Innovative Practices of Project "Recall": The Effect of Integration of Employment Big Data Analysis into the Classroom for the Training of Professional Talents

Chen Ji[1]*, Wei Zhao[2], Hongyu Lin[1]

[1]JiLin University of Arts, Changchun 130021, Jilin Province, China
[2]Sichuan Fine Arts Institute, Chongqing 401331, China

Corresponding author: Chen Ji, 123596668@qq.com

Abstract: With the emphasis on using technological innovation and digital transformation to generate new development momentum, the Ministry of Education issued the "Code for the Construction of Digital Campuses in Colleges and Universities" in March 2021, which clarified the talent training path for innovative exploration of education mode under the informatization condition. In the process of exploring new methods of talent training models in the digital age, this article uses employment big data to enter the classroom, triggering changes in classroom teaching interaction methods, and then accumulates summary records of a series of research experience, in the hope that more research can extend on this result.

Keywords: Teaching reform; Communication; Employment big data

1. Talent output orientation and the birth of the "Recall" project

In September 2019, the Ministry of Education proposed a reform policy based on "students' career development needs as the guide" and "talent training and employment linkage mechanism" in the process of supply-side reform of colleges and universities. At this time, the young major of digital media art is booming, and the media application planning major has just sent off its fourth class of graduates with a brand-new attitude. The Ministry of Education's talent output-oriented call has promoted the advancement of the "Recall" project [1]. The "Recall" project aims to investigate the employment status of graduates of this major. The original intention of the project was to use graduate feedback to guide the revision of the talent training plan. It is based on the consideration of judging the effectiveness of the talent training plan. In the "Recall" project, questionnaires are sent to graduates, and the graduates' work experience and experience in society for different years are used to infer the setting of talent training plans from the side. Although the "Recall" project could only see the status of

4-year graduates at that time, the questionnaire preliminarily determines the impact of talent training programs on graduates through the effectiveness of knowledge at the beginning of employment, the situation of job promotion of graduates, the location of employment, the industry, and other contents.

The 2019 survey rationally updated the talent training plan in the direction of media application planning in the dimension of data. It not only proved the feasible direction of the "talent training and employment linkage mechanism," but also proved that it is necessary to refer to the current situation of the industry to infer the talent training plan, which is an optimal method for current application-oriented undergraduate colleges to serve employment. Graduates are the group that is closest to the status of current students and have a high degree of reference value. Through employment big data, we can focus the broad industry scope into the industry segments that are currently produced by this major. Furthermore, the employment fields of graduates also infer the corresponding relationship between the goals set in the talent training plan and the employment exits of graduates, and also infer the knowledge structure that is mainly mastered by students in classroom teaching. The "Recall" project allows us to see that in addition to serving the top-level environment of student employment, the continuously accumulated employment big data can also be used for more purposes, such as the possibility of sinking data conclusions to the classroom level [2,3].

2. The impact of integrating employment big data into the classroom on the cultivation of talents

China's "14th Five-Year Plan" period has strengthened the "Recall" project research team's determination to sink employment big data to the classroom level. This is a proposition that is oriented towards serving national development and deepening the reform of talent training models. Its boldness is reflected in the fact that once the employment big data sinks into the classroom environment, the arrangement of classroom content will clearly show two characteristics: first is whether the teaching content meets the teaching objectives, second is whether the teaching objectives meet the employment needs. At the same time, with the help of information technology, matching graduate feedback with the classroom can evolve the construction and transmission of effective knowledge in the classroom, but it also updates the concept of "effective knowledge." "Effective knowledge" is not only a complete professional knowledge system, but also includes knowledge proportion matching that is suitable for students' employment in the classroom, as well as forward-looking content that is in line with industry development trends. In the Internet field, a similar study is "Khan Academy" [4]. Founder Sal Khan created software that generates questions for knowledge gaps, gives feedback, provides tips when needed, and allows for tracking the path to solution. The successful case of Khan Academy illustrates that the digitization of information can achieve "batch processing" of knowledge improvement. Unlike such research institutes that focus on examination points, this project focuses on using graduates' real employment environment information to influence the teaching content in the classroom. The information after sampling, sorting, selection, and analysis covers the industry, enterprise, and position dynamics corresponding to professional talent training, as well as the graduates' advanced trajectories, mapping the employment advantages and career advantages of the output talents on the full-cycle timeline, the shortcomings, the real-time adjustments to the knowledge focus, skills and tool selection, and creative practice processes of current students. This kind of course content configuration has immediate practical significance for current students.

In the feedback mechanism, we work with teachers in the professional direction based on the goals of the talent training plan to organize the courses into employment target groups. According to the semester goals, we clearly set the goal of completing basic employability in the third and fourth semesters, and completing planning thinking ability in the fifth semester. In the sixth semester, the goal of professional improvement is

completed and students are clearly handed over. As a result, the traditional classroom push-based teaching model has undergone motivational and goal-oriented changes from the student side. At the same time, when explaining the course objectives, teachers can analyze the social environment in which students learn the knowledge in the course, so as to achieve the goal of active knowledge acquisition. When employment big data is integrated into the classroom, it can integrate course knowledge points, teaching procedures, and in-class practical links with the social employment environment to the greatest extent, help students to master the knowledge urgently needed for employment, and greatly enhance students' employment competitiveness. It is a professional and in-depth solution that contributes to the society [5].

