

A Study on Influencing Factors of Online Learning Experience of Conservatory Students

Xinxin Kang^{1,2,a}, Yong Nie^{2,b*} (corresponding Author)

¹Informationize Office, Xi'an Conservatory of Music, Xi'an, Shaanxi, China

²Department of education, Shaanxi Normal University, Xi'an, Shaanxi, China

^akangxinxin@xacom.edu.cn, ^bny19@163.com

Abstract

Online learning experience is an important research direction of online learning in recent years. It is important to explore the key factors of online learning experience and their structural relations to improve learners' online learning performance. Aiming at the special group of conservatory students, it is of great significance to understand the key factors affecting the online learning experience of conservatory students to promote the online teaching practice and improve the learning results of conservatory students. Firstly, this study identified the influencing factors of online learning experience of conservatory students through literature research and interviews, which are divided into 14 indicators from 5 dimensions: learners, platform function, course content, teachers, and interaction support. Then, a questionnaire was developed for investigation. Through SPSS data analysis and AMOS structural equation modeling, the structural relationship model of influencing factors of online learning experience of conservatory students was constructed. The results showed that the key influences on online learning experience of conservatory students are as follows: teachers' professional knowledge literacy, teachers' (teaching assistant team) support and service, content features, learning harvest, teacher-student interaction, self-learning ability and teaching strategies. Finally, some suggestions were put forward to improve the online learning experience of conservatory students.

Keywords: Online learning experience; Influencing factors; Conservatory student

1. INTRODUCTION

Online learning had become an important form of learning in Higher education in China [6], as well as the world. However, the actual effect of online learning has not reached the expected, such as insufficient enthusiasm of students, high dropout rate, learning efficiency decline, many teachers and students doubt that online learning can achieve the same effect as face-to-face teaching, effective online teaching is an important issue at present. As students are the subject of learning, paying attention to students' online learning experience becomes an important thinking fulcrum to measure the quality of online learning and accurately connect learning needs. At present, there are abundant researches on online learning experience of the whole college students, but there are few researches on conservatory students. Existing research results show that students of different types and disciplines have different online learning experiences and effects [13][17]. The curriculum of conservatory students has its particularity. In the interview with teachers and students

of conservatory students, the author found that most students agree that online learning is not limited by time and space and can review at any time after class, but not all students are willing to participate in online learning, and some students even have coping and resistance emotions. In order to promote online teaching practice in conservatory students, effectively support online course construction in music colleges and the design, implementation and evaluation of online learning, and improve students' learning effectiveness, this study selected students with online learning experience in conservatory students as survey objects to carry out empirical investigation. The following questions were studied in this paper:

- Clarify the influencing factors and the structure of online learning experience of conservatory students;
- Put forward specific suggestions to improve online learning experience of conservatory students according to the influencing factors.

2.LITERATURE REVIEW

This study selected CNKI and Web of Science as data sources, and found that at present, a large number of theoretical studies and empirical exploration have been carried out at home and abroad on the connotation of online learning experience, influencing factors and their structural relations, and measurement of influencing factors. Through literature review, it was found that domestic and foreign results related to influencing factors of online learning experience mainly include: Young B J studied the influence of individual differences among learners (including willingness and motivation, self-control ability, decision-making ability, technical ability, etc.) on online learning experience [15]. Liu Bin, et al. systematically discussed the structural relationship among influencing factors of online learning experience through literature research, and proposed that the key influencing factors of online learning experience mainly include learning environment, activity design, teachers (assistants), students' subjects and interactive behaviors [1], but did not prove it with data. M. Paechter, et al. investigated the online learning experience of 2196 learners and pointed out that the key factors affecting learning experience include online learning environment, online learning resources, learners' learning process, teacher-student and student-student interaction, and online learning effect [9]. Kyung-sun Kim, et al. explored the influence of teachers' information technology ability, learning style, teacher-student and peer interaction on online learning experience, and the results showed that teacher-student and peer interaction and information literacy could significantly predict students' online learning experience, while learning style had no significant impact on online learning experience [5]. Songlak Sakulwichitsintu, et al. investigated the effect of cooperative learning on online learning experience and explored how to design appropriate cooperative learning activities to improve students' online experience [11]. Shan Feng, et al. studied various factors affecting the online learning experience

of continuing education students majoring in art and design by means of questionnaire survey, interview and log analysis [3]. Chen Wuyuan, et al. studied the influencing factors of online learning experience of college students by means of large-scale questionnaire survey and small-scale qualitative interview during COVID-19 outbreak, and found that individual differences of students have a significant impact on learning experience, and teaching mode, interaction mode and course design have a direct impact on learning experience [13].

