

UNIVERSITY OF TAMPERE

From Global Rhetoric to Local Reality  
Local Possibilities and Interests to Implement Global Policies of  
Sustainable Development in Vocational Education of Finland and China

FACULTY OF EDUCATION  
Master's Thesis of Educational Studies  
RIIKKA YLI-ARVELA  
MAY 2018

University of Tampere

Faculty of Education

RIIKKA YLI-ARVELA: From global rhetoric to local reality. Local possibilities and interests to implement global policies of sustainable development in vocational education of Finland and China.

Master's Thesis of Educational Studies, 75 pages, 3 annex pages

May 2018

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The aim of this research was to find out the relation between global policies of sustainable development and local strategies of vocational education in Finland (Pirkanmaa region) and in China (Guangdong province). The goal was also to understand the aims and goals of vocational education strategies at local level, to find out the position of sustainable development in these strategies and finally to examine the factors that could explain the variation between Finland and China.

The research method was comparative qualitative research. The core material was collected by interviews during spring 2017. Material also contained four examples of curricula of the schools. In Finland the research was located at Pirkanmaa region and in China at Guangdong province. The interviews and interpretations in Guangdong were operated in cooperation with researchers from South China Normal University, having great impact on this research to be completed successfully. In Finland the results could be translated to concern whole country, but in China, because of very different economic and cultural situation between different provinces, it only includes Guangdong, and cannot be interpreted to concern other provinces.

The main result of the research was that global policies of sustainable development have stronger relation with local strategies of vocational education in Finland than in China. Additionally, the aims and goals of vocational education are different. The only similar aim in both countries was the goal to educate professionally highly skilled workers according to the demands of labour markets and industry. Aims that were different, were the facts that Chinese vocational education also pays more attention to students' social ability and place at the society, by building up their courage and competence and cheering to take care of the community they live in. In Finland, the aim was to educate acknowledging, responsible and independent students. The position of sustainable development in local strategies was clearly different. In Finland, sustainable development was taken into account by developing strategies about sustainable actions, and by monitoring and evaluating the actions. In China, sustainable development did not have a place in local strategies. Although some issues presented in the local strategies had elements of sustainable development, they could not be interpreted as sustainable actions, since it was not included in their core meaning.

Variation between countries was explained through three factors. The first one was the speed of socio-economic growth: the stability of local circumstances and situation in Finland is quite stable while in China it is labelled by rapid growth. The second factor was the form of administration and decision making at education, which in Finland is decentralized while in China, it is centralized. The third explaining factor was the position and status of vocational education in educational system. In Finland, all education paths are almost equally appreciated, whereas in China academic education is highly appreciated and vocational education is seen as the weak part of education system.

The conducted research suggests that the global policies of sustainable development should, beside their impressive and admirable goals, take the local circumstances of their implementation more into consideration. If policies and strategies of sustainable development started from the grass-root level, they could have better possibilities to come through, rather than get lost in the middle of a long journey from global rhetoric to local reality. Place-based policy making should play a stronger role in strategies of vocational education for sustainable development, which concern every

country, but in different ways. The values and principles guiding vocational education should be taken into account, since they have a vital role in defining the future of this planet.

Keywords: sustainable development, vocational education and training, education politics and strategies, values of education, agenda 2030

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# 1 INTRODUCTION

The aim of this research is to find out the relation of global policies of sustainable development to local strategies of vocational education and training. I am also interested to find out the aims and goals of vocational education and what kind of position sustainable development has in vocational education strategies and practises. In this comparative qualitative research, I am examining these questions in two different contexts: Finland (Pirkanmaa region) and China (Guangdong province). These two countries and locations were selected to be part of the research due to the long history of international cooperation in many levels and due to the fact that Tampere and Guangzhou are twin cities. The interest of doing this kind of research was also brought up by a vocational institution at Pirkanmaa, which has good connections to Guangzhou vocational education field. This research could not have been completed without the help from the local level. The interviews and interpretation in Guangdong were operated in cooperation with researchers from South China Normal University. I got priceless help for finding the informants, arranging all the interviews in China and translating them, which had a great impact on my research to be completed successfully.

Data of this research was gathered by making altogether 13 thematic interviews in Finland and China. Informants were leaders, administrative persons and teachers of each seven school that participated in the research. Other three interviews in China were done at the educational administration level of the province or city. Material also includes four example curricula of the schools. During the study, when I refer to China, I am pointing to Guangdong province, since the study only focuses on Guangdong. Provinces in China are on a very different level when it comes to for example education or social and economic development. Generalising results from one province to concern the whole country would be misleading, since the difference between urban and rural areas is large. (Yang 2014, 297.) My focus in this research is on the concrete challenges and strengths these two countries have on this area. This research gives an empirical view on how sustainable development is understood behind its political meaning at local level strategies of vocational education. My aim is not to judge or prefer one over another, but to see the concrete reality at local level compared to global rhetoric of sustainability and what is the gap between global policies and local practises. Many researches on sustainable development in vocational

education have been made focusing on one country at a time, but hardly any comparative research on this topic between two countries has been made.

Sustainable development addresses the principles, which should guideline living of humans on the planet in order to ensure future generations decent conditions to live. It includes ecological, economic, social and cultural dimension acknowledging the responsibility not only to future, but also to past generations. According to Arto Salonen (2010, 36), sustainable development aims to diverse thrive of life by development that is economically, ecologically, socially and culturally sustainable in a long run, noticing global and local dimensions at the same time.

Several global policies of sustainable development have been made for decades: United Nations' millennium goals, Agendas 21 and 2030, United Nations' decade of education for sustainable development 2004-2015, Paris climate agreement, European Unions' strategy for sustainable development, to mention few. Almost every country has made strategies according to these global policies of sustainable development to implement the defined goals. When making global or national policies and plans on sustainable development to prevent the destruction of the planet, it is important to also take into consideration the local circumstances and possibilities to implement these plans. Danger in the gap between global and local level, and sometimes even national and local level is, that these policies get lost somewhere on the way and do not find their way to actions. In the 21<sup>st</sup> century, even if overall global, national and local policies of sustainable development have been made, and educations' crucial meaning in it has been recognized, policies concerning vocational education rarely emphasize the importance of sustainable development. On the contrary, perspectives of global justice and solidarity have disappeared from the aims of education policies even when social, economic and ecological crises are more visible to everyone than ever. (Lätti, Heikkinen & Lietzén 2016, 53.)

Why is my focus in this research on vocational education? Vocational schools educate countless amounts of professionals that use their knowledge and skills every day at practical work tasks forming a great part of the functionality of societies. It is important that these professionals know the ways of acting that are environmentally friendly, eco-efficient and honour and improve social and cultural wellbeing. All dimensions of sustainable development, such as economic growth, environmental protection and social equality become integrated at practical work (Seppänen & Riikonen 2016, 130). In order to make sure that these ways of acting form to be natural ways for the workers, vocational schools need to implement sustainable development in every field from values, management and strategic leadership to curriculum and teaching of students. According to Salonen (2010), while attitudes towards sustainable development are positive, they do not usually turn into practise, and that the sense of community is important when

promoting sustainable development. This sort of sense of community should be created to concern all people in vocational schools when embedding sustainable ways to be part of actions.

In the next chapter, I will first shortly introduce current education politics and strategies by focusing on common global neoliberal atmosphere at the moment. Moutsios (2009, 469) argues, that while education policy-making is trans-nationalised, education is subsumed to the pursuits of global economics and ruthless competition. With this introduction, my aim is to point out a certain shift from responsibility to accountability, to question the possibility of focusing and implementing sustainable development at education field. While education these days is more and more directed and organised according to principles of business economy and competition, it might leave out issues such as social or ecological sustainability, without seeing that focusing on these issues might actually save costs and improve wellbeing. After this, I will introduce vocational education and training in both countries, its governance and strategies, issues that direct and influence education and finally consider its aims and goals in both contexts. In the Chinese context, vocational education institutions are divided in two, containing also technical institutions. Technical education forms only a small part of the research and it is used only to make some comparison inside China.

In the last theory chapter, my focus is on sustainable development. I will introduce the meaning and necessity of it, how it became global, political concept and some recently made, major, global wide policies concerning sustainable development. I will also pin together vocational education and sustainable development to find out what sustainable development could mean in the context of vocational education.

Chapter four introduces the methodology and evaluates the reliability and validity of the research. Results are presented in chapter five, by opening and explaining the categories that were formed by content analysis to point out priorities and most important issues at the material. In concluding chapter, I will relate the main findings to my research questions and reflect factors that could explain the variation inside the findings.

## 2 POLITICS, STRATEGIES AND AIMS OF VOCATIONAL EDUCATION

At the beginning of this chapter, the aim is to introduce current atmosphere of global education politics before focusing on vocational education in Finland and China, introducing its system and governance as well as strategies and aims in both countries. With strategies in this context, I am implying to schools' own plans of actions to act according to their own goals or to different demands coming from national and international level related with various issues. With this introduction, the aim is to question, if sustainable ideas have place inside education field and especially vocational education, which is mostly guided through principles of business economics. At the end of this chapter, I will reflect the contradiction that lies between neoliberal and sustainable thinking.

### *2.1 Global and local education politics*

Politics and governance define the main emphasis on education and they influence the reality in schools' everyday life. Prevalent education politics and the goals that education aims for are reflections of the local and even global atmosphere and these aims and goals are more and more affected by the political and economic circumstances. Education politics find their ways from national decision making to local governance and finally to schools for example by formation of curricula. Being successful at international comparison is seen as result of a successful education politics (Kiilakoski & Oravakangas 2010, 8). Globalization and the role of neoliberal education politics is one example influencing directions and aims of education everywhere.

#### **2.1.1 A shift from responsibility to accountability**

Traditionally, the aim of education, besides empathy and care, has been to bring up acknowledging human beings with a sense of critical thinking. While these aims still live, through the shift of the

politics and goals of education towards accountability, effectiveness and competitiveness the values and aims of education have changed towards competitive, entrepreneurship and maximizing individual freedom and benefits. Matters such as charity and solidarity have been replaced with emphasis on global competition in the 21<sup>st</sup> century (Lätti, Heikkinen & Lietzén 2016, 53). The aim of being successful at international education comparison has led to a situation where education politics has been set to serve the interests of global economics (Lindberg 2013, 8). As a public institution, expectations, aims and criteria of schools are based on its public, societal and legislation-based mission. No education institution is completely independent and free, and teachers for example, are representatives of the aims of schools and disciplines, that are defined at curricula. (Värri 2004, 144-145.) While the overall aims of education have been changing, the contents of curricula are changing at the same time.

Education politics has made a shift where market-oriented ideology has come to exist side by side with the ideology of equality. Global influences and market-oriented atmosphere have been effecting to policymaking since the 1990s changing its aims from equality towards individual rights in education and work (Lätti, Heikkinen & Lietzén 2016, 42). The central elements of this kind of market-oriented education politics are for example the individual possibility to choose education, possibility to choose from public or private education, the competition between schools and students and moving part of the responsibility of the costs of education to the consumers of education. (Varmola 2002 121-122.) At the same time the shift in the values of education politics has moved from responsibility of students to accountability to produce skilled and sufficient workforce to the labour markets. Growing pressure to productivity at schools has made accountability to be one factor that measures schools' actions. Prevalent education politics is concretised to teachers at schools as productive targets and evaluation-driven developing. These topics are far from the reality and concepts that teachers themselves would describe their work, and the ways on how to discuss about education is also dominated through accountability thinking. (Kiilakoski & Oravakangas 2010, 10.)

The change towards accountability means that schools must be as effective as possible with as least costs as possible. This is done by setting competition as a key principle and strengthening the responsibility of consumers and clients of education services. (Ozga, Segerholm & Simola 2011, 94.)

### 2.1.2 Strategic guidance according to neoliberal politics

Education politics means a strategy that is based on legislation and fundamentals of curricula and is implemented by searching and using efficient tools, and monitoring the outcomes of the actions. One of these tools is evaluating and rewarding of successful development according to the strategy. In strategic interpretation, the education is seen as the equivalence of used teaching methods and achieved learning outcomes. (Kiilakoski & Oravakangas 2010, 16-20.) Strategies are the pathways to achieve the demands of education politics, which recently have been under guidance of global trends of neoliberal education politics.

