



# Development of Vocational Education in Contemporary China: New Trends and New Dilemmas

Yijiu Han<sup>1</sup>, Yueying Hu<sup>2</sup>(✉), and Yusi Huang<sup>3</sup>

<sup>1</sup> Department of Culture and Media, Xichang College, Xichang 615099, Sichuan, China

<sup>2</sup> School of Foreign Languages, Nanjing Institution of Technology, Nanjing 211167, Jiangsu, China

x00204190203@njit.edu.cn

<sup>3</sup> The New Channel, Hangzhou 310000, Zhejiang, China

**Abstract.** Vocational education plays a vital role in the economy and promotes economic growth. After the double reduction policy promulgating, China emphasizes vocational education. This article reviews the development of Chinese vocational education—the new dilemmas and new trends. Firstly, this paper has a deeper insight into the influence of vocational education on socio-economic development. This paper finds the three advantages of vocational education using the previous research data. Then, it reveals the dilemmas of the development of vocational education in China. Finally, it finds the new trends and strives to find some new solutions. Then, observing the current social phenomenon, it's believed that it is a long and arduous journey to go before we can achieve a genuinely vocational education. There is no prejudice against the students who receive vocational education. In conclusion, it is a long and arduous journey to go before achieving a truly vocational education. There is no prejudice against the students who receive vocational education.

**Keywords:** Vocational education · Socio-economic · Dilemma · New trends

## 1 Introduction

Now, as China enters a new stage of development, industrial upgrading and economic restructuring are accelerating, and all walks of life have an increasingly strong demand for technical and skilled personnel. General Secretary Xi Jinping has stressed that “China’s economy needs to be supported by the real economy, which requires many professional and technical personnel and many craftsmen from major countries. Vocational education has a bright future.” Only by constantly improving the modern vocational education system and innovating vocational education models at all levels and types can more workers be encouraged to take the road of skill development and service to the country and promote the construction of a high-quality labour force.

---

Y. Han, Y. Hu and Y. Huang—These authors contributed equally.

© The Author(s) 2023

Z. Zhan et al. (Eds.): SEAA 2022, ASSEHR 675, pp. 515–525, 2023.

[https://doi.org/10.2991/978-2-494069-05-3\\_64](https://doi.org/10.2991/978-2-494069-05-3_64)

Future vocational education plays a vital role in the whole education system of China and shoulders the responsibility and obligation of providing necessary technical talents for the development of the country. Vigorously developing vocational education and promoting the full story of human resources are important ways to realise the power of human resources and promote the development of new industrialisation in China.

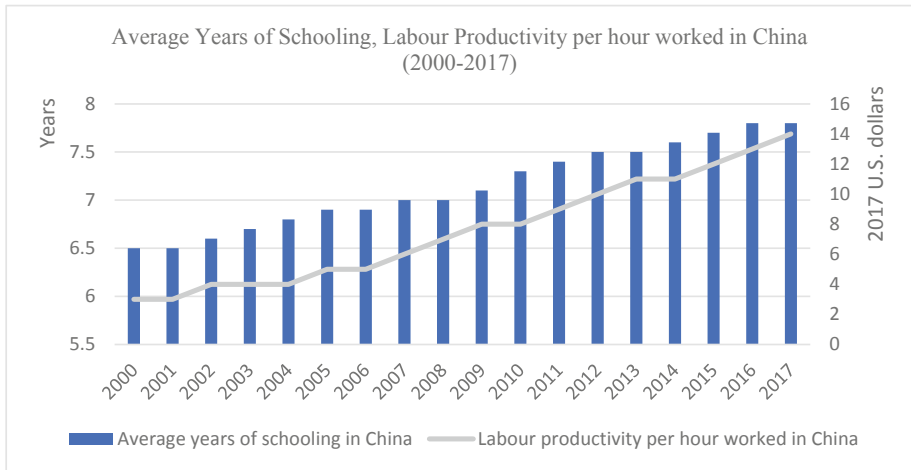
Tao Xingzhi once said that education is the foundation of a country. Therefore, if our government wants to develop better, it must attach importance to education and attach importance to vocational education at the same time. What is vocational education? In simple terms, vocational education lets the educatee obtain a particular occupation or production of labour that needs vocational knowledge, skills and professional ethics education. With the continuous development of the knowledge economy, vocational education is also undergoing profound changes. The penetration of general education into vocational education and the diversified development of vocational education makes vocational education become an essential part of the social education system; that is, with the development of the social economy, vocational education is critical in today's society and the new journey of our country's development. In the past 30 years, China has made great efforts to develop vocational education. Many scholars have already found that vocational education has become an essential part of the education system, and an independent vocational education system has also been formed. However, China's vocational education system is still relatively backward compared with developed countries. Vocational education can promote social and economic development, and there is great urgency to develop vocational education in China in this new era of rapid world economic development. Many scholars have found that vocational education has to be integrated with the economy and society and summarised its advantages, but have not pointed out the dilemma of developing vocational education in China today and the trend of future development. This article clarifies the impact of vocational education on the economy and society in contemporary social development trends in China while discussing the dilemmas of vocational education in today's political environment and predicting future development trends, filling a gap in vocational education research in this area.