The results show that there are two directions: one is to analyze all factors as a whole [8] and explore the relationship between key factors [17]; The other is the influence of one or several factors, such as individual factors of students [15], information technology tools [18], interaction and collaboration [11] on online learning experience.

From the perspective of research methods, most researchers agree with the integration of various research methods, determining the research method: questionnaire survey and auxiliary interview as supplementary and supplement, in order to analyze the factors affecting online learning of conservatory students in a more in-depth and objective way.

3.PROCESSES AND METHODS

3.1. Collating influence factors

Based on literature review and interviews with 22 students, the influencing factors and their dimensions were preliminarily determined. The factors include 5 aspects and 17 factors, which are learners, curriculum environment technology, course content, teachers, mutual assistance and cooperation. After that, the influencing factor model was finally constructed with 5 first-level dimensions and 14 second-level dimensions based on the advice of two experts. The specific description of each factor is shown in Table 1:

Table 1: Influencing factors and determining basis

| Category | Factors | Reference source |
|-------------------|--|---|
| Learners | Individual characteristics (IC) | Young B J, 2000[15] |
| | Self-learning ability (SA) | Bin Liu, etc., 2017[1] |
| | Self-discipline (SC) | interview |
| | Learning harvest (LM) | Paechter M, etc., 2010; |
| Platform Function | Platform design and function (FD) | Robert Rubinoff, 2004 [10] |
| | Network status (NC) | interview |
| Course Content | Course structure and organization (CS) | Ning Wang, etc., 2014[7] |
| | Content features (CR) | Udo G J, etc., 2011; [12] |
| Teachers | Online teaching ability (TA) | Yujun Jiang, etc., 2019 |
| | Teachers' professional knowledge literacy (PK) | interview |
| | Teaching Strategies (IS) | Songlak Sakulwichitsintu, etc., 2015 [11] |

| | | |
|---------------------|--|-------------------------------|
| Interaction Support | Teacher-student interaction (TS) | Weiping Wang, etc., 2020 [14] |
| | Peer aid and collaboration (PI) | Kyung-SunKim, 2005 [5] |
| | Teachers' (teaching assistant team) support and service (LS) | Feng Shan etc., 2018 [3] |

3.2. Compile the questionnaire

The measurement of learning experience generally includes questionnaire measurement, learning log behavior analysis and other methods. Hu Yongbin, etc. developed a smart classroom learning experience evaluation scale with high reliability and validity [16]. He Chun independently compiled questionnaires to investigate the learning behaviors and feelings of MOOCs participants of college students [2]. Reference existing questionnaire and conservatory students to "online learning, what factors do you think will affect your learning experience" the interview subject, in determining the factors affecting dimensional framework, draw up the first draft of the questionnaire, in order to ensure the quality of the questionnaire, this study invited famous music lessons for an information rich teaching experience, associate professor, an expert in education informationization, Two students majoring in master of music art have revised and improved the content of the questionnaire for many times. According to experts' opinions, the final questionnaire of "Questionnaire on Factors Affecting online Learning Experience of Conservatory Students" has been revised. There are 43 questions in 3 parts. The first part consists of 4 single choice questions (know about gender, major, grade, and participated in several online courses of music/dance) and 1 multiple choice question (which online learning platforms or apps you have used). The second part contains 37 choices, which have been modified and improved for many times to form the final questionnaire. The questionnaire adopted the Likert Scale, using five steps.

3.3. Research Process

3.3.1. The overall situation of the research object

With the help of the counselors of Y School, 323 questionnaires were collected through the platform of Wenjuanxing. Delete the answer sheets whose answer time was less than 120 seconds, delete 80% of the answer sheets which selected the same answer, and delete the questionnaires which answered that they had not studied online courses of music/dance (including professional theory or practice). Finally, 246 valid questionnaires were obtained, with an effective rate of 76.16%. Boys accounted for 38.6%, girls accounted for 61.4%; Freshmen 25.6%, sophomore 8.5%, junior 23.2%, senior 29.3%, graduate 13.4%. The proportion of students who have learned 1-3 courses is 50.41%, that of students who have learned 4-6 courses is 28.86%, and that of students who have learned 7 or more courses is

20.73%.