In economic sense, neoliberal agenda includes three sets of politics. These are deregulation of domestic and financial activity, privatization of public companies and liberalisation of international trade and investments. When examining it as ideology, it promotes individual entrepreneurial liberties, skills and free markets and trades with minimum interfering from the state in fear that it might disturb the markets. (Moutsios 2009, 474.) Neoliberal education politics can be seen as an example of strategic direction of education. Neoliberal politics aims to creation of individual that is enterprising and competitive as entrepreneur (Olssen, Codd & O'Neill 2004, 136). Starting point at neoliberal thinking is, that the individual is the best informant and decision maker when it comes to choosing education paths and contents (Rinne 2002, 102). Students and their parents are seen as consumers of education services. When being in a role of a customer, parents do not get to affect the aims of education, but they have a possibility to evaluate the services they are using. (Kiilakoski & Oravakangas 2010, 16-17.) The highlighting of individual success and competition in education according to global markets is an opposite to the more traditional thinking of common collective good and aims of education. It also raises competition when separating good and bad students, which can have long-term influences on a student's life.

To be able to act successfully according to the defined strategy requires common understanding of the aims and values of the action. This common understanding can be difficult to find if the teachers and students are just objectives of the strategy of education governance and politics. Educationally oriented teacher and market-oriented strategy speak different languages and are difficult to fit together in the reality of schools. (Kiilakoski & Oravakangas 2010, 17.)

## *2.2 Vocational education and training: system and governance*

In this chapter vocational education system and governance in Finland and China will be introduced. I will consider factors that direct and determine vocational education and its position in society and finally the aims and goals of vocational education.

### **2.2.1 Finland**

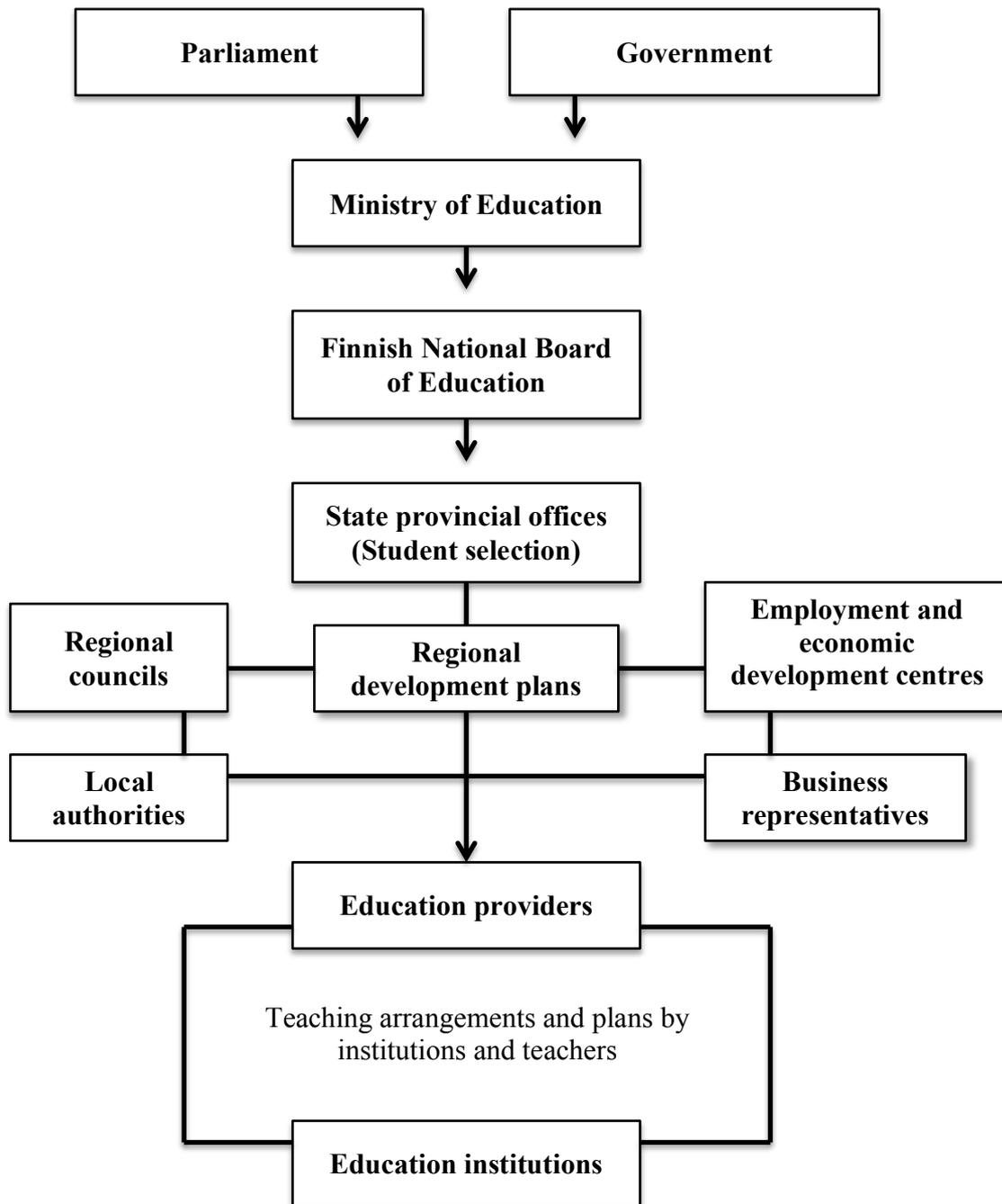
Upper secondary vocational education and training qualifications in Finland can be divided into three levels: initial, further and specialist degree. Initial degree gives the student wide professional basic readiness for different tasks on professional field. Both further and specialist degree give the student professional skills according to the needs of working life. Knowledge is deeper than in lower degrees and is directed and focused to more limited professional tasks. (Finnish National Agency for education, reference 1.2.2018) By completing any of these degrees, gives the student a general eligibility to apply to universities or polytechnics. Different degrees can be completed in three forms, which are school-based education and training, apprenticeship training and competence-based qualifications.

Apprenticeship training is based on the national core curricula and to the current competence-based qualifications. These form the base for a student's individual education plan that reflects the needs and requirements of both employer and student. Individual study plan determines the degree, central tasks, theory, timing, tutor and other relevant issues. The student's previous study- and work experience must be taken into account. Most of the students are usually adults, while in school-based education most students are young people without earlier vocational training. Practical part of the apprenticeship training is executed at the workplace under guidance, which usually means 70-80% of the time. It is fulfilled with theoretical studies accomplished at the vocational school. Evaluation is operated in cooperation between employer and the provider of the theoretical education. Most of the qualifications are operated in a practical test where the student addresses their skills and knowledge needed in the occupation. (Kyrö 2006, 26-27.)

Competence-based qualification form was built in the 1990s on the basis of a fact that about 50% of the 45-64 aged workforce had the knowledge and skills due to a long work experience, but did not have a qualification. The purpose of competence-based qualification is to give those with skills and work experience a possibility to get a qualification no matter where and how one has obtained the knowledge and skills. (Kyrö 2006, 24.) Recognising also non-formal and informal learning is important especially in the case of adult workforce without a formal qualification.

The administration is decentralized in Finland, which gives local authorities more independence to act according to local circumstances. The governance of education in Finland is divided to three sections: national, regional and local level. Operators at the national level are Parliament, Government, the Ministry of Education and the Finnish National Board of Education. Government and Parliament define education policy that is specified in the state budget and various documents and legislation. The Ministry of Education is responsible for the funding of public education, preparing the legislation of education and all regulations and orders that are necessary. The Finnish National Board of Education is responsible for the developing, supporting, monitoring and evaluation of primary and secondary education and also adult education and training. The national core curricula for basic education, upper and secondary general education and qualification requirements for vocational education and training are a legal responsibility of The Finnish National Board of Education. (Kyrö 2006, 13.)

At regional level operates regional councils, state provincial offices and employment and economic development centres. State provincial offices are responsible for national selection system, legal protection and organizing adult further education. Regional councils cooperate with local authorities, employment and economic development centres, business representatives and non-governmental organizations creating regional development plans. Education providers and education institutions operate at the local level. They are responsible for organizing and partly financing basic education. Although municipalities are not obliged to organize vocational education and training they are obliged to participate in its financing. (Kyrö 2006, 14-15.) Municipalities or federations of municipalities own almost 80% of the vocational education and training institutions. Other 18,5% is own by private organizations and foundations and the rest 2,5% is own by the state (Kyrö 2006, 25.) Education providers and institutions have a lot of independence when forming education and teachers themselves can make independent decisions on how to arrange teaching. At the figure below, the administrative framework of vocational education and training in Finland is presented by Kyrö (2006, 13), according to the Finnish National Board of Education.



**FIGURE 1.** Administration of vocational education and training in Finland

### 2.2.2 China

Vocational education field in China is divided into vocational and technical institutions. Vocational education has had many different forms of schools during decades, but I will combine them under these two main forms to make an overall introduction.

After the People's Republic of China, which was founded in 1949, the new institutions of vocational education were founded. Vocational institutions were reversed in the 1970's because of the opinion, that social differentiation and elitism were supported by earlier structures. Renewed vocational education was established in the 1980's with different emphases. (Steward 2015, 14.) Vocational education is provided on two levels; secondary and tertiary and is managed by the Education Department.

Secondary vocational education aims to cultivate students that have the basic skills that the field of profession in question requires. After accomplishing secondary vocational education, students either head straight to labour markets or continue to study at tertiary level vocational education. The aim of tertiary vocational education is to train students that are able to understand both technology and management but also have deeper understanding of the production process and problem solving. Students apply to vocational education through joint entrance examination.

As well as vocational institutions, new institutions of technical education were established after founding of the People's Republic of China in 1949, when factories were having difficulties to find skilled workers to work for the industry. Factories built up their own schools that were located in the factories. After time has gone by, some of the factories do not exist anymore, but the schools have moved on their own. Technical schools and colleges are managed by the Department of Human Resources and Social Security. The aims of technical education are similar to vocational education, but unlike vocational education, technical institutions do not hold any entrance examinations. Technical education is also arranged at two levels. While technical schools educate workers for the industry, technical colleges aim to cultivate managers for the industries.

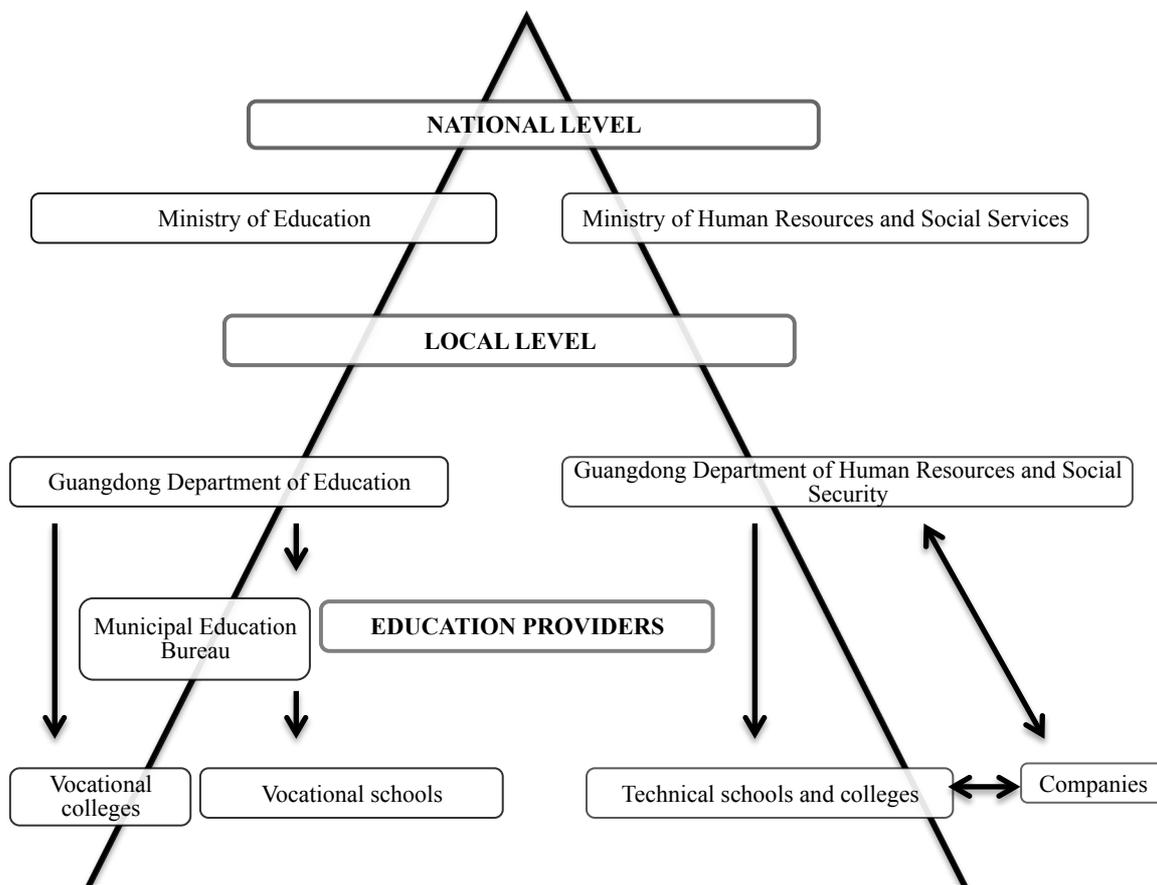
Technical education concentrates mostly on practice in the form of workplace learning. Only 30-40% of the education consists of theory learning. Technical education has seven models of training workers for society's needs. First one is providing education for workers, who need to update their skills. Secondly, they offer training to persons who want to change occupation. Thirdly, they are providing education to farmers who need to update their knowledge to be able to work at industry. Fourth, technical education provides training for practical skills for university graduates, whose studies have been concentrating on theory. Technical education also provides education for poor family children and soldiers, who are returning from the army. Education is also provided trans-provincially, to alleviate the education situation at the poor areas of other provinces.