Along with society's progress and the development of times, there is a lack of skilled talents from all walks of life in China, highlighting the importance of vocational education. Still, China's vocational education development in the process of problems, how to rational analyse and solve these problems is the primary research purpose of this article.

## **2 The Influence of Vocational Education on Socio-economic Development**

### **2.1 Improvement of Labour Productivity**

Education plays an important role in the economy and promotes economic growth. In turn, economic growth can support the education growth [1]. To demonstrate the contribution of education to labour productivity, Fig. 1 compares Average Years of Schooling (AYS) and Labour Productivity per hour worked in China in recent years. According to Our World in Data, AYS in China has gradually increased between 2000 and 2017, from 6.5 years in 2000 to 7.8 years in 2017 [2]. The other data set in the figure



**Fig. 1.** Labour productivity per hour worked and average years of schooling (2000–2017). **Source** Average Years of Schooling in China is from Our World in Data (2019); Labor Productivity Per Hour Worked in China is from Statista (2018)

is China's labour productivity per hour provided by Statista. Along with the growth of AYS, China's labour productivity worked rose from US\$3 per hour in 2000 to US\$14 per hour in 2017 [3]. The level of education positively impacts the increase in labour productivity.

As a special kind of education, vocational education has an indelible contribution to increasing labour productivity. Rehman and Dr. Mughal analyse technical education's impact on labour productivity using linear regression [4]. Their research shows that labour productivity increases by 37.2% for every 1% increase in skilled labour and decreases by 39.2% for every 1% increase in unskilled labour. It follows that skilled labour is the driver of productivity improvement. Imparting knowledge and skills required for a particular occupation to the students is essential for the teaching and learning objectives of vocational education. Graduates who have undergone vocational education are equipped with the skills and techniques to work in specific fields to be called skilled workers. Vocational education is an intermediary for science and productivity. Good vocational education can meet individual employment needs and the objective needs of jobs. To some extent, the influx of vocational education graduates into the labour market can boost labour productivity.

## 2.2 Rationalisation of Human Resources

Enterprises are one of the three central economic bodies and are the main force behind socio-economic development. Human resources are precious for companies, which play a vital role in maximising the company's advantages and are allocated appropriately. As a result, optimising the organisation's human resource structure and improving the enterprise's efficiency is of positive practical value.

Marginson relates human capital theory to education, productivity, economy, and personal income [5]. Vocational education converts the workforce into human resources, contributes to economic and social growth, and aids in developing talent in businesses [6]. Different companies have different needs for varying levels of expertise in other fields, and various positions' responsibilities vary from one to another. Most vocational education majors are associated with a particular type of work, and graduates will efficiently deal with specific technical issues [7]. Cooperation between schools and companies has a long history in education. Germany introduced a "dual system" model for vocational education in the previous century. The model of cooperation and training between vocational schools and companies enables students to have strong application skills in the corresponding fields. Such highly specialised training allows students to adapt to their positions and serve the companies efficiently as soon as they graduate.

Most countries globally have a shortage of mid-level technicians (e.g., plumbers) [8], which gives direction to modern vocational education. Vocational education colleges train designated middle-level technicians according to the needs of society, which not only complements the social division of labour but also solves the problem of the low employment rate.

The complete and clear division of labour in society and the good economic performance of enterprises will eventually boost the regional economy. Profitable enterprises will release more employment opportunities to the community, conducive to social stability. Vocational education can promote a sensible allocation of human resources to preserve a healthy socio-economic status.