3.3.2. Data processing and analysis

a) Reliability and validity analysis: Cronbach's Alpha test method was used to verify that the overall Alpha coefficient of the questionnaire was 0.954, and the Alpha values of each secondary dimension were between 0.75 and 0.915, respectively. Then, exploratory factor analysis was used to test the validity of the questionnaire construction. The KMO of the analysis scale was 0.947, and the Bartlett sphericity test (Bartlett) chi-square value was 6932.204 ($P=0.000<0.05$), which passed the significance test of 1%, indicating that the scale had good significance and was very suitable for factor analysis.

b) Principal component analysis: The principal component analysis adopted The Kaiser normalized maximum variance method, and the rotation was convergent after 10 iterations. The cumulative explanatory variation of the extracted five factors was 70.386% ($> 60\%$), indicating that the construction validity of the extracted factors was good. Then, according to the rotated component matrix, the items with inconsistent factor loads were deleted: IS3, FD2, LS4, LM4 and NC2. The factor loads ranged from 0.663 to 0.848. In this case, the whole scale had good construction validity, indicating that it could be analyzed.

c) Descriptive statistical analysis: SPSS software was used to conduct descriptive statistics, and 14 variables affecting students' online learning experience were processed. Mean value, standard deviation and variance were calculated respectively, and the analysis results were listed from small to large according to the mean value (see Table 2). It found that the most important factor affecting online learning experience is teachers' professional knowledge ($M=4.5989$), and the least important factor is students' self-control ($M=3.722$).

d) Determine the key factors that affect the online learning experience: In order to further understand the key factors affecting students' online learning experience, the mean values of each influencing factor were paired in order from small to large (see Table 3). The t-test results of paired samples showed that the course structure and organization were significantly different from teachers' professional Knowledge Literacy ($P=0.008$). Therefore, seven factors are identified as the key factors affecting the online learning experience of conservatory students, including teachers' professional knowledge literacy, teachers' (teaching assistant team) support and service, content features, learning harvest,

teacher-student interaction, self-learning ability, and teaching strategies, while the rest are secondary factors.

Table2: Descriptive statistical analysis of factors influencing online learning experience

| | Range | Mini | Max | Average | standard deviation | variance |
|-------------|-------|------|-----|---------|--------------------|----------|
| SC | 4 | 1 | 5 | 3.722 | 1.162 | 1.35 |
| NC | 4 | 1 | 5 | 4.205 | 0.742 | 0.551 |
| IC | 3.5 | 1.5 | 5 | 4.213 | 0.755 | 0.57 |
| PI | 4 | 1 | 5 | 4.215 | 0.799 | 0.639 |
| FD | 4 | 1 | 5 | 4.228 | 0.853 | 0.728 |
| TA | 4 | 1 | 5 | 4.284 | 0.724 | 0.524 |
| CS | 4 | 1 | 5 | 4.327 | 0.807 | 0.651 |
| IS | 4 | 1 | 5 | 4.366 | 0.768 | 0.59 |
| SA | 3.25 | 1.75 | 5 | 4.367 | 0.648 | 0.42 |
| TS | 4 | 1 | 5 | 4.409 | 0.746 | 0.556 |
| LM | 4 | 1 | 5 | 4.47 | 0.711 | 0.506 |
| CR | 3 | 2 | 5 | 4.52 | 0.594 | 0.353 |
| LS | 3 | 2 | 5 | 4.52 | 0.648 | 0.42 |
| PK | 4 | 1 | 5 | 4.598 | 0.625 | 0.39 |
| Number: 246 | | | | | | |