The governance of education is divided into four levels: Central government, regional government, local government and government of schools. The highest governance authority is at the central government, The Ministry Of Education. The Ministry of Education is responsible for example for legislation of education, financing regional government and designing of textbooks.

On the second step of governance of education operates regional government. It has responsibilities such as implementation of education legislation at its county, regulating education institutes of the county and financing of local government. Responsibilities of local government are local implementations of the legislation set at the central and regional level. It also regulates and finances the schools of its own region. (Opetushallitus 2008, 7.)

China has 34 provincial administrative regions, including 23 provinces, five autonomous regions, four municipalities directly under the central government and two special administrative regions (Hong Kong and Macao) (OECD 2016, 9). From the year 1989 until now, Guangdong has been first on the GDP rankings (above mentioned, 52). In 2016, vocational school students in Guangdong accounted for about 10 % of the country, building the largest vocational education system in the country.

Vocational education in China is divided into two forms: vocational education and technical education. Because of the difference in the history and establishing of the schools, the two types of education are also managed separately. The Education Department of Guangdong Province is responsible for running and managing vocational schools and colleges. Technical schools and colleges are managed and run by The Human Resources and Social Security Department of Guangdong. Administrative form is presented in a table below, by Guo & Lamb (2010, 26).



**FIGURE 2.** Administration of vocational and technical education in China.

## ***2.3 Factors guiding vocational education and training***

### **2.3.1 Curriculum, teaching content and relation with labour markets and industry**

In Finland, vocational schools form their own curricula, which are following the national qualification requirements, which previously was referred as national core curricula. The idea of local curricula based on national curricula was introduced in the Compulsory Education Law that came into effect in 1985. Reason for this was the willingness to give the education providers possibilities to take local circumstances into consideration. (Jalava, Simola & Varjo 2012, 75.) Besides schools own curricula, education providers are also obliged to make an individual study plan with each student (Kyrö 2006, 24.).

National qualification requirements for each vocational qualification are formed in cooperation between various social partners such as economic life experts, employers and employees from different fields, teachers and student unions. They are approved by The Finnish National Board of Education. (Kyrö 2006, 24.) Along with vocational and general subjects the qualification requirements contain topics such as promoting sustainable development, entrepreneurship, internationality, the use of technology and information technology, high-quality and customer-focused activity, consumer skills and management of occupational health and safety. Communication skills, learning, problem solving, cooperation and ethical and aesthetic are also included. (Above mentioned, 45.)

Each education institution is obliged to form their own detailed curricula, which are based on the national qualification requirements taking local circumstances into account. Because of the decentralized approach teachers have a freedom to decide how to teach, as long as the students achieve the objectives that are defined in the qualification requirements. (Kyrö 2006, 45.) Student's education path and progress is planned and monitored with the help of a personal study plan, which is formed with each student separately. The personal study plan is based on the student's needs and individual choices, and it defines the goals, implementation, timing and the evaluation of studying. (Opetushallitus 2012, 139.)

Finnish education politics aims to developing the skills and knowledge of the whole nation. Highly educated workforce and qualified products are the best way to compete in a global market. The education system is built in a way that a possibility to re-educate oneself always exists. The purpose of vocational education and training is to enable the possibility for everyone to continue

studying or to update one's skills and knowledge according to the changing demands of the labour markets. (Kyrö 2006, 16.)

At the point of doing the research, concerning professional majors and courses, China did not have national curricula for vocational and technical education. At provincial level, Guangdong province is currently examining how to form its own professional curricula standards. National curricula only exist for the majors such as Chinese, Math, English, Computing, PE, Health, Physics and Chemistry (<http://www.docin.com/p-1309862637.html> reference 21.11.2017). Education in vocational and technical schools is mostly directed by the local industry and labour markets, so vocational and technical schools form their curricula by themselves according to the local needs and development. Before forming curricula, school usually executes a research to find out what are the current needs of the society and local development. According to this, different schools may have very different majors, always related with the local economic development and need of the labour market.

Even if teaching at vocational schools is directed mostly to satisfy the needs of the local industry, the relation with industry and enterprises is weak at vocational schools. It shows up for example in cooperation with enterprises when trying to get the students to work place learning periods. One reason for this might be the difference in equipment at schools and enterprises. Many vocational schools are lagging behind with the modernization of equipment, which means that graduates from schools do not have current knowledge to be successful at the work place. (Steward 2015, 19.) The poorness of equipment in some cases could be explained by the low funding of the government. Even if most of the vocational institutions are public, for example in 2009, less than half (34%) of their funding came from the government and most of the funding was private payment (Yang 2014, 12). Other reason for unwillingness to cooperate are the high costs that enterprises are facing while training a student without any promise that the student will remain at the enterprise for a long-term after graduation (Klorer & Stepan 2015, 4).

Unlike the vocational schools, technical schools do not face the problem in cooperating with the enterprises. Because of the history of technical education and the hard promotion work by the administration of the schools and colleges, technical schools have been able to maintain good relationship with labour markets. Enterprises are also invited to cooperate for example at the level of curricula forming and teacher training. Curricula design is closely related with the needs of society and labour markets. Also the fact that technical schools and some of the industries are managed under the same department, affects the fluency of cooperation between schools and enterprises.

### 2.3.2 Values and aims of vocational and technical education

For decades, the main principles of Finnish education have been offering everyone equal possibilities to participate in education and that the education is free of charge. When comparing internationally, the level of education is relatively high in Finland. Creativity, knowledge and values such as equity, tolerance, gender equality and responsibility for environment are the cornerstones of the Finnish society. The principle of lifelong learning and equal right to participate in education are highly valued. (Kyrö 2006, 10-11.) The education system is also very flexible and changing a vocation is possible almost at any age. The purpose is that none of the education paths to choose are going to lead to a dead end.

An important part of vocational education and training are the key skills of lifelong learning. By assimilating key skills the student is able to survive new, changing and different situations in working life and is able to follow and function in a constantly changing society and workplaces. These skills are also specified and targeted to every field of study separately. The key skills are (Opetushallitus 2012, 18):

- Lifelong learning and problem solving
- Interaction and cooperation
- Vocational ethics
- Health, safety and action ability
- Initiative and entrepreneurship
- Sustainable development
- Aesthetics
- Communication and media know-how
- Mathematics and natural science
- Technology and information technology
- Active citizenship and different cultures

Values that are appreciated in Chinese vocational and technical education are morality, life value, quality development, skills, innovation and entrepreneurship. Taking into consideration the low appreciation of vocational and technical education, the students at vocational and technical

education feel less confident comparing to students at academic education. The meaning of the values in the schools is to build up the students' confidence and to help them to find their own place in the society. Values and aims are also highlighting the labour market oriented purpose of vocational schools. By avoiding mass-unemployment and maintaining the skills of workers, the aim of "serving employment directly", is one of the guiding principles in vocational education (Hao 2010, 4.)

Academic education is highly appreciated in China. The common idea is that the hardworking and talented student will continue studying all the way to universities. This imbalance between academic and vocational education has led to a situation, where the vocational education has been set to a weaker position. This also influences financing, which is divided unequally concentrating more on basic education and academic education. These kinds of societal attitudes and preferring academic education over vocational is also leading to a situation, where the industry suffers skill shortage while university graduates without practical experience end up unemployed (Klorer & Stepan 2015, 4). Changing the overall opinion and values according to academic and vocational education is a challenge for the Chinese government and educational policy. By making the change, creativity, innovation and independent working experts and specialists could be appreciated as well as university educated academics. (Wang 2010, 10.)

## ***2.4 Contradiction of prevalent education politics and sustainable ideals***

I started this chapter by presenting some emphases on education politics and strategies at the moment, and continued through vocational education systems and governance to factors that direct vocational education in both countries. Prevalent education politics and the values they highlight have influence to every field of education. They are results from even global atmosphere and through national politics they influence the contents of curricula and finally the teaching matters.

Salonen (2010, 252-254) found that the sense of community is the most important matter when considering the change in behaviour and bringing sustainable issues from attitudes and thinking into practise. He also argued that the current individualistic atmosphere, materialism and consumer-citizenship are toxic for building the sense of community, which decreases the meaning of materialistic things and increases wellbeing that is based on the strength people give each other. Sustainable development actualises by taking responsibility through sense of community.

Neoliberal ideal drives opposite ideas. According to Moutsios (2009, 478-479), the major aims of education are defined by transnational institutions, and education is based at the core of the

competition of global economics. Education is defined in terms of its economic value and students as a human resource, which the global system of production requires at the moment.

The conditions that are needed for sustainable development to come true are far from the neoliberal atmosphere that directs aims of education at the moment. Yet, at the same time, education has been declared to be most effective way to raise people's awareness and teach about sustainable development. While global policies of sustainable development hurry people to take responsibility for their actions and change the unsustainable development, common atmosphere in global education politics speak different language by encouraging opposite development and losing the viewpoint of sustainable development from education policies.

# 3 SUSTAINABLE DEVELOPMENT

In the following chapter, I will first present the concept of “sustainable development” and some explanations on why this concept has been formed. While our time on the planet, it is important to think about issues such as our responsibility for the future generations. That responsibility means not to live on the expense of future generations and to take care of ecological, social, cultural and economic crises. If the situation goes on as it has, future generations will face hotter climate, higher ocean surfaces, poor biodiversity and nature resources, bigger population, pollution and social and political insecurity. For this reason, the responsibility for future and past generations must be recognised and acted on. I will also introduce its roots and history as a political concept and introduce some national and international agreements and policies concerning sustainable actions.

In the closing chapter I will link together sustainable development and vocational education and consider the importance of education, when concerning sustainable development. Vocational institutions have a great opportunity to impact on the ways the future professionals act every day at workplaces. This requires of course readiness and commitment from the industry and enterprises to engage with sustainable ways of working, but including these matters to be a natural part of working already in vocational schools during studying might help their implementation at workplaces.

## *3.1 Past, present and future*

The world we are living in is very different from the one where the generations before us were living. The world we leave after us for the next generations will once again be much more different. Every generation lives on the planet the way they see is best for them, but every generation also makes changes for the condition of the planet. For decades, societies and humans have been aiming to development and growth. Rapidly developed technology has made our lives much easier than for the ones whose dependence on the nature was more concrete. But at the same time, it has made us forget, how much the future depends on the wellbeing of the nature. Trying to

achieve higher development and on-going growth, humans have turned the human-nature relationship from nature-needing to nature-using. One example of the actions of people is the growing quantity of carbon dioxide in the atmosphere. It has caused global warming leading to consequences such as floods at some parts of the globe and growing heat and drought at other parts. According to the economic development, developed countries and developing countries can prepare and survive differently from these consequences that lead to many forms of social and cultural inequalities.

