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Research Article

Innovative Methods of Economic Management Education Based on the Industry-University-Research Collaboration Mechanism

Muyan Yu [1]
Nanyang Normal University

Abstract

In view of the obsolete teaching content of the economic management major and the disconnection between training mode and employment market, this paper surveyed the status quo of the economic management courses, and analyzed the features of economic management teaching, namely the excessively theoretical and old-fashioned teaching contents facing the large scale of the university freshmen. On this basis, an innovative teaching mode of industry-university-research collaboration was proposed to make up for the shortcomings of the existing teaching mode. This mode can effectively improve students' practice and innovation abilities, enhance the quality of economic management teaching, and provide effective programs for the economic management teaching reform.

Keywords

Economic Management • Industry-University-Research • Educational Innovation • Innovation

[1]**Correspondence to:** Muyan Yu (MA), School of Economics and Management,Nanyang Normal University, Nanyang 463000, China. Email: benben3955951@aliyun.com

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Economic management is a comprehensive major that integrates accounting, western economics, statistics, business management and other disciplines (Gijselaers *et al*., 1995). With the deepening of global trade after China's accession to the WTO, academics and enterprises have been increasingly valuing the importance of the economic management major so that decision makers of enterprises have started to apply the economic management knowledge and tools in the analysis of the project feasibility to reduce risks. As the economic management major advances continuously, foreign universities and scholars generally believe that in addition to the basic theoretical knowledge in books, extensive out-of-school practice teaching plays an important role in the innovation and cultivation of talents, in which context the industry-university-research teaching mode has emerged (Fraser *et al*., 2011). As the practice and innovation ability of college students has been paid more and more attention from all walks of life, the cultivation of innovative talents has become the goal of teaching reform in major universities. For the highly application and practice-oriented economic management major, the industry-university-research teaching model should be strongly promoted (Devine, Jr & Adams, 1987)

The industry-university-research model emerged in the West. It is an integrated teaching model that combines industries, schools, and research institutions to exert their respective advantages. In this model, enterprises often serve as technology demanders, and scientific research institutions and universities provide technical support for enterprises, which improves students' practical and innovative ability while solving problems for enterprises. This model has been valued by major institutions of higher learning both at home and abroad, and has played an important role in promoting the cultivation of practical and innovative talents in recent years.

Analysis of Status Quo of Economic Management Teaching

The economic management industry requires a large number of talents and is demanding in their creativity and practical abilities. However, in recent years, enterprises have generally reflected that the graduates recruited cannot meet their requirements. From the perspective of teaching (Arza & Carattoli, 2017), the existing economic management major faces the following problems.

Insufficient Attention to Practice Teaching

The economic management major emphasizes practicality and innovation. However, social remarks on the graduates of this major generally believes that students' knowledge is inconsistent with the actual corporate needs, which is caused by many reasons (Davis & Tisdell, 1996). Domestically, universities adopt single and fixed evaluation model for the professional title and teaching performance, which cannot reflect the differentiated characteristics of various disciplines. In this context, a large number of teachers spend much time on project declaration and paper publishing and thus neglect the teaching. Also, knowledge is imparted mainly in the form of classroom teaching, but seldom by practical teaching that requires more time and efforts. At the same time, the practical teaching requires a lot of places and hardware and software equipment, making it

difficult to be carried out extensively. Then, students cannot be trained in practices, so their knowledge fails to match the actual needs of enterprises.

Lack of Teaching Ability of Faculty

The economic management is a relatively long-established industry and early set up in major universities, leading to aging faulty who present old-fashioned knowledge structure. Additionally, the economic management was divided into liberal arts in China at the early stage when less attention was paid to practices. Therefore, the elderly teachers lack experience in the enterprise or government economic departments, resulting in a lack of practical teaching in student training, reduction of students' interests and obsolete knowledge and methodology learnt. Meanwhile, teachers have relatively single professional skills, while the economic management is a relatively wide-ranging industry (Hopkins, Lal, Wiebe & Tweeten, 2010) that requires extensive knowledge. However, due to the lack of faculty in this major, many universities and colleges have lowered their threshold for the quality of teachers, resulting in insufficient academic qualifications and professional expertise of some teachers (Bourbeau *et al*., 2006). The statistics of economic management teachers in a province of eastern China in 2017 are as follows:

Table 1
Teachers Distribution

Degree	Quantity	Ratio
Bachelor	4312	32.1%
Master	7304	54.2%
Doctor	1802	13.7%

Out-of-date Curriculum Design

First of all, the existing economic management textbooks in colleges and universities are generally for comprehensive undergraduate education purpose, which features extensive knowledge but lack of key points and theoretical orientation, leading to less practical content. Also, the textbooks are updated in a slow manner, which does not reflect the importance attached to the practical content of economic management in foreign academic circles. At the same time, with the rapid development of the Internet, artificial intelligence and big data, statistics and other economic management subjects have undergone a lot of changes in practical applications. Therefore, the teaching design should include the latest scientific and technological achievements, and the talents should also meet the requirements of the management professionals in the data ability in the era of big data. For this reason, the curriculum practice and extracurricular practice should be integrated to cultivate students' statistical thinking and statistical ability, improve their practical ability and problem-solving ability, and generate the application-oriented talents that are urgently needed by the economy and society in the era of big data based on the professional characteristics (Kauppinen, Sintonen, Vilkka &Tukiainen, 1999).

Requirements of Enterprise to Keep Pace with the Times

Modern enterprises, in face of fierce competition, demand for more and higher-quality talents. The core requirements of modern enterprises for economics graduates are the following. 1) Apply what they have learned.

After recruiting graduates, the company hopes that students can apply what they have learned, and quickly convert the theoretical knowledge leant in colleges and universities into productive forces. Through the shortest training, they can quickly start production and bring benefits to enterprises. Therefore, graduates are required to master solid theory and the ability to identify and solve problems. 2) Strong comprehensive ability. Economic management is a wide-ranging discipline. When recruiting such professional staff, most of them will engage in comprehensive positions. These positions require employees to be quipped with rich knowledge and fast learning ability, and quickly apply the learned knowledge into daily work. The statistics on the economic management talent gap in China in 2018 are as follows:

Table 2
Talent Gap

Profession	Quantity (thousand)	Graduate (thousand)
Banking	251	176
Business Administration	362	254
Marketing	243	204
Accounting	342	298
International trade	271	215

The Industry-university-research Model for Economic Management

Optimize Curriculum Design

Curriculum design is one of the key links in determining the quality of teaching. In the promotion of the industry-university-research model, we should increase the proportion of practice in the teaching materials, set up the curriculum by practical work, and lead the teaching with the tasks of actual enterprises. Also, we can establish with a curriculum design committee with off-campus enterprise practitioners, and transform the teaching from the single professional education to the "generalist + innovator" education and from the theoretical education far from practice to "practice + innovation" education (Davis & Bryant, 2010). In the selection of teaching materials, it depends on general courses, professional basic courses and professional core courses. The general courses are designed to cultivate the basic knowledge of students in university education, while the professional basic courses cultivate students' basic professional skills. The professional core courses need to fully absorb the latest theoretical and practical achievements of the international academic community in recent years to replace the old and outdated knowledge points and keep pace with the times, so as to lay an important foundation for students in the industry-university practices.

In the curriculum weight and teaching effectiveness evaluation system, the weight of off-campus practice should be increased. The main goal of the off-campus practice is to enable students to get in touch with the company under the leadership of the teacher to feel the frontline market and management, clarify their learning objectives, and understand future work. While students participate in the actual production of the enterprise, universities can also invite excellent management to give detailed instruction to the students and comprehensive guidance from the aspects of market dynamics, internal management methods and process management tools. At the same time, we should establish an evaluation system for off-campus practice, so that enterprises can score and guide students, and feedback the actual situation of students to the university in real time on a monthly

and half-month basis. In this way, universities can track the performance and improvement of students in the first time and take corresponding measures, such as strengthening the in-class training part and arrange it in class teaching. The core is to keep pace with the times. Under the background of big data and artificial intelligence, various data statistics software such as spss and Minita should be learnt to assist in the economic management to lay the foundation for potential off-campus practices (Fang & Bohringer, 2006). In addition to the curriculum system, competition-based training can also be arranged. Universities can organize regular competitions every year to fully mobilize students' practical ability and innovation, allow multiple students to initiate groups spontaneously to complete cases and participate in competitions. In the form of competitions, students' practical ability can be improved.

