and life, relationship with family, responsibility for self-behavior, and coping with the problems brought about by puberty, and psychological changes (such as emotional management, facing setbacks, sexual interaction, building self-confidence, etc.) due to physiological stress. In this study, this construct referred to the challenges brought about by the changes in students' own roles and their resulting needs, which were discovered through self-critical examination, centered on the student's ontology.

2.2.2. Organization factor

The constraints of an education system are mainly derived from its behavior rules [40], the establishment and the impacts of school institutions, the requirements and evaluations that need to be addressed [25], the available school resources [21], familiarity with the school culture, and how to get guidance on the acquisition process of the above situation in various convenient ways [4]. In this study, this construct referred to the counseling needs of students while dealing with the school's management system and rules, and reward and punishment regulations.

2.2.3. Learning-related factors

The learning-related content includes the descriptions of clarifying career paths and professional expectations [48], understanding majors and making study plans [21], finding the direction of learning [49], knowing professional terms and learning processes, making choices about the learning process, finding a suitable learning style, building interest [25], cultivating a positive attitude, enhancing motivation to learn and improve skills, adapting to the pace of learning [7], having the willingness and ability to solve problems and think critically [4], improving time management and study skills in response to stress, and obtaining accurate information on professional assessment and graduation requirements [21]. In this study, this construct referred to students' expectations for academic goals, challenges in learning planning content, courses, and professional skills, as well as their consulting needs related to learning outcomes.

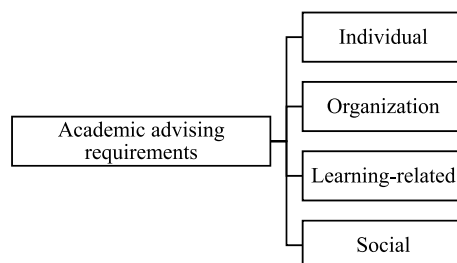


Fig. 1. Academic advising requirements framework.

2.2.4. Social factors

The social construct includes but is not limited to diverse exposure to new environments, integrating individuals into environments, improving social skills [50], building trust with teachers [51], adapting to groups to build social circles [4] and new peer relationships [52], coping with the challenges brought about by environmental changes [53], and strengthening social cognition and connection. The social construct was based on the perspective of students' growth mindset [54]; it explores and analyzes the consulting needs of individuals, organizations, and learning. In this study, this construct referred to students' counseling needs related to social interaction, from establishing peer relationships to coping with the social atmosphere in the classroom and campus.

3. Research design

3.1. Methods and framework

This study obtained data through semi-structured interviews [55] to provide thinking and suggestions for subsequent research. Based on Trautwein and Bosse's (2017) academic counseling demand model [40], this study also adopted Knowles' demand theory to design an interview outline. Grounded theory [56] was used to explore the connotations and constituent factors of the academic consulting needs of art and design majors in higher vocational education.

3.2. Research conduct and participants

The data collection for this study was carried out at the School of Art and Design, a public higher vocational college located in Guangzhou. The college has a 20+ year history of providing higher vocational education, and has long maintained a ranking within the top 500, putting it in the top 1/3 of Chinese higher vocational colleges in terms of its comprehensive strength. The data collection began in 2022, and there were more than 1600 students in the college, covering seven majors, namely art design, jade design, product design, digital media design, environmental art design, product design, and film and television animation. College entrance examinations, academic examinations, self-enrollment, triple + certificate, and so on are currently all registration conditions in Chinese higher vocational education.

During the period from 2022, the method of purposive sampling [57] was adopted to recruit participants for one-on-one interviews (see Table 1 for interview samples). Three groups of students with higher professional learning intention from the freshman, sophomore, and junior years, with four students in each group were recruited for the interviews. All participants agreed to participate in the study and to be interviewed. The average interview time per person was approximately 69 min.

3.3. Research tools

This study was based on Knowles's (1970) demand theory [39], combined with the research of Walker et al. [58] and Donaldson et al. [9], from the perspective of the critical incidents technique (CIT) [59], focusing on the students' personal experience of real events [60]. Background data underlying the event were collected to understand the event from a personal perspective of considering cognitive, emotional, and behavioral factors [61]. An interview outline was drawn up for the interviewees, including family support, life demands, goal setting, academic persistence, teacher-student interaction, peer interaction, environmental adaptation, and so on. The specific questions are shown in Table 2.

Table 1
Interview sample basic information.