During decades, growth has been the one ideal every society aims to achieve. Growth seems to be the one thing, which has been seen as the solution to all: by economic growth it is possible to ensure social wellbeing. Anyhow, economic growth is unbalanced and since the deep gap between developed and developing countries, wellbeing is piling up to some parts of the globe. Also the population has grown enormously, and mostly it grows at the developing and poor areas of the globe. Population has increased to 7,6 billion from the 1,9 billion at the beginning of the 20<sup>th</sup> century (WWF 2016, 16). According to Meadows, Rogers & Meadows (2005, 70), the progressive poverty increases population, which again increases poverty. By decreasing poverty, it is also possible to decrease population growth. United Nations set reduction of poverty as the first and most important goal at Agenda2030.

Increasing the growth of population means also increase at the emissions, which sets it face to face with the adaptability of the globe. The globe must be able to handle the pollution in order to renew natural resources. While the population is increasing constantly, earth's possibility to handle emissions and pollutions is limited.

Since the increase of the population, also the food production must have developed to be more effective. Food production has increased a lot, but since the even faster growth of population, there still is not enough food for everyone. At the same time, the growing food production has caused problems to produce food in the future, since the ways of increasing food production at present have been damaging for the soil, forests, waters and ecosystems (Meadows, Rogers, Meadows 2005, 70).

When talking about sustainable development, we usually recognize the responsibility for the future generations. As important as the welfare of the future generations is, so is the understanding of the heritage we have been given by the past generations. To live sustainable life means that we must think and act through expanded time horizon to set us in a relationship with past and future and the generations before and after us (Thiele 2013, 23). For example cultural legacies, skills and languages are something we have inherited from the past generations and are obliged to keep alive (Thiele 2013, 14). Some of the skills that are necessary to use these days are inherited through

language from the generations before us. Also, different languages are in danger to become extinct, if the heritage learnt through and within them is not recognized and kept alive.

It may seem like the situation is no longer in our hands and we have crossed the line. Overreaction happens for three reasons: on-going growth, crossing a line that is unsafe to cross and the perceptions and consequences of the soon to become overreaction are delayed or mistaken. The overreaction hits the hardest to where there are the worst conditions from surviving it. After the overreaction there are two possibilities: one is collision and the other is well considered remedial turn. (Meadows, Randers & Meadows 2005, 27-29.) This turn is possible to achieve by acknowledging the situation and its seriousness and acting on it.

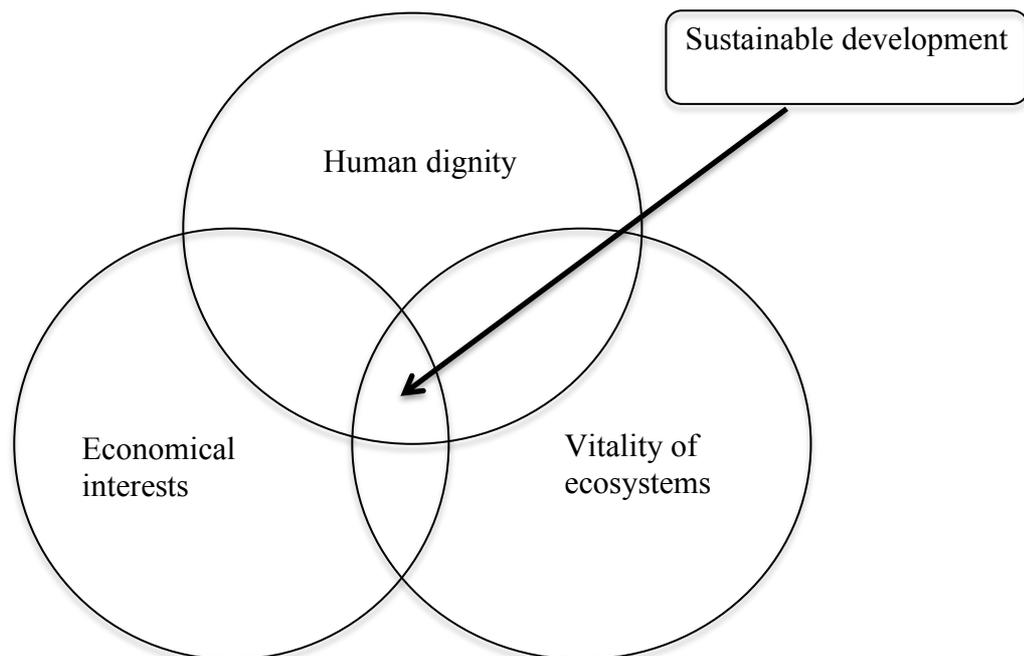
Quality development instead of material growth would be ideal in a sustainable world. Values, knowledge about the state of the globe and important social aims would be the terms that would identify growth. (Meadows, Randers & Meadows 2005, 278.) The imbalance between renewability of nature resources and consumption by humankind have led to a situation, where a second planet would be needed. To ensure decent living conditions in the future, a global wide collective turn in a relationship between human and nature is necessary. (Värri 2014, 88.) By understanding the basics of our existence in the world differently than according to the ideology of economic growth and competing, it is possible to shift ways of living towards an ecologically sustainable world (Värri 2014, 94). By acknowledging these facts and engaging with the principles of sustainable development, it is possible to make a change. Sustainable development not only aims to ensure the future generations decent conditions to live, but it also aims to cultivate a sense of responsibility and better understanding of ourselves and the world we live in by participating in widening and changing global networks (Thiele 2013, 3).

### *3.2 Dimension of sustainability*

Sustainable development is a wide concept and it covers all the areas of life. Sustainable development can be divided in three areas: ecological, economic and social and cultural sustainability. Even though in some cases some of these dimensions are presented without the others, or some of them seem to rise above the others, the three dimensions are tightly linked together. They are all depended of each other and when concerning one dimension, there is always a need to be aware of the others as well. Since the interdependent nature of the world, if one of the dimensions is in danger to collapse, others will face the same danger (Thiele 2013, 5). It is also

clear, that promoting sustainable development needs international cooperation, since none of the challenges we are facing are boarded inside certain countries but have far-reaching effects and consequences.

In the following simplified figure, dimensions of sustainable development and their relation and interdependence are presented according to Salonen (2010, 32).



**FIGURE 3.** Sustainable development actualizes in the circle of impact of the three dimensions.

### 3.2.1 Ecological sustainability

Sustaining the diversity of nature and the functionality of ecosystem are the basic terms of sustainable development. Human actions (economic, social and political) should be adjusted to fit the adaptability and renewability of natural resources. (Malaska 1994, 2-3.) The aim of ecological sustainability is to ensure that the planet remains viable to the future generations and that we do not take away the possibilities for the same decent life conditions that we have had.

### 3.2.2 Economic sustainability

Economic sustainability is making such decisions, which are not based on growing depth and are aiming to the future with long-term goals. In order to make it possible for the wealth to be divided equally, economy should be built on as economically sufficient consuming of natural resources as possible. Sustainable economy also helps to adjust to the changes of world economics and to survive from the challenges that the society might face in the future. (UN Finnish Association, reference 2.1.2017.)

### 3.2.3 Social and cultural sustainability

Ensuring the transition of wellbeing to future generations is a central question of social and cultural sustainability. Challenges that sustainability is facing are population growth, poverty and inequality, gender equality, and arranging education and healthcare to all. Social and cultural sustainability promotes the wellbeing of people and areas while it also contains such issues as sustaining and appreciating different cultures, which can also mean ensuring the transition of cultural heritage from one generation to another. (Finnish Prime Ministers Office, reference 13.11.2017.)

## 3.3 *Sustainable development as a part of international politics*

The word “sustainability” was taken into consideration as early as in the 1700s by a German mining administrator who was concerned about the effects of overharvesting of forests to mining industry, and wrote a book that set up methods for sustainable use of forests. In spite of the fact that the concern of the welfare of forests and nature habitants was recognized so early, the concept found its way to a bigger audience as late as in the 1980s. (Thiele 2013, 16.) When entering the 20<sup>th</sup> century, began the era where the national economies around the world started to form more tightly a common and shared international economy. Along population growth, urbanization, accelerating economy and developing technology human being became an actor who rapidly changed natural, social and economic states. The downsides of intensified and uncontrollable development started to show as societal and environmental problems. (Opetusministeriö 2006, 14.) In order to secure decent life conditions for the future generations, the global responsibility for the living environment needed to be taken into consideration and accepted.

International community took the concern of the state of the planet into consideration in the 1970s. United Nations' first environmental conference was arranged in Stockholm in 1972. The fact that environmental issues do not border only inside nations and that these issues are common, global problems was widely accepted. (Kärppä, Laurila & Lundgren 2009, 9). The aims of environmental education were defined at UN's environmental conference at Tbilisi in 1977. In 1987 the World Commission of Environment and Development was organized for the first time, having Gro Harlem Brundtland as its president. The commission was formed as a request from Javier Perez de Cuellar, United Nations' president at the time. Its tasks were defined such as planning for a long-term environmental strategy, finding ways for increasing international cooperation and forming common goals and strategies. (Rautiainen & al. 1988, 5). At the commission report "Our common future" (1988, 16), sustainable development is defined as followed:

*Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*

Brundtland's commission report created a base for many international actions and by that the concept of sustainable development formed to be a political concept. In 1992 United Nations called all its member countries to Rio De Janeiro to create a plan that would help to fit the economic and social development of societies into the conditions of the environment. The aim was to sustain the diversity of nature for future generations. The international plan of action for sustainable development, Agenda21, was accepted at the gathering. The aim of Agenda21 was to confess the problems at the time and prepare the world for the challenges it would face in the next century. It emphasized broad global and political commitment to high-level cooperation for the good of the environment and development and its success was primarily in the hands of the governments of the nations. This required that every nation had to form a national strategy for sustainable development that was strengthened and supported by the international cooperation. (Agenda 21, 1.3.) At the UN summit conference in Johannesburg in 2002 the plan of action was formed to strengthen the achievement of the goals defined in Agenda21 (Opetusministeriö 2006, 15).

### 3.3.1 Agenda 2030

At the beginning of the year 2016, the plan of action that was accepted at the United Nations general meeting in New York in 2015 came into effect, and it is called Agenda2030 (United Nations 2015, reference 12.11.2016). At the moment, it is most current and referred global policy of sustainable development. It includes 17 commonly accepted goals (United Nations, reference 12.11.2016) that are universal concerning all the nations. The current goals of sustainable development are:

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
3. Ensure healthy lives and promote well-being for all at all ages
4. Ensure inclusive and equitable education and promote lifelong learning opportunities for all
5. Achieve gender equality and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive economic growth, full and productive employment and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to compete climate changes and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reserve land degradation and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

The first goal, ending poverty in all its forms everywhere, has been the biggest concern since the conference arranged in Rio De Janeiro in 1992. Ending poverty requires actions from all countries in order to able economic welfare to be divided more equally. It requires sustainable development that equally takes environment, economy and nature into account.

### 3.3.2 Other policies for sustainability

Besides Agenda 2030 other policies concerning sustainability and climate change has been formed nationally and internationally. Both China and Finland signed Paris Climate agreement in 2015. Paris agreement aims to stop the global warming less than two degrees. The agreement emphasizes ambitiousness to achieve the goal, solidarity when helping poor countries with their pollutions, openness when aiming to the goals and reporting of the results. (European Council, reference 3.10.2017.)

United Nations declared years 2005-2014 as a “Decade of education for sustainable development”, addressing that education is a motor for change. It aims to focus on improvement of quality education, reorientation of education programs overall, providing practical training and building public understanding of sustainable development. (United Nations Decade of Education for Sustainable Development 2004-2015, 5.)