### **2.3 Promote Upgrading of Production Technology**

Production technological progress and vocational education progress go hand in hand. The rapid development of technology requires vocational education institutions to keep pace with enterprises, adjust their teaching content in due course and maintain good contact with society.

After World War II, Germany viewed technology as a secret weapon to rebuild its economy, investing heavily in vocational education. The flourishing dual vocational education system enabled Germany's post-war economy to recover rapidly. The creation of much application-oriented personnel led to a significant increase in German technology, and today Germany's manufacturing technology is still among the best in the world [9]. The world-renowned achievements of the German manufacturing industry show that vocational education has contributed to the upgrading of production technology. Germany's well-established dual vocational education system contributes significantly to developing excellent production skills.

Vocational education is responsible for transmitting the results of the latest production technology and extending them when applied to specific jobs [10]. The school-enterprise model of vocational education allows for the quick application of emerging technologies in practice. In factories, there are three steps to new technology adoption: invention, improvement, and dissemination [11]. The factories are responsible for technical improvements while using new technologies. The emergence of school-enterprise vocational education allows the latest production technologies to be put into factory production in a short time, and problems that arise during the transition from

theory to practice are quickly exposed, allowing production technologies to be improved in practice. Whereas theoretical talents who graduated from general higher education may be familiar with the latest scientific techniques but not skilled in their application, application-oriented aptitudes educated by vocational education work at the front line of production know the most about production technology. These application-oriented people understand the limitations of production technology and the scope for improvement, and they are more entitled to do so than theoretical people in general higher education. Vocational education is inseparable from the social economy. This interlocking effect has accelerated the pace of technological innovation in production.

### **3 Dilemmas of the Development of Vocational Education in China**

In recent years, vocational education in China has made remarkable achievements, especially the double reduction policy promulgated in the last year; therefore, vocational education has gotten more and more attention in today's society. In addition, lots of approaches have been enacted which promote the rapid development of vocational education. However, against the backdrop of the deepening education reform, some contradictions and problems have not been solved effectively. It results in a series of dilemmas in the development of vocational education.

#### **3.1 The Limitation of the Job Prospects and the Salary**

##### **3.1.1 The Limitation of the Job Prospects**

The percentage of employment is the crucial point for the development and survival of schools, and the share of employment mainly reflects the school's reputation. Statistics showed that the employment rate of undergraduates was as high as 93%, and the rate of employment of graduates was 84%. However, the vocational school students' employment was only 61% [12]. The low employment rate in vocational schools leads to parents' prejudices against their children receiving vocational education. In addition to the traditional social concept and society's recognition, parents believed that only white-collar professionals could create value for society, such as lawyers or doctors. Meanwhile, parents think receiving general high education is the threshold for white-collar professionals.

##### **3.1.2 The Limitation of the Salary**

In China, due to the discrimination of educational background, companies generally pay relatively low salaries to the students who graduated from a vocational school. Their salary is less than the students who graduated with general high education. Usually speaking, vocational education students have a poor educational background and low education skills. Most of them are labor-intensive instead of knowledge-intensive, so they only pay the physical labour. On that basis, those students get lower wages. In addition, there are mainly the students to receive vocational education every year. In the background of the competitive society, only a few students can gain a decent job, and the rest face an unemployment crisis. Therefore, this phenomenon leads to a surplus

labour force and high market saturation. Finally, society has the presence of prejudice featuring against vocational education students. The degree of education is the first step for companies to select the talents, from doctoral to postgraduate, then to undergraduate, and finally, the students who receive the vocational education. The salary level is also gradually reduced. Therefore, these reasons result in students graduating from vocational school getting a relatively low salary.

### **3.2 Shortage of Funding Support for Vocational Education Construction**

In China, the sources of education funding are extensive, such as government investment, tuition and miscellaneous fees, enterprise investment and charitable donations. But the primary source is the government investment. In 1988, a study by the World Bank suggested that: vocational education in developing countries costs 153% [13], which is more than general high school. Vocational schools require more facilities, more funding for internship sites, etc. Public high education plays a vital role in the academic cycle in China, so the government attached great importance. Based on this cognition, the government funds are more inclined to the general high education, and the proportion of vocational schools is reduced. But in fact, the economic function of vocational schools deserves more attention. Vocational schools can cultivate more professional people and create more economic value. Thus, the government reduces its investment in vocational education, leading to a vicious cycle for society.