Faculty Training

As mentioned above, the faculty of colleges and universities lacks certain industrial training, which leads to their own weak practical ability and shallow understanding of the industry-university-research model. Therefore, the training of teachers in colleges and universities also needs to take into account the industry-university-research model. Especially for the industry-university-research integration, teachers need to change their ideas and construct the teaching system according to practical innovation and break through the traditional teaching mode. Specific measures can be seen as follows. 1) Urge teachers to encourage students to participate in national competitions such as the Challenge Cup Entrepreneurship Competition, to train their ability to solve practical problems in practical cases. 2) Cultivate a special internship tutor as the person in charge of the internship of the student to the company every year, and improve the effect of the internship through the years of experience. 3) In the form of rehiring and part-time, some managers with strong ability in the industry can be invited to teach at the school or give lectures to promote the improvement of the comprehensive quality of students and the teachers' teaching level. 4) Encourage the a group of outstanding teachers to visit advanced enterprises or academic institutions at home and abroad for further study and exchange, and bring advanced overseas teaching methods and concepts back to the university.

Create A High-quality Industry-university-research Base

The core content of the industry-university-research collaboration is to provide students with a good practice place. The long-term stable practice base is the best choice. Universities can develop the industry-university-research base in various forms, such as cooperation with the government. Universities and enterprises can jointly fund the premise construction and set up school-run factories. In the process of implementation, college teachers sign contracts with enterprises to further convert the commercial benefits of the industry-university-research fruits into base operating funds and realize the smooth operation of the industry-university-research base. The training content needs to be targeted and comprehensive. The training base needs to include all aspects of the major so that students can find internship that fits their professional direction. At the same time, the industry-university-research base should also be open to the social enterprises. It will bring employment opportunities to students and additional benefits such as rent to the base.

In addition to the base, we can also create a variety of models. For example, the studio system relies on enterprises or companies to help competent students and social employees to establish studio incubation projects. In this studio model, students, once entering the studio, serve as the company's employees in advance, and the studio can also obtain more cost-effective labour costs. This model achieves zero distance between teaching and work, and can further stimulate students' interest in learning and entrepreneurial awareness. In addition, an order form can be established in the internship base, so that the college can sign an order contract according to the requirements of the enterprise for talents. Colleges will take the lead in organizing the recruitment of students to complete the outsourcing project of enterprises as part-time. This model can effectively target the needs of enterprises and enable students to personally understand the specific needs of the large enterprises through the completion of the order directly, so as to improve their initiative and enthusiasm and reduce the training period after the students join enterprises for work.

Update Teaching Ideas

The industry-university-research model requires a shift in the school's educational philosophy to open-ended teaching to encourage students to take the initiative to start work and quickly transform the knowledge gained in the class into practical work. Open teaching is used to create a two-pronged atmosphere in school and off-campus practice, allowing students to learn theoretical knowledge spontaneously while applying knowledge to practical problems. In this way, they can improve their ability to solve practical problems, and realize their distance from the market demands. Through the market review, they can re-evaluate and understand their actual capabilities, and constantly update their knowledge systems to meet the needs of enterprises.

At the same time, the teaching objectives of colleges and universities have shifted from basic knowledge teaching to employment orientation. The employment-oriented talent cultivation require colleges and universities to link the curriculum with the actual needs of the profession, constantly listen to the needs of enterprises, and transform the needs to the curriculum design. In the lower grades, basic knowledge and theoretical education are prioritized, while the senior grades should focus on teaching content driven by practical cases in work, course development with professional standards as the goal, and breakthroughs in the traditional teaching mode. Also, we can incorporate the vocational qualification certificate into the credits, and encourage students to participate in the valuable vocational qualification examinations at school, such as certified public accountants, senior accountants and other certificates that are generally recognized in the industry, to improve students' employment competitiveness.

Conclusion

Economic management is a hot major nowadays. Enterprises have increasing demands for economic management talents but have relatively low satisfaction for college graduates in this major. On the other hand, the existing talent training model in colleges and universities generally cannot meet the market demands. This paper analyzed the status quo of the economic management teaching, conducted in-depth study of the core

appeal of enterprises, and proposed the industry-university-research teaching mode to make up for the existing teaching deficiencies. This model can effectively enhance the students' practical and innovative ability and provide an effective program for the economic management education reform.

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