Table3: Paired sample test

| | Paired difference | | | | t | Sig (two tails) |
|-------|-------------------|--------------------|-------------------------|-----------|-------|-----------------|
| | Average | standard deviation | 95% confidence interval | | | |
| | | | The lower | The Upper | | |
| SC-NC | 0.484 | 1.196 | -0.134 | 0.144 | 0.073 | 0.942 |
| NC-IC | 0.008 | 0.921 | -0.124 | 0.108 | 0.138 | 0.89 |
| IC-PI | 0.002 | 0.537 | -0.07 | 0.065 | 0.059 | 0.953 |
| PI-FD | 0.012 | 0.85 | -0.119 | 0.095 | 0.225 | 0.822 |
| FD-TA | 0.056 | 0.568 | -0.127 | 0.015 | 1.549 | 0.123 |
| TA-CS | 0.044 | 0.616 | -0.121 | 0.034 | 1.107 | 0.269 |
| CS-IS | 0.039 | 0.734 | -0.131 | -0.054 | 0.826 | 0.008 |
| IS-SA | 0.001 | 0.679 | -0.086 | 0.084 | 0.023 | 0.981 |
| SA-TS | 0.042 | 0.624 | -0.12 | 0.037 | 1.047 | 0.296 |
| TS-LM | 0.061 | 0.586 | -0.135 | 0.013 | 1.632 | 0.104 |
| LM-CR | 0.051 | 0.46 | -0.109 | 0.007 | 1.734 | 0.084 |
| CR-LS | 0 | 0.519 | -0.065 | 0.065 | 0 | 1 |
| LS-PK | 0.077 | 0.452 | -0.134 | -0.02 | 2.681 | 0.41 |

3.3.3. Construct the hypothesis model of influencing factors

In order to further clarify the relationship between the influencing factors models of students' online learning experience, AMOS was used to build a preliminary model of influencing factors of online learning experience, and maximum likelihood estimation was used to estimate the parameters of the model to further modify the path. Then, "violation estimation test" and "fitting index test" were carried out respectively, and the GFI index of the model did not pass the test after comparing with the recommended fitting index. In order to obtain better goodness of fit, the MI correction model was used to expand the model.

It was decided to add a correlation path between e9 and e19, e3 and e19 error variables, and each fitting index of the model reached the ideal standard. The goodness of fit is good (CMIN/DF=2.589, GFI=0.9, RMR=0.035, NFI= 0.901, IFI=0.936, TLI=0.920, CFI=0.936, RMSEA=0.079), indicating that the model proposed in this study is reasonable. As can be seen from Figure 1, teachers' professional knowledge literacy has a significant positive impact on teachers' (ta team) support and service (0.943) and teaching strategies (0.732). Teaching strategy has a significant positive impact on content features (0.988), and teacher (teaching assistant team) support and service has a significant positive impact on teacher-student interaction (0.863).

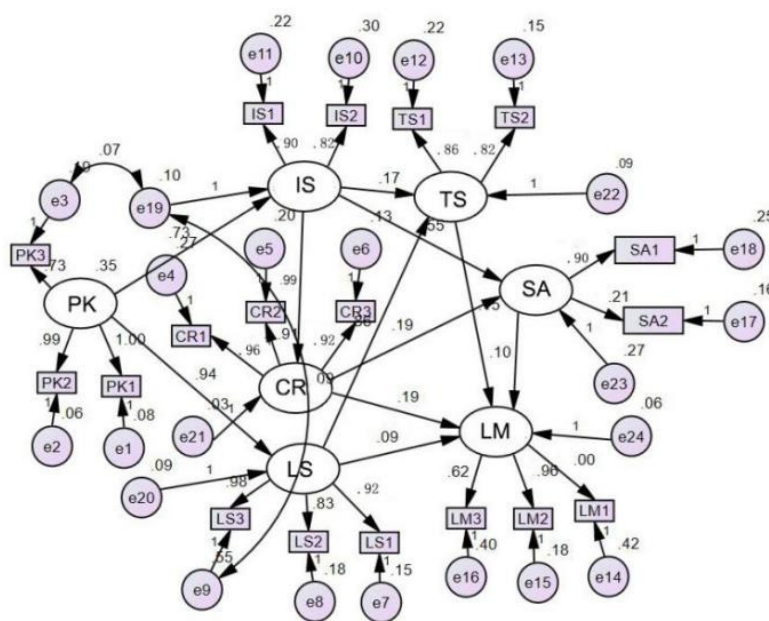


Figure 1: Structural Relationship Model of influencing Factors of Online learning Experience (revised)

4.CONCLUSIONS

The influencing factors of online learning experience of conservatory students can be divided into five aspects: learners, platform function, course content, teachers, and interaction support. Teachers' professional knowledge literacy, teachers' (teaching assistant team) support and service, content features, learning harvest, teacher-student interaction, self-learning ability, and teaching strategies are the key factors influencing students' online learning experience. Teachers' professional knowledge literacy is the most fundamental factor, and learning harvest is the most direct factor. Combined with the interview, it can be explained as follows:

4.1. From the perspective of teachers

It involves the following factors: teacher's professional knowledge accomplishment, support and service of teacher (teaching assistant team), teacher-student interaction, and teaching strategy: This may be because, for a long time, the teaching of conservatory students has followed the traditional teacher-apprentice production as the main teaching mode. Under this mode, students' artistic accomplishment and performance skills are greatly influenced by teachers' words and deeds, and students have greater dependence on teachers. Therefore, we often see a situation, It is the artistic style that students often project onto their mentors in their music and dance performances.

4.2. Course Perspective

It involves content features. For music and dance practice courses, the current course videos often fail to fully reproduce the teaching content of performing arts,

severely shrinking the teaching information conveyed and affecting students' learning and understanding. This requires us to explore the online teaching mode suitable for music majors, and appropriately introduce motion capture technology and virtual reality technology, which can make the demonstration and decomposition of action clearer and more intuitive, give full play to the advantages of emerging technologies, and promote the integration of information technology and music education and teaching innovation development.

4.3. From the perspective of students themselves

Related to the factors of learning harvest and self-learning ability, we need to start from improving students' learning ability, appropriately introduce some learning methodology guidance, pay attention to students' sense of gain, improve students' sense of achievement in learning, stimulate their interest in learning.

5.DISCUSSION AND SUGGESTIONS

5.1. Adhere to the concept of life-based, continuously improve teachers' comprehensive professional quality

In view of the influence factors of teachers' professional accomplishment is the most fundamental knowledge, teaching strategy is the key influence factors, the school need comprehensive plan as a whole, according to the construction of the school vision and goal orientation, will the teacher competency and intelligent digital era need teaching competence into the teachers' professional development requirements, a

planned and step-by-step implementation, practical and effective to carry out the teachers' teaching ability training, Explore the mode of improving teachers' professional ability that is suitable for the cultivation of musical art talents and the needs of school development, and promote the comprehensive improvement of teachers' teaching and scientific research ability.

5.2. Based on the characteristics of the subject, carry out the practice of "Internet + music education"

Considering that learning harvest is the most direct influencing factor, which will directly affect individuals' concentration and investment in online learning [4], the reform of online music teaching should take satisfying students' sense of achievement as the starting point and foothold. One is to promote the innovation of professional music education concept and teaching methods, the reform of teaching methods, give full play to the advantages of emerging technology, explore online teaching mode suitable for music major, promote the integration of information technology and music education and teaching innovation development; Second, based on the practice of innovation and creation, based on the project, the new way of original creation by teachers and students or collaborative creation by teams is adopted to form the art work innovation and creation practice with the main characteristics of "independence, exploration and cooperation". Finally, students are encouraged to participate in the construction and sharing of online course teaching content, which provides a source for the construction of course resources, improves students' sense of gain and achievement, stimulates students' innovation enthusiasm and potential to the maximum extent, and improves students' comprehensive innovation and practice ability.

5.3. Closely follow the core element of "content is king", create a distinctive music Gold Courses

In view of the fact that course content features are the key influencing factors, in the interview, students reported that the current online music course resources are few and the selectiveness cannot meet their needs. The course resources are rich and easy to obtain, and the short and concise course videos are the biggest demands of interviewing middle school students. Therefore, we should give full play to the school's professional characteristics, establish an effective mechanism of online teaching course construction, actively explore and innovate the mode of co-construction and sharing of professional teaching resources, and build a group of self-built and distinctive online courses of music major to provide support and guarantee for students' independent learning and personalized learning.

5.4. Optimize the online learning community service support system, accurately meet the needs of students

Given that they are key influencing factors, which include teacher (teaching assistant team) support and services, teacher-student interaction, students' Self-learning ability. Mentoring and support from tutors were the best predictors of academic achievement and course satisfaction. Therefore, great attention should be paid to course maintenance in the course offering process, and the quality and efficiency of teaching service can be optimized with the help of emerging technologies, such as the introduction of intelligent tutors, intelligent learning partners and other systems. Through these means, technology can empower education, build a comprehensive curriculum service system, and provide students with precision learning support services.

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