Finland as one of the Baltic region countries was part of the program Baltic21, which was founded by the prime ministers of the Baltic region countries in 1996. Since the lack of paying attention to education in the program, in 2000 the ministers of education at the Baltic region included educational dimension to the program. The new program for sustainable development included education as an important factor, “An agenda21 for Education in the Baltic Sea Region – Baltic 21E”, was accepted at Stockholm in 2002 by the ministers of education. By developing education, the program aims to form sustainable development viewpoints to be a natural and permanent part of the education system, which includes all the dimensions of sustainable development equally: ecological, economic, social and cultural sustainability. (Opetusministeriö 2006, 16.)

The Finnish National Commission on Sustainable Development, run by the prime minister, has one of its key tasks to push forward the implementation of Agenda2030. The Commission also promotes, monitors and assesses the implementation of the society’s commitment to sustainable development, “Finland we want in 2050”. (Prime Minister’s Office 2016, 15.) It obligates public governance and other operators to act in a way that promotes sustainable development.

China, as the largest developing country in the world, has taken sustainable development into serious consideration. While China is responsible for about 30 % of the carbon dioxide emissions of the world, fast economic growth in China has made the government to realise that similar economic growth is not possible without taking economical issues into account. In the long run, climate change, for example, could destabilize China's societal balance. (Kopra 2017, 41.)

Being a part of United Nations and also having signed the Paris Agreement, China has made national plans trying to ensure future generations decent conditions for living and wellbeing. In September 2016, "China's National Plan on Implementation of the 2030 Agenda for Sustainable Development" was formed including detailed plan for actions for every goal set in the UN's Agenda2030. Also, China's government's latest Five Year Plan highlights the importance of sustainable development rising ecological issues as one of the main goals of the plan for the years 2016-2020.

### ***3.4 Sustainable development and vocational education***

Students who graduate from vocational education are the future workers in many fields. The everyday actions that they do at their jobs have significant role at the functioning of the society but also at implementation of sustainable development. Workplaces are expecting the students to be able to act sustainably, so sustainable ways should be included to the work practises already in vocational schools. This way, the sustainable ways of working become naturally when entering the workplaces.

According to the research implemented by the Finnish National Board of Education the principles of sustainable development are best taken into account both in the curricula and in actions in vocational education (Rajakorpi & Salmio 2001, 254). Reason for this is that sustainable development can be integrated in practical actions in vocational education. Students graduated from vocational schools are expected to have environmental skills besides professional skills. (Above mentioned, 249).

In Agenda 21, chapter number 36 is dedicated to education. It notices the critical meaning of education as a contributor of sustainable development and improver of capacity to actions for environment and development issues. Both formal and informal educations have irreplaceable role in changing people's attitudes and reactions towards sustainable development. (Agenda21, 36.3.) Also, United Nations declared years 2004-2015 to be the decade of education improving sustainable development. The aim is that children will be raised already in schools to commit to

live sustainably so that the implementation and improvement of its principles becomes a part of lifelong learning (The Finnish Ministry of Education and Culture, reference 14.11.2016.) Educational institute that improves the learning of sustainable ways of living is the kind where sustainable development is essentially included in all its actions. The basis of the actions is open discussion about values that welcomes everyone to participate. (Opetushallitus 2008, 7.)

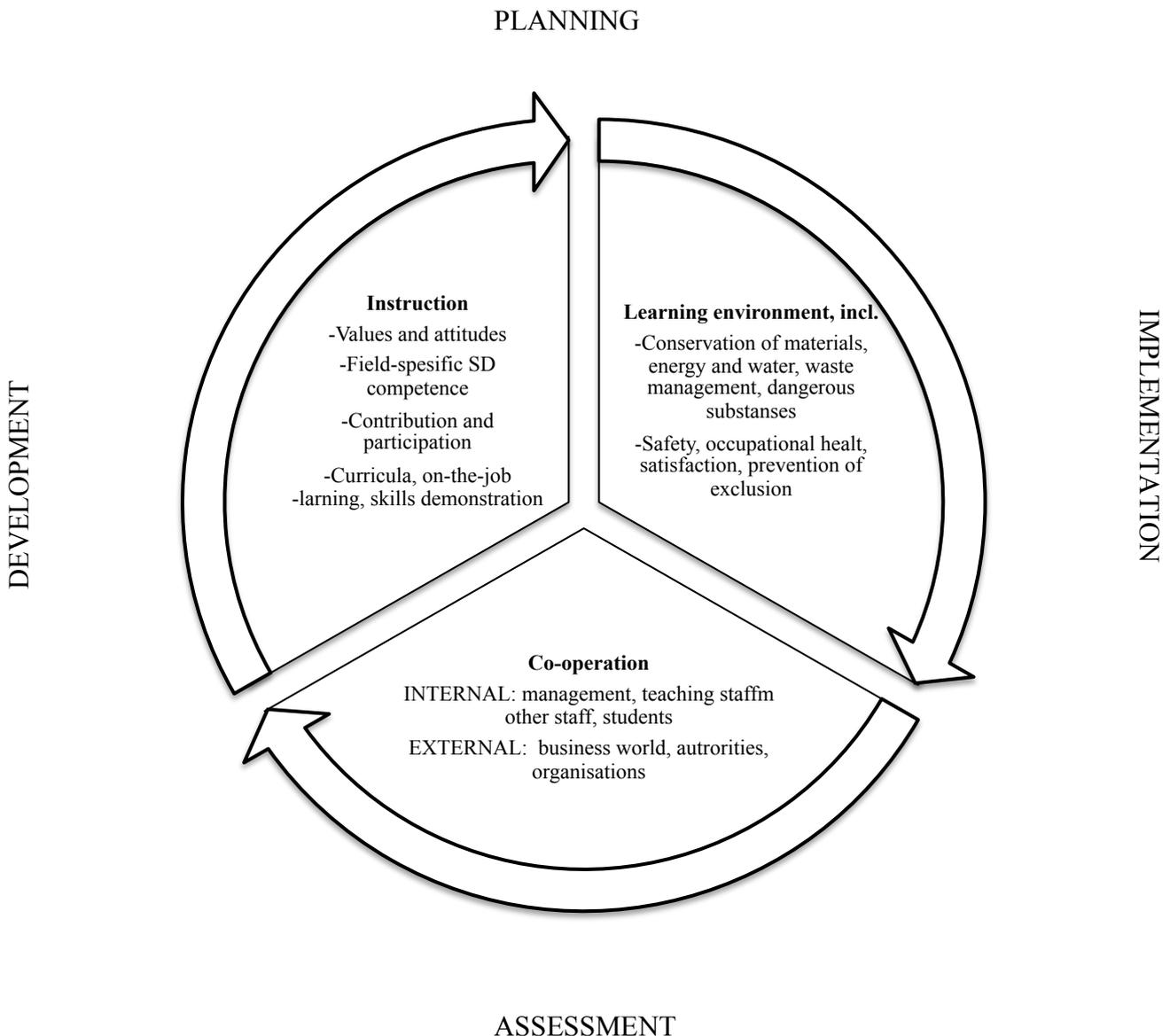
The responsibility of nature's diversity and retaining as well as environment and cultural heritage is in everyone's hands, according to the Finnish constitutional law. Education must improve the competence to take responsibility of nature and humans wellbeing. The Finnish Committee of Sustainable Development defined the aims of education that improve sustainable development to be as followed (Kestävän kehityksen toimikunta 2006, 13.):

- Increase understanding of the connection between human wellbeing, economical eco-efficiency and environmental protection.
- Increase understanding of own cultural heritage, different cultures, the conditions and justice of the trust between different groups of people and develop competence to interaction internationally and between cultures.
- Increase competence to observe changes in nature, society and people's wellbeing, to be able to find out reasons and consequences for these at local and global level.
- To be able to make changes in everyday actions and commitment to a sustainable way of living.
- Increase readiness and motivation to participate and affect as a citizen and as a part of different communities.
- Produce such vocational know-how to every field of study that creates conditions to change the production field to be more sustainable.

The Finnish Ministry of Education and Culture has done an evaluation about the strategies to improve education for sustainable development. According to the evaluation, sustainable development is actualising in vocational education better than in other fields of education. The reason for this is the closeness between education and work life. The ways of acting sustainably are easier to include to be a part of teaching and ways of actions in vocational education and training. (Opetus- ja kulttuuriministeriö 2013, 3.) Sustainable development is seen as permeable theme that is related to educational paths of students, knowledge and pedagogical decision of teachers, wellbeing and study environment as well as cooperation between education and work

life. Sustainable development is also seen as a part of professional skills, including it to vocational skills and competence requirements. (Above mentioned, 12.)

In vocational education the contents of sustainable development is possible to examine as a part of learning through themes such as lifecycle thinking, understanding the structures and processes of ones own field of study, eco efficiency and economical sustainability, responsible entrepreneurship and vocational ethics, customer service, future thinking, and affection in issues concerning sustainable development. Teaching methods should support participation and communality, which helps to increase the abilities to critical thinking and understanding totalities. (Kärppä, Laurila & Lundgren 2009, 19-24.) Sustainable development in vocational education can be included in the elements presented in the figure by Tauriainen, Laininen and Alasentie (2008, 11).



**FIGURE 4.** Sustainable development in school operations.

In a research executed by the Finnish National Board of Education in 2001, it was found that according to teachers and other staff the things that could improve sustainable actions in vocational education institutions were practical everyday actions, attitudes and acknowledging, teaching and informing. Practical everyday actions were implemented as waste management, recycling, saving, and cooperation with stakeholders. Attitudes and acknowledging included positive attitudes, good team spirits, inspiring teacher and dependence of nature. In teaching important were the thematic days and selection of courses. Informing appeared as guidance and versatile informing. (Rajakorpi & Salmio 2001, 156.) On the other hand, concrete obstacles such as narrow spaces, defective sorting, lack of time, money and resources, and prejudice obstacles such as inclined attitudes, ignorance and neglect were listed as matters that could disturb sustainable actions (Above mentioned, 159).

Positive and negative cases on implementing sustainable development in vocational education are found from around the world. Goldney, Murphy, Fien and Kent (2007, 32) argue that Australian vocational education policies and practises must have an irreplaceable place for sustainable development. To be able to answer to the challenges of sustainability requires significant support and backing from the community, the government and the industry by ensuring that principles of sustainability are central in all levels from the government policy and legislation to vocational education. (Above mentioned, 24-25). In other case from Malaysia, Minghat and Yasin (2010, 1233-1237) show a framework formed through a research, which helps to recognise elements of sustainable development and how they could be included in technical and vocational education. This framework will be used as a guide to improve sustainable issues at vocational subjects in Malaysia better than it has been done before. Difference in these two cases appears in the ecological and environmental issue, which are crucial part of Australian plan, but lack completely from Malaysian framework.

According to Rajakorpi and Salmio (2001, 235), the program of sustainable development has an important role in the quality system of vocational institutions. By this sustainable development is linked to be part of everyday actions and working in vocational institution. While acting sustainably the goal is at the same time to improve the quality of vocational institution.

Changing the actions to be sustainable in learning institutions requires also courage to seize to current ways of actions and renew them if needed. Acknowledging ones own operational models and the values guiding them are important to take into consideration.

# 4 RESEARCH FRAMEWORK

## *4.1 Research questions*

At the beginning of the process, research problem stayed quite wide and open. One reason for this was that up until my journey to Guangdong Province, China, I didn't know what to expect. I was not able to know, how many and which kind of schools I would be visiting and how the interviews would be implemented without common language. Later, I have found that it was wise to keep the research open in many ways at the beginning.

Research questions were formulated a couple of times along the study. At the beginning, the aim was to find out how the principles of sustainable development come true in vocational education and training. This viewpoint also included practical implementation. While preparing the first interviews that were implemented in Finland, the point of view changed more to concern the strategic level of vocational schools. During the collection of the material, it felt like the research questions were not functioning as they should have, since the answers I was getting, especially from the Chinese side of the research, seemed like answers to totally different questions. After putting material together, I formed the research question to be as followed:

1. How do global policies of sustainable development relate to local strategies of vocational education?
2. What are the aims and goals of vocational education in local strategies?
3. What is the position of sustainable development?
4. What explains the variation between China and Finland?

With these questions, my aim was to find out the connection between the global policies of sustainable development and the local strategies of vocational education and training. The position of sustainable development and the local strategies maintained central position at the research, so nothing I had read or written before changing the questions, were waste, but was guiding me to the right direction. During the interviews, I also got some practical examples of implementations.