Currently, vocational education funding is in shortage; simultaneously, the transfer and utilities of vocational school funding also have the problem. For example, in different areas and in the same province, different vocational schools are other. So, for some vocational schools with no funding or only a tiny budget, they are hard to cultivate professional people for society.

Therefore, on the one hand, the government must speed up the fund distribution in education and provide long-term and stable development for vocational education. On the other hand, according to the local economic development level, the proportion of the vocational education in the financial budget should be more precise so that the vocational education funds can be used more reasonably.

### **3.3 Differentiated Teaching Quality**

#### **3.3.1 Students with Academic Level Gaps are Mixed into the Vocational Schools**

China has a vast population, but the public services are limited. In addition, China's college entrance exam results in fierce competition. A concept deeply rooted in people's minds is that vocational education is a diversion for students with poor grades. There is a common ground in people's minds—after gaokao, the advanced students have access to the university of 985 and 211, and average grades students have access to the public universities. The rest of the students only get into the vocational schools, receiving vocational education. Those students are not screened, so the vocational schools are becoming their shelter for them. Against this backdrop, good and bad students are mixed into the vocational schools; ultimately, it leads the difficulty in management.

### **3.3.2 Poor Quality of Teaching**

Due to China's high pressure and competition, it is difficult for students to find their personalised development direction before entering the university. After entering the university, due to the limited social public resources, the teachers' teaching level is insufficient, and there is no professional ability for students' personalised development. On this basis, China carries out the employment-oriented, and they cannot focus on students' practical knowledge. Under the traditional mode of operating the vocational schools, the curriculum and teaching methods of the school are relatively fixed. Also, the textbook's content is not updated in time, so it is challenging to keep up with social and economic development needs. In addition, many vocational schools only pay attention to students' theoretical knowledge. Students lack corresponding practical training, which affects their skills and functional ability. As a result, graduates are not recognised by companies.

In conclusion, the limitation of the job prospects and the salary, shortage of funding support for vocational education construction and poor quality of teaching are the main problems to the dilemmas of the development of vocational education in China. The existence of those problems means that there is a lot of space for the development of vocational education; at the same time, it also means that there are many problems in the development orientation and target training of China's vocational education. So, it has a long and arduous journey before we can solve those problems.

## **4 New Trends in China's Vocational Education Reform**

### **4.1 The Current Situation of Vocational Education**

Up to now, the understanding of occupation and vocational education is generally insufficient. College entrance examination voluntary fill in batch times, in advance, undergraduate batch admission, high school students will consider the file. This kind of voluntary application puts higher vocational education in a vicious circle and makes the quality of higher vocational students' poor. This means that the starting point of higher vocational training objects is low, so it is difficult to train these students into high-quality technical talents, making parents and society have low expectations for higher vocational education. In addition, primary education lacks vocational education elements, so the attraction to higher vocational education is significantly reduced.

Secondly, there is a shortage of teachers with high-quality technical skills. At present, the higher vocational students' teachers are relatively high. The teacher force is insufficient, leading to the output of vocational education talents not keeping up with the economic development speed.

Therefore, in recent years, both national and local governments have attached great importance to vocational education, issued a series of policies to promote vocational education development, and invested a lot of financial support. In 2019, The State Council issued the Implementation Plan for The Reform of National Vocational Education, proposing that "multiple measures should be taken to create a double-qualified teacher team" and that "teachers in vocational colleges and universities should train in enterprises or training bases for at least one month every year, and implement a five-year

rotation training system for all teachers”. Statistics show that the market size of Vocational Education in China will reach 141.5 billion yuan in 2020 [14]. Influenced by talent demand, industrial iteration and policy encouragement, vocational education is gaining weight in China’s education system, developing and iterating in scale and form.

From the talent side, according to the National Bureau of Statistics, China’s working-age population between 15 and 59 years old has seen an absolute decline for the first time since 2012, and the labour force population has been declining year after year. However, machinery has gradually replaced manufacturing, and the high-end talent “labour shortage” is becoming more intense. According to the BOSS Zhipin at the end of 2020 [15], according to a report issued by the China workplace job-hopping cycle per capita reduced year by year, the average white-collar workers under 35 job-hopping process from 23 months gradually reduced to 20 months, the concept of the “iron rice bowl” has become the past, cross-industry, move beyond the threshold of vocational skills and qualifications to apply for a job is the demand of the higher vocational education of the industry.