Code	A1	A2	A3	A4
Gender	Male	Female	Female	Female
Expertise	Art design	Jewelry design	Product design	Environmental art
Grade	2022	2022	2022	2022
Art training	Yes	No	Yes	No
Interview time	58:32	67:03	61:09	49:57
Code	B1	B2	B3	B4
Gender	Male	Female	Female	Female
Expertise	Jade design	Environmental art	Jewelry design	Film animation
Grade	2021	2021	2021	2021
Art training	No	Yes	Yes	No
Interview time	45:06	55:28	74:52	79:45
Code	C1	C2	C3	C4
Gender	Male	Female	Female	Female
Expertise	Art design	Jade design	Film animation	Product design
Grade	2020	2020	2020	2020
Art training	No	Yes	Yes	Yes
Interview time	78:31	60:03	105:37	102:01

3.4. Coding process and Methodology

According to Glaser and Strauss's (1967) Grounded Theory [56], to better analyze students' true feelings about academic counseling needs, this study started by mining and analyzing the initial text data, and then gradually narrowed down and deduced the core concepts [62].

The coding process is described as follows. First, the collected data were organized into an interview record for data analysis. Secondly, by using the NVivo 11 software, the original interview texts were compared for isomorphism, and semantic concepts were obtained; 357 original sentences were condensed and sorted out. Then, continuous comparison and inductive analysis were carried out to condense the most frequent, most important or most relevant codes, and the interview records were coded and mapped to the corresponding core codes and secondary codes.

The codes are explained as follows: the first letter was the participant's grade (A: 2022, B: 2021, C: 2020) followed by an identifying number; the second letter was the gender code (G: female, B: male); the third letter represented whether the participant had basic drawing ability before entering school (Y: yes, N: no); the fourth letter represented the core code (I: individual, O: organization, L: learning-related, S: social); this is followed by a number (1–5) representing the secondary code (see Table 3 for a list of all secondary codes). For example: code B2-G-Y-O-1 indicates that the second girl of class 2021 who had basic drawing ability mentioned secondary code 1 (Responding to student comprehensive evaluation) related to the core code of organization.

3.5. Reliability, validity, data saturation and research ethics

The initiator of the study formed the research team through individual invitations. The four research experts all had many years of work experience in the field of vocational education and strong interest in this study, covering different fields such as art design teaching, student management, administrative management, and vocational education research. Expert 1 was a professor of art design in a higher vocational college and a doctoral student majoring in education management; expert 2 was a doctoral supervisor of education management; expert 3 was an associate researcher in a higher vocational college with a major in education management, and a Ph.D. candidate with 13 years of experience in academic counseling; Expert 4 was a student manager at the School of Art and Design in a vocational college, and a Ph.D. candidate in education management with 19 years of experience in academic counseling.

To maintain the validity of the interview process, the interview outline was usually submitted to the interviewees one day before the start of the interview, so that they had enough time to think about the interview questions in advance to ensure their understanding of the questions and the clarity of various viewpoints and explanations [63]. After the interview, different researchers checked the expressions of the interviewees separately, and simultaneously clarified the various opinions and interpretations of the data collection with the interviewees [64], so as to reduce the possibility of misunderstanding or misinterpretation [65].

In addition, this study adopted the triangulation method [66] to ensure the reliability and validity of the interview data analysis. All data, including raw data and preliminary research results, were independently analyzed by two researchers and were reviewed by the research team [67]. The four experts kept discussing throughout the coding process until consensus was reached [68].

According to Hammersley [69], the naming, connotation, and denotation of the research topic and its theoretical contribution to the research problem are constantly evolving during the data analysis process. The importance of a specific topic and its relevance to the research problem also alter accordingly. During the development of coding and themes, the research team found that a large number of codes were obtained during the first interview, and subsequent interviews clearly showed diminishing feedback. Starting from the ninth interview, it began to appear that no new information could be provided, which meant that the scope of coding and themes was basically determined. However, in order to ensure the integrity of the data results, the research team drew on the research methods of previous scholars [70] and continued to add three additional interviews to confirm the saturation of the data. Based on the fact that the proportion of new information to the total amount of information obtained in the previous interview was less than 5%, it could be concluded that the study had reached coding or theme saturation [71]. The research team believed that this study had reached coding and topic saturation.

Table 2
Interview outlines.