## 4.2 *Research method*

The used research method is qualitative, since the aim of the research is through the relation of global policies and local strategies to find out what the meaning and position of sustainable development in vocational education institutions is and what the importance and position of it is in the strategies, reforms and values that direct the schools' actions and is it seen as an important matter. In qualitative research the aim is to describe, understand and interpret the phenomena or action in question. The aim is not to make large, comprehensive, generalisations about the topic but to increase more specified information about it. The amount of the material can vary, but the saturation of the data has been reached when new material is not bringing out any new information about the topic. (Eskola & Suoranta 1998, 61-62.) In this research, while the economic and cultural differences especially between Chinese provinces are big, the study is only concerning Guangdong province and could be somehow defined to be a case study.

In a research process, it is important that the researcher acknowledges his or her own experiences and thoughts about the phenomena in question and evaluates their effect on the research. Qualitative research usually has no hypothesis, so researcher should be clear about the impressions he or she might already have about the phenomena and not to let them disturb or guide the research process. (Eskola & Suoranta 1998, 19). For enabling the process to be transparent, these kinds of impressions and preconceptions are reasonable to write open and look at them objectively. My preconceptions of the issue were clear to me. I was under the impression that in both countries sustainable development is taken seriously and acted on. This was the case in Finland, but it took me a while to understand what was going on in Chinese vocational schools. I was asking questions about sustainable development, but I was getting answers to totally different questions. At first, I thought that I did not understand or that there was a language barrier between myself and the translator, and I tried to find out sustainable development from the answers. After a few interviews and discussions with the translator, I gave up on my preconceptions and started to listen and read the interviews as they were. This helped me also to start realising the main issues of the research and how it would form out to be.

Since the research data contains material from two different countries, the aim is to make some comparison between the two. For this reason, the research method could be characterized as comparative qualitative research. The aim is to find out how the effect of global policies concerning sustainable development differs in local vocational education strategies of the two countries. By making comparison it is possible to deepen understanding for example in areas such as the role of education system in a country's political and social situation and development or

forces which shape education system (Bray 2014, 20). Through the comparison it is important to take the context, such as cultural, political and economic circumstances into deeper consideration. Taking the context into consideration could bring out some important factors that influence the implementation and also help to form deeper understanding of the reasons for the situation in different countries. The aim is not to prefer one before the other, but to understand the deeper meaning and reasons of the relation of global policies of sustainable development in local strategies. Comparative education research can also help policy makers understand and recognize local practices and complexities that might appear (Bray, Adamson & Mason 2014, 432).

### *4.3 Gathering the data*

The data of the research consists of 13 interviews and four written curricula of vocational schools. All interviews were thematic interviews, but they were completed a little differently and the themes shifted a little when moving from interviews from Finland to China. Thematic interview sits somewhere in the middle of structured and open interview. Every interview is different, and the order of themes and issues can vary. The most important thing is that all the same themes get under discussion in every interview. (Leinonen, Otonkorpi-Lehtoranta & Heiskanen 2017, 68.) The structure of thematic interview is build by themes that develop information about the research issue through conversation. The purpose is not to ask specified questions, but to have a conversation of the topic in question. Themes are selected beforehand and are based on the knowledge about the research topic. The similarity of the questions can vary from open interview to structured interview depending on the interview situation. (Tuomi & Sarajärvi 2009, 75.) Themes are like guidelines that enable to make sure that the conversation stays at a certain area.

Three of the interviews done on the Finnish side of the research were traditional face-to-face interviews where all the informants were interviewed separately. Especially in this kind of interview, where the researcher and informant are talking face-to-face, it is important for the researcher to play a neutral role. This means that the researchers should not interject his or her own opinions to the answers of the informant. (Fontana & Frey 2000, 650.) Two other interviews were completed by email, while I was staying in Guangdong, so they could be characterised as thematic structured interviews. This sort of structured email interview leaves no possibilities to be flexible and spontaneous during the interview. In one sense, this could probably leave some important information out of the research, but in other sense, the informants have the possibility to take their

own time to consider the questions and form their answers in their own time. This way, they might feel more relaxed when examining the issues in question. Interviewees were from two different schools including two teachers and three persons from the administration level of the school. The schools are located in Pirkanmaa, and they are both big actors at the field of vocational education. One of the two schools educates only adults, while the other educates both youth and adults.

Themes used in the Finnish interviews were “Values and attitudes”, “Strategies for sustainable development”, “Sustainable development in practice” and “Evaluation of implementation” (Annex 1). Questions were built to give specific information and examples on implementation of sustainable development in Finnish vocational schools. It seemed that the questions I had formed under the themes functioned well and gave me information of the core research problem, which at this point was pretty wide and open.

During my stay in China, I completed eight interviews. The informants were found by a researcher from South China Normal University, who arranged and carried out all the interviews and acted as a translator having a major impact on successful implementation of the interviews. Three of the interviews were done at educational administration level of the province or city and five at different schools. Most of the interviews were implemented in groups, which were consisted of the leading persons and some teachers of the schools. Even though the informants were in groups, usually only one or two persons did the talking. Two of the school level interviews were done in vocational schools, one in a vocational college, one in a vocational polytechnic and one in a technical college.

The themes used in the Chinese interviews done in vocational schools were “Politics and reforms”, “Values”, “Sustainable development”, “Curricula” and “Action” (Annex 2). At administrative level the themes used were “Recent policies / guidelines / reforms of VET”, “Sustainable development” and “Future” (Annex 3). Themes and questions used at school level were aiming to more precise answering and practical examples while questions used at administrative level were aiming to find out more general principles guiding vocational education.

All themes got under discussion in every interview. Two of the interviews were cut short due to the lack of time, and answers to the questions were that left out were asked later by email. One of the interviewees has not answered to the emailed questions. The biggest part of the interviews usually consisted of the introduction of the schools. Some cases this was very useful and I got a lot of information I might not have realized to ask otherwise. On the other hand, in some cases this took the interviews to areas that had nothing to do with the research problem and took some time away from the important specific questions.

At the beginning of the interviews in China, I tried to use the same questions used in Finland. Very soon after the first interview it became clear, that the same questions would not function the way they should, since the understanding of the core subjects was different. This is also the reason why the themes used in interviews are a little different. Since the interviews were implemented in Chinese, I was not able to direct the questions as much as I had hoped and interviews mostly proceeded in the way the interviewees felt comfortable. Still, I was able to make sure that all the crucial issues got under discussion. Interviews in China were implemented in Chinese and translated to me by a translator time to time. Since there was a third person in the middle of me and the interviewees, the effect of this must be taken into consideration when evaluating the reliability of the research. Also the fact that neither translator nor me are native English speakers could affect the translating and understanding somehow.

Besides interviews collected in vocational schools, technical college and administration offices the data contains some written material. Written material includes curricula of both Finnish vocational schools and two examples from vocational school and vocational college from Guangdong.

#### **4.4 Analysis**

After completing interviews, the material might seem something else than what it was supposed to be. Data seldom offers straight answers to research question and it requires making of analytical questions and even thinking original research questions all over again. (Ruusuvuori, Nikander & Hyvärinen 2010, 10-11). By analysing the material, it is possible to compress it to be a more simplified entity, which is easier to handle. Analysis of this research is done by a content analysis, where the starting point is the data itself. In this kind of analysis, the goal is to create theoretical entirety out of research material. Analysis units are selected according to the research problem and they are not decided beforehand. Content analysis begins by asking the material questions that are crucial to the research topic. These questions are based on the research questions. (Tuomi & Sarajärvi 2009, 95, 101).

Before getting into analysing the material, it needs to go through a certain process. Information needs to be checked, the missing information fulfilled, and the material organized. Organizing depends on the research method, but usually organizing qualitative material takes a lot of time. (Hirsjärvi, Remes & Sajavaara. 1997, 221-222.) With content analysis, the aim is to arrange the material to a clear and tight form and distinctly bring out the important information. In

content analysis the starting point is to first make transcriptions of the material and then simplify the data, until the important material according to the research questions begins to point out. (Tuomi & Sarajärvi 2009, 108-109). In content analysis, the meaning is to simplify the original phrases that rise up in many interviews and arrange them first into subcategories. From subcategories the aim is to form upper categories and finally main categories. By combining the main categories, the aim is to form combining category that sums up what the main emphasis in the material is on. (Tuomi & Sarajärvi 2013, 108-112).

Analysis of the material collected in both countries is done separately because of the difference in the materials. The same process is gone through with both materials similarly but separately. I started the analysis by making transcriptions of the recorded interviews. The interviews completed by email, were already in a written form. The amount of transcribed material is 135 pages. After transcribing, I listened and read the material multiple times. I started listing down phrases, words and issues that seemed to rise up in every interview. From the uprising words and phrases I began to form themes and classes that emphasized the meaning of the words and phrases. Finally, I was able to form main and combining categories and begin to make some interpretations and comparison between the two countries. Making an analysis does not mean just presenting citations of the data. The core meaning of the analysis, is to find out of the data something, which cannot be seen or heard in straight citations. (Ruusu vuori, Nikander & Hyvärinen 2010, 16.) While analysing especially the material of the Chinese interviews, I got priceless help from a researcher from South China Normal University, who helped me get deeper understanding and make interpretations of the material.

Next table shows an example of the Chinese material. Words and phrases at the first column are subcategories that are formed from the issues, words and phrases that seemed to rise up multiple times in every interview. By combining these, I formed upper categories and finally main categories, which reflects the meaning of these categories. By combining main categories of the material the aim is to see the “big picture”, and find out the most important message of the material.

SUBCATEGORY	UPPER CATEGORY	MAIN CATEGORY
Industry’s need People’s needs	Society’s needs and demands	<b>Demands of society and labour markets directing the actions of vulnerable schools</b>
Low appreciation of VET Cooperation with enterprises Resources	Challenges schools experience	

**TABLE 1.** Example of content analysis for Chinese material.

#### **4.5 Reliability and validity**

In every research project, it is very important to evaluate the reliability of the research. In qualitative research, the most important criteria is the researcher him or herself and the whole research process must be under reliability evaluation. The researcher must open and evaluate all the choices made during the process, from the point of view of reliability. To increase the level of reliability for the audience, researcher should present the parts from which the entity is build. Besides presenting the strengths of the study, it is as important to bring out also the possible limits or weaknesses. (Ruusu vuori, Nikander & Hyvärinen 2010, 21-22.)

Most of the interviews were done through translator and in a language that is not my nor the translator's native tongue. While the research could not have been completed successfully without the local help, this also means that the possibility of misunderstandings or misuse of certain words existed during the interview situations. This might have some invisible impact on the results that cannot be targeted straight.

All the interviews in Guangdong were done in Chinese and translated to me time to time. This made the possibility to follow the conversation and make spontaneous specified questions more difficult, since the Chinese conversation took from half an hour to hour sometimes. All of the interviews were recorded, which made it easier to come back to the questions and ask for clarifications later from the translator. Usually, the full picture of each interview was formed after transcribing and listening them several times. During the interviews, there were a few names or issues that the translator was not able to translate at the moment and so they were left out.

The Finnish material of the research was collected in two different ways, which needs to be taken into consideration when analysing the reliability and validity of the material. The first three of the interviews were done face-to-face in an open thematic interview. This sort of interview made it possible to make extra questions and clarify issues if needed. The last two of the Finnish interviews were done by email as structured thematic interviews. This was because I was staying in China at that moment. In a structured email interview, the person answering has time to really concentrate and form the answers carefully, but it leaves out the possibility for the researcher to make spontaneous specified questions. Also, the fact that the first three interviews were recorded and the last two not makes the situations different. Even if the researcher tries to make the situation as comfortable as possible and gives the interviewee time to answer, sometimes some answers

might remain short, if interviewee's thoughts get locked. In such situation interviewee might think that time is being wasted and wants to move on to the next question.

# 5 RESULTS

I will present the results first separately through the main findings in both countries. The coding of the citations shows whether the informant is Finnish or Chinese and the order of interviews. For example, IF3 means third of the Finnish interviews. At the last section, I will shortly describe technical education and compare the situation between technical and vocational education in China. In the conclusions, I will sum up the findings together, place them under my research questions and take a closer look at the similarities and differences inside the findings.