From the Angle of industrial upgrading, in much starker choices-and graver consequences-in planning “supported with science and technology innovation as the drive, talent development” under the call of our country industry is from labor-intensive to technology-intensive shift, objectively promoted the emergence of many new jobs, and also puts forward higher requirements on enterprises and job seekers, to vocational education on the cultivation of talents to create more space.

From a good policy perspective, combined with the 2012 “Decision on Accelerating the Development of Modern Vocational Education”, the 2019 National Vocational Education Reform Implementation Programme, the 2020 Vocational Education Quality Plan of Action and a series of policies, the main body of schooling, and the increasingly detailed planning guidance for training purposes, have encouraged the further efficient development of China’s vocational education industry.

So, what is the market size of the whole vocational education industry? Several statistical agencies have come to different conclusions. According to the report released by research on March 25, 2021 [16], the market size of the entire vocational education industry is over 200 billion yuan. In 2020, there was a short-term negative growth due to the epidemic, but online training achieved a breakthrough development of 27%. It is estimated that the online and offline forms will achieve synchronous growth in 2021, and the entire vocational training market will approach 300 billion.

## 4.2 The Future Development Trend of Vocational Education

Since the 13th Five-Year Plan, the CPC Central Committee has attached great importance to vocational education, further defined the function and role of vocational education, determined that vocational education and general education are two different types of education, built a modern vocational education system, and promoted vocational education into a new stage of high-quality development. With the development and transformation of China’s economy, the demand for talents has also changed, and the career development education industry has a bright future. The vocational skill education market is expected to maintain rapid growth under many factors such as policy and social demand, and its market potential is enormous. Among the market segments of



vocational skills education, IT applications, accounting and online qualification examinations have the largest market size. With a new generation of young people seeking self-improvement, the market size of vocational education is set to soar. Many emerging manufacturing industries and the corresponding employment scenarios continue to emerge, giving rise to a lot of demand for a new generation of skilled personnel, such in railway, communication, port and other fields. At the same time, the development of artificial intelligence technology and blockchain technology also needs a large number of professionals.

Under this background, the development of high-quality vocational education, higher vocational colleges to establish competitive emerging professional and can make the professional course is closely connected with the current market demand, cultivate more talents, and meets the needs of the market technical skill talented person, become to promote China's manufacturing and the necessary guarantee of service level. Therefore, school-enterprise cooperation and industry-education integration are essential for the business model breakthrough of differentiated vocational education institutions, and corresponding vocational colleges will also usher in colossal development space.

### **4.3 How to Take Advantage of New Trends**

In the new era, the development of vocational education needs to be closely combined with the industrial structure, and vocational schools and enterprises form a close internal relationship. There is no deep integration of school-enterprise cooperation in China because the government-led model does not fully mobilise the enthusiasm of enterprises, especially since the endogenous demand for highly skilled talents has not been released. The two phenomena of vocational education and industrial development have not fundamentally changed. From the government's point of view, it is necessary to adjust the school running system, solve the obstacles in the management system of enterprise schools running from the top-level system design, and provide a good external environment for enterprise school running. At the same time, the government should also encourage enterprises to take the initiative to strengthen strategic adjustment through macro-management, pay attention to the cultivation of human resources, pay attention to the career development of employees, and take lifelong vocational education as the school philosophy, which is not only the demand of enterprises themselves but also an essential embodiment of social responsibility. Encouraging large enterprises to participate in running vocational education and forming benign interactions with vocational schools can promote the diversified development of vocational education in China.

#### **4.3.1 Broaden the Sources of Funds for Vocational Education**

Although the Chinese government has attached great importance to vocational education in recent years, there are still many limitations in the amount and structure of funding. However, the primary funding source is still the state, and the multi-channel financing capacity is not strong. The investment system of vocational education mainly invested by the government increases the financial burden and challenges the sustainable development of vocational education. At the same time, the contradiction of the low efficiency of financial input is becoming more and more prominent. In the future, funding should

be further increased. A per-student allocation system should be implemented to ensure that the proportion of state funding for education is proportionate to the scale of development of vocational education so that the level of funding for vocational education is commensurate with the scale of development of vocational education and the comprehensive quality of talent training. At the same time, the channels for raising funds should be further broadened. Public welfare organisations and other social institutions should increase investment in vocational education while ensuring the dominant position of state investment.