No.	Construct	Questions
1	Individual	Is there anything impressive in the process of personal growth since entering school? What do you think you need the most help with?
2		Is there anything impressive in your personal life? What do you think you need the most help with?
3		Does your family support your studies? Anything impressive? What do you think you need the most help with?
4	Organization	Was there anything impressive when you first came to school? What do you think you need the most help with?
5		Do you have any impressions about the school's rules and regulations? What do you think you need the most help with?
6		Is there anything impressive about the school's student management? What do you think you need the most help with?
7	Learning-related	What are your academic goals? Did anything affect you? What do you think is the most needed help to make it happen?
8		Is there anything impressive in your studies? What do you think you need the most help with?
9		Is there anything impressive about improving your professional capabilities? What do you think you need the most help with?
10	Social	Is there anything impressive about interacting with classmates? What do you think would have been better then?
11		When did you become acquainted with the teachers? Anything impressive? What do you think you need the most help with?
12		Is there anything impressive in the process of getting familiar with the new environment? What do you think you need the most help with?

Table 3
Coding Statistics table.

No	Core coding	Secondary coding	Frequency
1	Individual (I)	Coping with setbacks and stress	12
		Dealing with personal and financial issues	11
		Balancing study and life	8
		Self-management	6
		Family support	4
2	Organization (O)	Responding to student comprehensive evaluation	12
		Understanding the administration rules	8
		Work process guidance	7
		Effective access to resources and services	6
		Participation in community management	5
3	Learning-related (L)	Learning about majors	12
		Academic goal setting and achievement	12
		Understanding the curriculum and curriculum system	12
		Enhancing innovation ability and vocational skills	10
		Building interest in learning	10
		Finding a suitable learning mode	9
		Coping with professional assessment	9
4	Social (S)	Building social circles and peer relationships	11
		Response to social challenges	8
		Positive interaction with teachers	7
		Adaptation to the new environment	7
		Self-protection	5

In terms of research ethics, prior to the interviews, the interviewers asked the interviewees for their informed consent. Participants were clearly informed about the research information, their rights and interests, and the protection of their privacy. The interviews were formally conducted in an equal dialogue environment between the two parties after the interviewee agreed to participate. If the interviewee experienced any discomfort during the interview, the interview was stopped immediately. If other information related to the interviewee were collected, the data remained confidential and were destroyed. Fortunately, the research team did not encounter such an extreme situation during the interviews. Meanwhile, during the data analysis process, the research team strictly maintained the confidentiality of the data.

4. Results and discussion

This study used grounded theory to conceptualize, merge, compare and refine 357 original sentences, and finally formed 22 secondary codes, which were then classified according to categories of four core codes of social networking. Among them, there were seven secondary codes in the learning-related construct, and five secondary codes each in the individual, organization and social constructs.

The core codes are: 1. The individual construct, which refers to the consultation needs arising from the challenges brought about by the change in one's own role, including personal life, family support, growth confusion, etc. 2. The organization construct, which refers to the consulting needs of students due to the challenges brought about by the school's management system and rules. 3. The learning-related construct, which refers to consulting needs related to academic success and learning outcomes. It was also the most concentrated area of academic consultation needs. 4. The social construct, which mainly includes issues related to the interaction between students and society, from establishing social circles, coping with social challenges to consulting needs for self-protection. The specific coding is shown in Table 3.

4.1. The individual construct

The emergence of individual construct counseling needs was related to the transformation of students' lives. From the perspective of students, while gaining freedom in life after entering university, they must gradually learn to deal with the many pressures they face in life and make corresponding spiritual adjustments, and prepare [47] to avoid failures caused by anxiety, uneasiness, and weak psychological adaptability [72]. However, from a developmental perspective, the process of encountering challenges brought long-term benefits to growth after college [73]. Therefore, as an inevitable experience in life, current challenges not only brought unpleasant memories, but also promoted the students' personal growth [47]. The results of this study also consisted of the conclusions of the above-mentioned literature. According to the frequency of occurrence of each item from the individual construct, the interviewees mentioned that the focus of attention was mainly on the stress of coping with setbacks (12 times) and personal and financial problems (11 times), while balancing the relationship between learning and life (8 times) was also relatively involved. This showed that students felt helpless and at a loss when dealing with the above problems, and hoped to obtain channels of catharsis and counseling advice to rely on. For example, in terms of coping with setbacks and stress, one respondent mentioned:

The courses are overwhelming one by one, and the main reason is that my professional foundation is not good enough. I am about to explode! Thinking about it, I'm actually quite confused. (A4-G-N-I-1)

In dealing with personal and financial issues, one respondent mentioned:

You know the cost of living in Guangzhou. It's a lot of expenses every month. I'm looking for a part-time job. Yes, I know it may affect my homework. (C2-B-Y-I-2)

Regarding the balance between study and life, another respondent mentioned:

Quite chaotic, hard to concentrate, too many things, homework, and my own chores, making myself distracted. (B4-G-N-I-3)

In terms of self-behavior management, one respondent mentioned the state after leaving supervision:

I just can't be energetic. I'm looking for reasons for myself, but I know it is procrastination! I don't know what to do. (A1-B-Y-I-4)

Although not directly related to family support, one interviewee metaphorized the impact of family support on himself:

My mother called and kept telling me to pay attention to epidemic prevention. It is very long-winded and warm to have a good relationship with my classmates (A1-B-Y-I-5)

4.2. The organization construct

In terms of the organization construct, students' understanding of administration systems can positively affect their academic effectiveness [74], although most of the school's work in this stage is to inform students in the form of intrusive counseling and advice [4]. However, given the variety of educational administration systems in colleges and universities, most students still hope for personalized guidance [7] and corresponding timely solutions [75] when dealing with personal problems or making decisions. This study also verified the above point of view. From the results, the focus of the interviewees' attention was mainly on the responses to students' comprehensive evaluation (12 times) and understanding the administration rules (8 times). The core concept of both was the understanding of school administration rules. From the statements of the interviewees, it was concluded that there was still considerable room for improvement between students and the administration of institutions of higher learning. For example, some interviewees mentioned their confusion in dealing with the comprehensive evaluation of students:

I also want to be rated as an outstanding student, but I really don't know what to do. (B3-G-Y-O-1)

In terms of understanding management rules, some interviewees mentioned that the school had provided counseling, but it seemed that it had not met expectations:

The counselor teacher said a lot of things at once, but it is impossible to remember them. We can only go back and ask again when we encounter problems. (A1-B-Y-O-2)

In terms of guidance on handling procedures, some interviewees mentioned their helplessness in the face of the complexity of the school:

There are still many things to deal with later, but I don't know who to ask. (A2-G-N-O-3)

In terms of effectively obtaining resources and services, some respondents mentioned the convenience and shortcomings for them:

There is a Student Affairs Hall where most of the things can be solved, but some things still have to be done several times in different offices. (C4-G-Y-O-4)

In terms of participation in club management, students also mentioned their own confusion when their willingness and original motivation to participate in school management were different:

I think Student Affairs can test my ability, but I feel so at a loss when I join in. There are many things I don't know how to do. (A2-G-N-O-5)

4.3. The learning-related construct

Studies on the learning-related construct have mentioned that academic counseling can help students to formulate career paths and make more reasonable study plans or educational choices [76], give students the opportunity to reflect on their own interests, strengths, and weaknesses, urge students to explore their own educational, personal and career goals and plans within an overall framework [21], improve students' cognition, motivation and behavior [77], and then generate sustainable growth momentum [25]. The results of this study concurred with the above conclusions. The interviewees' consulting needs mentioned in the learning-related construct were more concentrated than other constructs, especially understanding the majors studied (12 times), academic goal setting and realization (12 times), and understanding the curriculum and curriculum system (12 times), followed by improving innovative ability and vocational skills (10 times) and building learning interest (10 times). For example, in terms of understanding the majors they studied, some respondents mentioned:

I have been in school for a long time, and I [still] don't know anything about this major, so I hope someone can explain it more clearly to me. (A2-G-N-L-1)

In terms of setting and achieving academic goals, some respondents mentioned:

I don't know how the future will be realized. I really don't know. (B2-G-Y-L-2)

In terms of understanding the curriculum and curriculum system, some respondents mentioned:

The teacher told us about the curriculum arrangement for the past three years. I remembered it very clearly at the beginning, but now I can't remember it all. Fortunately, at least I am not so anxious about the future now. (A3-G-Y-L-3)

In terms of improving innovation capabilities and professional skills, some respondents mentioned:

In the past, I always regarded the operation design software as design. After the consulting, I understood what we need to do is design innovation (C4-G-Y-L-4)

In terms of building interest in learning, some respondents mentioned:

My prior knowledge is not good, but I am very interested in design work. I am very grateful that this stage of study has helped me discover my strengths and I have become more interested in learning. (C1-B-N-L-5)

In terms of finding a learning model that suits them, some respondents mentioned:

I don't know what the right way is for me. I feel like I don't fit in with the school, and I don't know what to do. (A1-B-Y-L-6)