The Finnish material contains five interviews done in two schools. Two of the informants were teachers and other three were leaders and administration persons of the schools. This division brought two different but interesting point of views to the material, when some of the informants gave a more practical viewpoint to the issues and others more strategic point of view. These two schools also have different history and ownership, which can influence for example to decision-making and strategies made at school level.

The Chinese material consists of eight interviews, containing informants all the way from province level administration to local level bureaus and finally to different schools. The schools were very much influenced by the local socio-economic development and some schools might have had better relations to the local industry than some, so the schools were all in a different situation.

## 5.1 *Finland*

### 5.1.1 Strategies and operations negotiating with local, national and global policies

Vocational schools are directing their actions through their strategy. Since being highly labour market oriented, the strategy of the schools has to take into consideration the local, national and even global circumstances, which are at the same time influencing to schools' actions. The growing demands for sustainable actions from the global community are reflected through the national decisions and requirements to policies at local level and vocational schools. Sustainable development is being an important part of vocational schools' strategies.

*Few years ago, we were renewing our strategic guidelines and common operational principles for developing education... ...and one of the operational principles is sustainable development. IF3*

*Because of UN's agenda and our government's program sustainable development should be included in the actions of all education institutes. And it also comes from the qualification requirements, so it is a part of everyday work. IF1*

Strategies and operational principles are guided by the values vocational schools represent. Values that the schools represent do not directly include the concept sustainable development, but are consisted of elements that represent dimensions of some sustainable development.

*Social and cultural sustainability are strongly present, even if not straight said out loud. Instead economical and ecological sustainability haven't fitted in. IF5*

Some dispersion could be seen between the teachers and administration persons of the schools. Teachers saw that the values and strategies schools represented were valuable, but they were not too convinced on the implementation of the strategy and values in practise.

*The directing of sustainable actions from the school level has been buried under constant organisational changes and insecure economical situation. Practically everyone is responsible for them selves. IF5*

*Themes of sustainable development have been noticed and taken into consideration, but the fact that does the persons who are doing the actual job, know that they are doing sustainable actions I am not sure. IF1*

The teaching of the students in vocational schools is planned and directed through three levels. The national qualification requirements set by the National Board of Education defines the qualification requirements for each vocational qualification. These qualification requirements set up guidelines for each education provider to set up their own common curricula and curricula that is planned to every field of study separately. All these levels include a plan, how to promote and actualise sustainable development.

*Below the common part of curriculum, there is a curriculum for every field of study and they include sustainable development applied to fit to the profession in question. It is of course different for a sales person than it is for a car mechanic. IF3*

Besides strategies, values and curricula of schools, vocational schools have formed plans how to actualize sustainable development in practise, for example recycling, measurements of energy using and also researches on employee's wellbeing at workplace.

*Yes, we do have an action plan for sustainable development... it includes recycling, and in every field of study, for example the use of heavy chemicals and safety of working environment... and also, the accessibility of the schools, we have wanted to make the environment comfortable to the students. IF2*

Strategies and operations that schools act by are leading towards local, national and at some point, even globally made decisions and agreements. Interviewed teachers had strong knowledge about sustainable development and they had real concern of the importance and the implementation of sustainable development in practise. Leading persons of the schools were looking more at the big picture, but also acknowledging the necessity of sustainable development.

For example the UN's Agenda 2030 is planted to schools through governments programs and local level decisions, so the connection to the globally made agreements was acknowledged and accepted. Still, the persons who were more connected with teaching and practises of schools, felt that something more could be done, which leads me to think, if the global policies of sustainable development are just big guidelines that do not find their way to practise as strongly as they could and should.

### 5.1.2 Sustainable actions driven by worries, hopes and possibilities for the future

The importance of sustainable development is strongly recognized and it came up in all the interviews from a few different points of view. Acting in a sustainable way is seen important mostly for four reasons.

First of all, legislation obligates the schools to follow certain rules concerning sustainable issues. Common norms and legislation directs schools actions in this area, and all the strategies and plans of actions are made according to the demands of legislation.

Secondly, the concern of the wellbeing of the planet was greatly emphasized. Concern of the state of the planet, future generations and the reduce of nature resources rose up to conversation and it was seen that acting in a sustainable way is the only way to save the planet and ensure future generations decent possibilities to live.

*Sustainable development is important, and I think that sustainable way of acting should be pervasively the base of actions of every organisation. This is the only*

*way to ensure the continuity of life on the planet by living by the principles of sustainable development. IF4*

*We shouldn't be thinking only ourselves. This planet has limits and we should also think about the future generations. IF1*

*Global environmental problems will crush us if we don't stop this wasting of nature resources. IF5*

Sustainable development is also seen to be one important part of a student's professional skills. The importance of sustainable development for the workplaces and the demands of the labour markets are facts that need to be taken into consideration when educating the students to be future workers. For example, sustainable skills and knowledge are possible to handle in vocational education by such themes as lifecycle thinking, systems and processes of one's own profession, eco-efficiency and economical sustainability, responsible entrepreneurship and ethics of professional field, customer service, future thinking and affection in sustainable issues (Kärppä, Laurila & Lundgren 2010, 19-24). Employers assume that the graduates from vocational schools have the knowledge and skills to act in a sustainable way.

*...It should be connected to work life, because it is a skill that our student should have when he or she graduates. And the employers also require that the graduates know what it means. IF3*

*The significance of sustainable development at the work places is increasing all the time. Future workers should be trained to it already during the studying. IF5*

Sustainable development is also an important success factor and used as a part of marketing. Vocational schools see their possibility in a society as pioneer and an example giver. Sustainable development can be used in marketing and branding to get some positive visibility.

*I think that a vocational school has a big influence to opinions and attitudes and we have to see that as a possibility.*

*It is also about branding, it is possible to use it as a marketing tool... of course economical situation affects to the decisions made but other fact is that we want to have positive visibility by making decisions that are current and on time, like what sort of energy resource we choose. IF2*

*We want to be a pioneer in this area and we want that it can be seen. IF3*

The importance of education to give the students abilities to be independent and conscious persons was seen as important issue. According to the pedagogic model of education for sustainable development, the sectors of education for sustainability are intellectual competence, skills of

thinking and knowledge of action (Kärppä, Laurila, Lundgren 2010, 16). The on going polarization could also be ached by education. Polarization accelerates in all the levels, but education decreases it especially in the case of adult education and immigrant education.

*Despite of the education level, Finnish education system aims to educate people that are conscious and independent and able to take responsibility of one's own lives. IF1*

*If we think, to what can education affect, it is that education is probably the only ache to this accelerating polarization. IF2*

By education, it is possible to prepare the students to sustainable way of life, which they can hopefully take to be a central part of their natural ways of acting in personal life as a citizen and consumer as well as professional life.

*Sustainable development can be seen as one of the most crucial learning challenges to the humanity. This challenge could also be called "learning the sustainable way of life". Education has an important role in promoting sustainable development. Through education, people are given readiness to promote the change towards sustainable way of life during the different times and roles of ones own lifecycle as a consumer and citizen, as a work life actor and a producer of new innovations, as a decision maker and an educator. IF4*

As well as obligations, norms and legislation, the demands from national and international community and agreements direct schools actions. Also the awareness of the poor condition of the planet is pushing towards to meet the common agreements. For some level, the core is the genuine concern of the well being of the planet and the future generations, but for some level, acting sustainably is also being used to polish the shield and get some positive visibility. Sustainable development is at the core of the strategies of the vocational institutions and it goes all the way through the schools' every day actions to students' professional skills, but the core interest in acting a certain way, can vary from one level to another, and it might have some impact on the implementation and transparency of actions.

### 5.1.3 Assessment and self-evaluation as essential part of local strategies

Implementation of sustainable actions in vocational schools is planned beforehand and it is monitored and evaluated. Partly these evaluations come as a given requirements, such as recycling that the legislation obligates, but some of them, such as how much the schools strategies have emphasis on sustainable development and how much they invest in sustainable actions is in the

schools' own hands. Schools execute measurements and form plans of action to develop and improve the results if needed.

*We have had these sorts of surveys to see, for example, when in every field of study they have made plans on how to store some materials. So we have made these surveys were we go and see if things are as they should be. And if they are not, we have given an assignment to fix it in a certain period of time. IF3*

*We compose and update a plan of action to sustainable development. Then we monitor and evaluate the goals yearly according to the plan. IF5*

Even if the strategies and plans of action for sustainable development are strictly planned, monitored and evaluated, the risk here is, that its implementation might not be so visible to the staff and students of the schools.

*...Any monitoring or controlling can't be seen at the schools level. I don't know how the results of evaluations are being reacted to. IF4*

If there is a gap between the monitored plans and strategies for sustainable development and the everyday actions at the schools, the connections of these two can easily be lost. This kind of dispersion could lead to the neglect of the issue as well as misunderstanding, which can be avoided by informing and including the staff and student more to the issue.

Factors that influence the implementation of sustainable actions in practise are the example given by the management and development, commitment and wellbeing of the workers. Resources and showing the benefits of sustainable actions in euros help the implementation. Also the own activity and participation of the workers, advisory and communication are important factors to ensure the implementation.

*If you are committed as a worker and to the organization, then you already implement the principles of sustainable development... if the organization is committed to the worker, then the worker is committed to the organisation. The management of the organisation can do a lot in this area. IF1*

*The commitment of the management of the school is an absolute requirement. Also informing of the benefits by euros. IF5*

Factors that could have negative impact to the implementation of sustainable development are recourses, attitudes, disregard, lack of information and rush. Some dispersion could be seen between the teachers and administration persons of the schools, while it seemed like the management and the teachers of the schools were looking at the situation from two different directions.

Even though the schools have strong strategies and plans of actions, it seems that workers who act according to the rules, do not know for sure the reasons why they are acting according to specific rules. The implementation of sustainable development is assimilated to be a part of everyday actions and some of the work staff do not necessary know that the reason they follow certain rules have something to do with sustainable development. Informing the work staff in this area is important to avoid the neglect and misunderstandings. Attitude, wrong information and unwilling to commit are seen as factors that could have negative influence on the implementation of sustainable development.

## ***5.2 Worries, obligations and possibilities placing sustainable development at the core of the strategies and self-evaluation***

Sustainable development is emphasized and implemented strongly at least at the strategies, curricula and plans of actions of vocational schools. These strategies are related to local, national and global policies of sustainable development that obligate the schools in some matters. Obligations from the national and international community affect by the agreements and legislations to the school's decisions and actions. Still, placing sustainable development at the strategies of vocational school is not only because of the obligations and legislation, but also because recognising the necessity of sustainable actions for the wellbeing of the planet and future generations is important.

The importance of education and the possibility to teach the future workers in a way that promotes sustainable ways of working also at the workplaces and at the same time improves wellbeing at all levels is important. The possibility to act as a pioneer in this area and to use sustainable development also as a marketing tool makes the schools not only to do the necessary, but to push sustainable actions a little more than that to get some positive visibility.

Even though the plans and strategies are specific, the implementation of the actions by the workers can be unconscious without knowing what they are doing. This could influence the implementation of the actions, if the workers do not see the actions that they are doing to be important, but since the measurement and following of the different areas of sustainability, schools have possibility to find the problems and solve them. Informing the work staff more of the reasons and benefits of some actions might help to avoid misunderstandings, attitude problems and neglect, which are seen as the biggest reasons to disturb the implementation of sustainable development.



**FIGURE 5.** Combining category formed by three main categories of the data.

### 5.3 China

#### 5.3.1 Demands of society and labour markets directing the actions of vulnerable schools

Vocational schools are strongly influenced by the demands of labour markets and society. The development of vocational schools goes hand in hand with the local socio-economic development of society. The curricula are formed after a research of what is needed by the society and industry and how the already graduated students have employed: what kind of majors and workers local circumstances need and have the students been successful in work life. Vocational education is also seen as a service for the society since the workers that schools cultivate are seen as servants for the society. By working, they are doing something good for the community.

*Vocational schools are closely influenced by the socio-economic development and should be able to cultivate students with skills that meet the needs of society. IC4*

Another factor that influences the schools actions and decisions made is the status of vocational education. Academic education is highly appreciated in China, and on some level by detriment of vocational education. The low appreciation of vocational education in China is affecting the financing and resources of vocational education as well as the self-esteem of the students in vocational schools who feel failed at not being able to get to a university. The status distinction between vocational education and academic is deeply rooted in China, and consequently vocational education is perceived as having a low status by the public (Stewart 2015, 19). Most of the financing is given to basic and academic education trying to set a path that starts successfully already in basic education leading to universities.