3. Experience in collecting employment big data and reflections on the "Recall" project

3.1. Macro level

Integrating employment big data into the classroom environment, from a macro perspective, three stages should be set, including the early stage, the middle stage, and the late stage. The early stages are as follows:

(1) Using information technology to accurately obtain objective information about employed students and industries in this major.
(2) Browsing and analyzing objective information in clusters to form clusters of analysis results.
(3) Presenting the analysis results dynamically and visually.

On the premise of paying close attention to the national informatization policy and actively responding to the Ministry of Education's teaching reform, the implementation team should apply the information results in updating teachers' classroom content, publish data closely related to students in real time, and obtain real-time feedback. While improving the motivation for knowledge absorption, a two-way feedback mechanism is established to reversely promote the healthy development of related industries, which is the middle stage. Lastly, there is the closed-loop evaluation and reflection stage, where the data analysis module is updated to better guide classroom content, and a regular update and transformation cycle is set.

When employment big data is integrated into the classroom, it triggers changes in teaching interaction methods, which breaks through the classroom reform model that mainly focuses on technical changes. The education trend in the smart era already has a good platform foundation. Whether it is the distribution and feedback of graduate survey information or the alignment adjustment of classroom content, it can all be carried out with high efficiency. Over time, employment big data can evolve from the early level of intuitive feedback to the level of comparative data. For example, early data can only reflect the distribution of employment in cities. As the number of questionnaires increases, the impact of teaching changes and guidance on students' employment cities can be compared. Employed students can form an alumni group, form a significant response to current students, and also form network information with the huge domestic job market. Such a mechanism greatly improves students' awareness of course content and the frequency of using knowledge [6].

3.2. Implementation level

After the collection and use of data are completed, a complete modular professional course teaching method with high accuracy should be compiled and completed. Education should be an effective knowledge guide and disseminator for each student, and accurately cultivate talents for society. From an implementation level, integrating employment big data into the classroom requires the following processes:

(1) Information collection
(2) Data analysis and modeling

(3) Data visualization and visualization model

(4) Application of data technology in classroom

(5) Evaluation, feedback, and update

(6) Formation of a stable, effective, and evolvable solution

3.3. Evolution and reflection

After nearly four years of evaluation feedback and updates, "Recall" project 2.0 came into being. The questionnaire design was completely upgraded based on a series of questions summarized over the past six years and the experience of the previous round of centralized surveys. It expanded the survey points but simplified the process approach to be adapted to the data collection model. This survey comprehensively collects information on graduates of this major in eight years, including employment cities, employment status, practical skills, urgently needed skills, career development needs, and other related information. The information is recycled, analyzed, and reorganized, and timely feedback is provided in the course content. "Recall" project 2.0 displays visual statistical data to students in two courses, updates teaching content, and provides feedback of course content updates to graduates. It is gratifying that the statistical work of "Recall" project 2.0 has encountered almost no resistance. A lot of data shows that students can greatly improve the frequency and scenarios of knowledge application when they are motivated to learn. For example, the positive feedback on the question "Can planning expertise be applied in life?" is as high as 90%. This question is not the main goal of the talent training program, but it is the particularity of planning as a professional knowledge. In the feedback from the first round of the "Recall" project of this major, the concept that "planners should be able communicators in life" was put into the classroom reform content. Therefore, during the teaching process, planning professional knowledge is integrated into life. How to apply it is a teaching method that is in-depth and simple. The thinking mode of applying knowledge in the planning profession has also been improved through the reform of this teaching strategy. In the past four years of teaching practice, this feedback has positively verified the effectiveness of employment big data feedback on classroom content [7,8].

The current teaching method of cultivating students to accurately serve society is significantly different from traditional classrooms. First of all, there is a gap between teachers imparting knowledge and students receiving knowledge in traditional classroom content. This gap arises because the goal of teaching knowledge and the motivation for receiving knowledge are inconsistent. Feedback data from graduates and industry feedback data should be utilized to establish a teaching goal for teachers to "teach this content because society needs it," and to establish a learning motivation for students to "learn this content because society needs it," to maximize the goals of "teaching" and "learning," and combined with professional teachers' ability to deconstruct and apply knowledge representations, a solution is formed to improve students' efficiency in constructing this knowledge, thereby making the cognitive transfer process more efficient.

4. Conclusion

From the data of the "Recall" project that sinks into the classroom, students may become lifelong learners. After opening-up the connection between graduates and the classroom, in addition to teaching construction that can truly and quickly reflect the current status of the industry, and lead a new possibility for students to return to campus and resume classes again, and this type of content has long been reflected in the "lifelong learning" section of the talent training plan. Now, relying on employment big data and classroom exercises can make this type of teaching content truly active and playing a real role. Only by fully integrating employment big data analysis with the country's education policy, the school's educational advantages, and the needs of employers

can we form a more practical and effective talent training quality course.

Funding

Disclosure statement

The author declares no conflict of interest.

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