#### 4.3.2 Pay Attention to Vocational Ability Training

China's vocational education should be closely combined with the development of enterprises, production and science and technology, and students' vocational actionability should be the training target. Through the construction of practice bases in line with the characteristics of the school and the major, including on-campus training rooms, cross-enterprise training centres and off-campus education enterprises and other skills training sites, to provide students with all kinds of practice and training work environment and positions; The mechanism of "combination of school and enterprise, on-the-job internship" is adopted to encourage vocational education to carry out the teaching mode of work-study and work-study alternation, so that students can master vocational skills and acquire professional knowledge through hands-on practice, to reserve professional qualities and prepare for the future employment in enterprises.

## 5 Conclusion

This paper learns from the previous data and finds the advantage of vocational education, which can promote labour productivity, rationalise human resources and give new momentum to updating production education technology. So, vocational education can promote social and economic progress from various aspects. At the same time, the dilemmas of vocational education also put aside many factors, such as Chinese specific national conditions and historical restrictions. Therefore, the main factors are the job prospects and the salary, which come from deep-rooted prejudice. Then, about new trends in China's vocational education reform, the Party Central Committee, all sectors of society and the vocational schools themselves promote education transformation. They provide support in terms of funds, talents and so on. Vocational schools are developing in the direction of more diversity and more in line with the students' development characteristics. In the future, it will give more attention to the individualised development of students, and all sectors of society will no longer have any prejudice against vocational education. It will promote economic progress in parallel with general education.

## References

1. Zhang, L., Zhang, X., & Li, N. (2010). The simulation of China education-economy system: A system dynamics model. In *2010 international conference on system science and engineering* (pp. 92–95). <https://doi.org/10.1109/icsse.2010.5551800>

2. Average Years of Schooling. (2019). *Our world in data*. <https://ourworldindata.org/grapher/mean-years-of-schooling-long-run?tab=chart&country=-CHN>
3. Labor Productivity Per Hour Worked in China from 2000 to 2018. (2018). *Statista*. <https://www.statista.com/statistics/878164/china-labor-productivity-per-hour/>
4. Rehman, A., & Mughal, K. (2013). Impact of technical education on the labor productivity. *International Journal of Economics, Finance and Management*, 2, 462–471.
5. Marginson, S. (2017). Limitations of human capital theory. *Studies in Higher Education*, 44, 287–301. <https://doi.org/10.1080/03075079.2017.1359823>
6. Li, J. (2021). Analysis of the role of secondary vocational education on local economic development. *Marketing Industry* 24, 220–270.
7. Agrawal, T. (2013). Vocational Education and Training Programs (VET): An Asian perspective. In *Asia-Pacific Journal of Cooperative Education*, 14, 15–26.
8. Psacharopoulos, G. (1997). Vocational education and training today: Challenges and responses. *Journal of Vocational Education & Training*, 49, 385–393. <https://doi.org/10.1080/13636829700200022>
9. Jin, W. (2015). The role of modern higher vocational education for socio-economic development. *Teacher*, 32, 99–100.
10. Xing, X. (2009). Study on the relationship between scientific and technological progress and the development of higher vocational education. *Journal of Wuxi Institute of Commerce*, 9, 54–55,61.
11. Li, W. (2002). Technology development and vocational education. *Educational Research*, 24, 51–55.
12. Du, X. (2006). Current situation problems and countermeasures of the development of higher education in China. *Vocational Education Research*, 25, 18–20.
13. Zhang, R., Huang, Y. (2006). On the role of government in strengthening the fund guarantee of vocational education. *Vocational Education Research*, 25, 22–23.
14. China Vocational Education Market Size and Forecast 2013–2021. (2021). *Iimedia*. <https://data.iimedia.cn/page-category.jsp?nodeid=13595493>
15. 2020 Talent Capital Trends Report. (2020). *199it*. <http://www.199it.com/archives/1149376.html>
16. China Vocational Training Industry Research Report 2021. (2021). IResearch Center. <https://www.iresearch.com.cn/Detail/report?id=3751&isfree=0>

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