4.4. The social construct

As Kristine and Junita (2022) said [78], schools should not only focus on learning and achievement, but should also consider students' overall development. The consulting needs of the social construct also reflect that students acquire new ways of communicating with the outside world with a growth mindset [47,54], such as establishing a social circle [4], strengthening peer relationships [79], learning to protect oneself, and coping with challenges brought about by environmental changes [53,80]. This study also verified the needs of the above conclusions, and found that the respondents' needs for advice mainly focused on establishing social circles and peer relationships (11 times) and responses to social challenges (8 times). Unlike the other three compared constructs, the demand for counseling and advice in the social construct was wider, which also concurred with Maaßen's (1993) view of diverse contacts with new environments [81]. For example, in terms of establishing social circles and peer relationships, one respondent mentioned:

Communication is for people with different abilities, different thoughts, with different means of communication. (B4-G-N-S-1)

In terms of addressing social challenges, one respondent mentioned:

If I encounter this situation again, it will definitely be better to change to another way of dealing with it. (C2-B-Y-S-2)

In terms of positive interaction with teachers, one respondent mentioned:

The biggest achievement is that he (the teacher) did not treat us as children after that. In the class, our opinion will be asked in advance before things are decided. (B4-G-N-S-3)

In terms of adapting to the new environment, one respondent mentioned:

Generally speaking, everything is ok. The dormitory is a bit cramped, but we'll get used to it eventually. (A1-B-Y-S-4)

In terms of self-protection, one respondent mentioned:

When things happen, people feel scared because no one told us how to avoid these injuries. (A3-G-Y-S-5)

5. Conclusions and discussion

5.1. Conclusions

This study concluded three results through qualitative research on the academic counseling needs of students majoring in art and design in a Chinese higher vocational college. First of all, the consulting needs of Chinese students are obviously concentrated on the learning-related construct, followed by the individual, organization, and social constructs. This result was not consistent with the findings for German students who believed that the individual and organization constructs of counseling needs were more important than the learning-related and social constructs [40]. However, it reflected the actual situation of students in Chinese vocational higher education. The prioritization of learning-related issues and the concentration of consultation needs in three aspects of understanding the majors studied, setting and realization of academic goals, and understanding the curriculum and curriculum system reflected that students were concerned about the insufficiency of what they had learned before entering school, which caused insufficient professional understanding and lack of psychological preparation for the challenges of their majors and courses studied. The subsequent

arrangement of the three constructs is consistent with the results of Trautwein and Bosse's research on German students, and also reflects the consistency in the direction of the counseling needs of Eastern and Western college students aged 18–21 in their adolescence when coping with university challenges.

Secondly, through the feedback of the subjects, the study found that students paid more attention to whether they could combine their own needs and make suggestions to deal with specific problems. The best form of advice was to help students make autonomous decisions by discussing and providing solutions to problems. Thirdly, through feedback, the differences in gender and prior painting skills led to significant differences in the academic counseling needs of students majoring in art and design. For example, female students seemed to have more advantages in establishing peer relationships and positive interactions with teachers, so their need for counseling and advice was less urgent than that of male students. However, students who lacked prior knowledge of painting at the time of admission had a significantly stronger desire for counseling in terms of learning-related constructs and coping with stress than students with a basic foundation in painting. Therefore, it is necessary to differentiate the academic counseling needs of students with different individual backgrounds and conditions.

5.2. Contributions

Focusing on the reality of China's higher vocational education, this study used Knowles' demand theory to help explain Trautwein and Bosse's academic counseling demand model, and clarified students' information needs and expectations with qualitative research. By making theoretical contributions, this study provides practical significance for higher vocational colleges to improve the behavior, methods and content of counseling by analyzing students' counseling needs. The study results can also be applied to art design-related or similar majors, making the psychological counseling work in higher vocational education more targeted, and providing theoretical support for higher vocational colleges to improve the behavior, methods, and content of counseling. The results of this study make the counseling and relative working in higher vocational education more targeted, and provide more efficient solutions for students to effectively cope with challenges during college.

5.3. Suggestions

For the academic counseling work of students majoring in art and design in higher vocational colleges, the school can strengthen its work in the following aspects: (1) Establish an independent academic counseling institution in the school or form a coordinated counseling mechanism for academic counseling between counselors and professional teachers, from the four constructs of individual, organization, learning-related and social, to jointly promote the all-round development of students. (2) Academic consultants are not only university faculty, but also practitioners in industry or senior students. It is especially important to note that the role of peer guidance among students is often more direct [53]. (3) Academic counseling and guidance related to learning need to be placed at the priority level and be focused on. The intrusive manner of advice on institutional administration should be decreased; rather, support can be provided to students through individualized guidance [21], as well as two-way interaction between counselors and students [78]. Reliability and empathy are keys to success in academic counseling work [82]. (4) The academic consulting needs of students are also changing. Before carrying out consultation and suggestion activities, consultants should fully conduct needs analysis on the individual conditions of different students [83]. (5) Coordination between advisors should be strengthened to avoid situations where advisors give different advice to students for the same event due to their different backgrounds and expectations [84]. It is not entirely the students' fault that they cannot adjust to university life. They need someone to guide them to make the necessary adjustments. Academic counseling is to jointly find a way to solve students' anxiety and problems. It is not only a management activity, but also a process of stimulating students' deepest potential.

5.4. Limitations and future research

Based on grounded theory, this study systematically analyzed the demand factors of Chinese higher vocational art and design majors for academic counseling. It has a certain reference value for promoting the academic development of higher vocational art and design majors and the practice of consulting and advice in colleges and universities. Although the selected schools and the 12 students in this study were representative to a certain extent, there are still some limitations: firstly, when grounded theory was adopted, in the most idealized situation, the relationship between constructs could be identified clearly, and then a new theoretical model or index system could be built. However, not all grounded research has the means to achieve this goal in one study. This study encountered this situation. The failure to construct a new theoretical model is therefore one of the limitations of this study. Therefore, in future research, quantitative research can be used to further deepen understanding of the issues and propose a new theoretical framework.

Secondly, this study only focused on students majoring in art and design. In the future, similar research methods can be adopted to study students of different majors, and to expand the exploration of the similarities and differences of counseling needs of students of different majors. Furthermore, the method of data collection in this study was also limited. The critical incidents technique method emphasized that selected events represented more critical cross-sections in the process than a complete longitudinal narrative, so it is more suitable for capturing the width of consulting needs rather than describing the depth of consulting needs. Therefore, future research can improve this deficiency by increasing the diversity of the sample or using follow-up interviews.

Thirdly, the key event collection method adopted in this data collection emphasized particular selected events. Compared with the complete longitudinal narrative method, more findings representing the key cross-section in the process would be more suitable for capturing the needs of consultation. The breadth of this study is not suitable for in-depth description of the depth of consulting needs,

so there are certain limitations. In this regard, future research can improve this deficiency by increasing the diversity of samples or using follow-up interviews.

Fourthly, in addition to academic counseling, students' physical and mental health and well-being also need to be paid attention to by educators. Good health and well-being are also treated as one of the sustainable development goals of the United Nations. Therefore, both academic and practical states should receive more attention, especially during the recovery period under the dramatic changes of the epidemic. Although numerous studies have pointed out many viewpoints through review, empirical research or conceptual analysis, a large number of students need support. Therefore, in the follow-up research, it is suggested that there should be more exploration of students' poor learning, health and well-being, maladaptive behaviors, traditional or emerging behavioral addictions, and so on, as a basis for formulating plans or strategies.

Ethics approval statement

This study was approved by the Ethics Committee of Hainan Vocational University of Science and Technology (HKD-2022-32, Date of approval: June 13, 2022). All participants in this study provided informed consent to participate in the study.

Data availability statement

The data that support the results presented in this paper are available from the corresponding author, upon reasonable request.

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Statement regarding the use of artificial intelligence and artificial intelligence-assisted technologies

This study did not use artificial intelligence or artificial intelligence-assisted technology in the writing process.

CRediT authorship contribution statement

Ning Wang: Writing – original draft, Validation, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Jian-Hong Ye:** Writing – review & editing, Writing – original draft, Supervision, Resources, Project administration, Methodology, Funding acquisition. **Wanli Gao:** Writing – review & editing, Validation, Software, Data curation. **Yi-Sang Lee:** Writing – review & editing, Writing – original draft. **Lin Zeng:** Writing – review & editing, Validation, Software. **Li Wang:** Writing – review & editing, Visualization, Software.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Ning Wang reports financial support was provided by Guangdong Teachers College of Foreign Languages and Arts. Jian-Hong Ye reports administrative support was provided by Beijing Normal University. Ning Wang reports a relationship with Guangdong Teachers College of Foreign Languages and Arts that includes: employment. Jian-Hong Ye reports a relationship with Beijing Normal University that includes: employment. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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