*The financing is like a cake, divided in three parts. One part is universities, other one is basic education and the third part is vocational education...basic education is very important. In China, usually the hardworking students and the smartest ones try to get to universities. So in our traditional idea usually the students who cannot archive very high level in basic education they choose vocational education. So, in this financing cake, if you give much money for two parts, the third one will be small. IC1*

Anyhow, facing the emerging challenges from both inside and outside of education system such as critical shortage of qualified technicians and skilled workers, the fact of high employability of vocational school graduates has made the Government of China to make vocational education the next key target when promoting education. Since the economic difference between different areas of China, the priority is given to rural and less-developed areas. (Yan 2001.)

Schools need to have cooperative partners within the enterprises to have the students some place to train their working skills. This is usually a problem due to a lack of enthusiasm by the enterprises and industry.

*Usually, in the cooperation between vocational schools and enterprises, the problem exists on the enterprises. And the reason is, that the enterprises, they want to make profit. IC4*

*After 2014, the financing was cut, so these modes of cooperation are not possible anymore. IC5*

As an answer to the big challenges of finding cooperative partners from the enterprises, the local education bureau has set up a reform called Group running. It simply means, that all the vocational schools at the area, are divided in groups and the overlapping of majors and costs etc. are deleted. This means, that the many small schools with similar majors, who were having problems to find

cooperative partners from enterprises, transform to be bigger, stronger and more effective ones that are able to make some savings and better connections to the enterprises.

*Each vocational school has an outstanding major, but all the schools also have overlapping smaller majors, which makes it difficult to get enterprises to cooperate with the small majors. Through the reform, 13 vocational schools will be divided in to four education groups that will be managed by one headmaster. IC3*

The big influence of the surrounding society and the low status of vocational education are the factors that direct the actions and decisions schools make. To be able to overcome these challenges, schools are making reforms and development plans to be able to justify the need for vocational education.

### 5.3.2 Pressure to justify a need to continuity at local level

Due to the changing demands of society and the status of vocational education, the schools need to constantly make changes and reforms simply to develop and to be able to exist and justify a need to continuity. Some of the reforms are nationally wide concerning all the vocational schools, and some are made at provincial or city level to develop the school according to the local changes.

The number one priority at the schools seems to be to cultivate highly skilled talents. This is made by making sure that the teachers, majors and teaching modes are developing all the time. For example, a national reform called “Double qualified teacher” requires teachers to have six months training in the enterprises during five years to be able to both teach and work. By this, teachers should have both theory and technical skills.

*In many vocational school, when they hire a new teacher, the teacher usually comes straight from university, so the teachers doesn't have enough experience from working in enterprises. So this reform is to help each vocational school teacher to have six months experience from working in the enterprise. IC3*

*The learning and the teaching content in vocational school should meet the requirements of enterprises. And the teaching methods should meet the standards in the enterprises. IC4*

*Only when the students are qualified, the school can have a future. IC4*

*As a vocational school, the development of the school must keep pace with the economic development, for example, in the professional settings, personnel training goals need to follow the socio-economic changes in the demand for talent. IC5*

Another big nationally wide reform is launching modern apprenticeship training. The reform is designed as an answer to the challenges in cooperating with enterprises. Some of the schools are currently on a pilot phase in modern apprenticeship training model.

One of the local reforms is group running, which simply means combining the management, resources and some majors of schools located in same area. Besides helping the schools to find cooperative partners from the enterprises, this reform also helps to make savings when overlapping majors, jobs and other costs are combined to be under one vocational school and school administration.

*Vocational schools form a group that can be managed together to make savings and combining resources. IC4*

International matters are also affecting the schools. The schools want to upgrade the status of their students and are forming curricula according to the international demands. The schools are also making some international cooperation, for example student and teacher exchange programs.

*They are having teacher-training programs with Germany and Finland and also student exchange for example to Taiwan. IC6*

The path to keep on studying after vocational school has been weak for the students. Schools are trying to cooperate with vocational colleges and upgrade their status to help the students to continue their studying after vocational school. Enabling this education path to continue, some of the vocational schools and vocational colleges are also cooperating.

*If some student in this vocational school after graduation wants to continue studying, the school will help students on choosing major and to find out which vocational colleges you can apply. IC4.*

Since some of the reforms are nationally wide and some provincial and local, it means that the quantity of the reforms is big. Sometimes this can lead to a situation where the last reform is still in process when another one is already launched. In some cases, the schools do not have enough resources to complete all the reforms.

*They agree, that many policies made for education, the ideas are very good... But if the rules and the resources cannot follow the policy, then it doesn't work... and if they have enough resources, how to balance between different projects. IC5*

Sometimes trying to complete one reform can make it impossible to complete another one. One example of this is the national reform about teachers working six months in five years at enterprises, which is impossible for some schools.

*For example for this vocational school, they have calculated that they need about 300 teachers. They now have 224. The teachers have so much to do, and we don't have enough resources. If we let them to go to enterprises to work, it is impossible. IC5*

Trying to justify their need to continuity, vocational schools are in constant pressure of developing by making reforms and policies. Sometimes the reforms are pulling schools in two different directions, when there are not enough resources to complete all of them. Some of the nationally wide reforms may not be too accurate to the schools to complete, but they still pull away the resources schools need to invest to the local, more accurate reforms that are designed according to the local changes and development.

### 5.3.3 Caring and employability at the core of local strategies

While cultivating highly skilled talents to serve the society is a central aim and one important value of vocational education, it is not the only one. As well as student's professional skills, schools feel the need to pay attention also to student's personal life by upholding certain values and campus culture at the school.

Values that are highly appreciated in vocational education are morality and finding one's own place in the society. Many students studying in vocational school feel failed as students. They feel that they are not good enough since they were not able to get into academic education. Schools are struggling with the problems of the low status and want to help the students to find their own place in the society and to appreciate the work they are doing. Education in vocational school usually contains "life lessons", where students are guided on how to live one's life and find one's courage and competence.

*Many students when they come to vocational school, they are not confident. Because they feel they haven't studied hard enough so they have to come to vocational school. But the teachers and the headmaster, they will give lectures on how to find your own place in the society. IC1*

Professional skills contain two types of skills to learn: working skills and the work life skills. High professional skills and quality came up in all the interviews when talking about values and it

seemed to be the top priority. Morality was also usually linked to be a part of good professional skills.

*The first value is to cultivate the person that is suitable for economic development that means, what kind of person does society need... And they hope the students to be a kind of person both with the skills, knowledge and also high morality. IC6*

Besides professional skills, the students are educated on how to act in a work place. This contains matters on how to be a good employee, loyalty and social skills.

*The second value is related about some basic quality related with career. For example, entrepreneurship, innovation, physical and mental situation, the loyalty to workplace. IC4*

Every school usually has their own campus culture. Culture contains common activities that encourage the students to take part in different kinds of competitions. Competitions can vary from sports competitions, where the aim is to rise the common atmosphere and team spirit, to innovation contests after which the students' innovations can be on show in an exhibition. Other big part of campus culture, are social services, which encourages the students to do something good for the society, for example volunteer work.

*There is a special curriculum in this campus. It is called volunteer 100. That means, every student in this campus, during the three years of studying, you should finish 100 hours of volunteer work. IC4*

Campus culture also encourages the students to entrepreneurship, for example, by setting up a little enterprise inside the campus area to let the students run the enterprise themselves to see what entrepreneurship would be like.

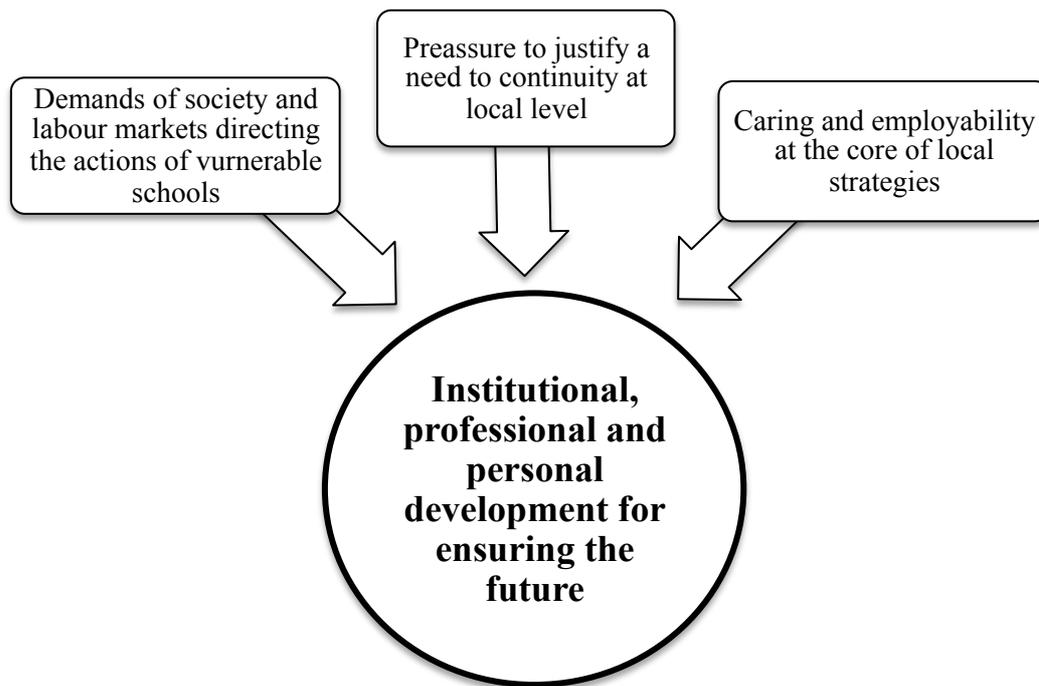
The employability of the students is usually been used as a development indicator of the schools, which leads to a competition between different schools. By paying a lot of attention to professional skills and high quality also in the values and campus culture of schools is an answer to the willing and need to help the students to find a job after graduation. These values including also work life skills and morality are completed with life lessons to make sure the students would find their own place and would be able to be satisfied with themselves even without the commonly required academic education.

#### ***5.4 Institutional, professional and personal development for ensuring the future***

Since the deeply rooted attitudes about what sort of education is appreciated, the vocational schools live under constant pressure to justify a need for existence. The status of vocational education is influencing the self-esteem and confidence of students as well as the financing of vocational education. Because vocational education is closely connected to the socio-economic situation of the surrounding society, it has to keep up with the changes and development of the local level.

By making reforms and developing students, teachers and the teaching methods, the schools hope to keep up not only with the local changes and circumstances but also with the competition of the development with other schools. Some policies and reforms are accurate to find solutions to problems such as poor cooperation with enterprises, while some of the reforms are simply too much to handle and only pulling resources away from where they are needed. International cooperation and longer education paths for vocational students are important issues to aim for to be able to make vocational education more visible and appreciated.

The highest aim to cultivate highly skilled talents is presented in every area of the education. This includes high quality and professional skills as well as morality and social skills on how to act as a worker. All these aims to cultivate highly skilled talents combined with the reforms for development in all areas are set to be an answer to be able to ensure a stronger future for vocational education.



**FIGURE 6.** Combining category formed by three main categories of the data.

## 5.5 Technical education

Two of the interviews were completed at the area of technical education. First one was done at a department which is responsible for technical education and second one at a technical college. While the aims of the two modes of education are quite similar, the administration and the status of vocational and technical education differ from each other. Technical education form only a small part inside the material, so I will present the result separately and make some comparison inside the Chinese system and findings at the end of this chapter.

### 5.5.1 Providing possibilities and future for the weakest

Technical education does not hold any entrance exams, which means that every one who is willing gets in. This has made a certain stamp on technical education, since it has been described to be the last choice for a student. Anyhow, the common atmosphere in the school is to invest on everybody's success and try to rise up student's social status, working skills and social ability. By respecting a skilled person the social state of a student could be upgraded.

*They hope the student's study in technical education could be more acceptable by the society. IC7*

If there is a deep gap between academic and vocational education, a similar but smaller one lies also between vocational and technical education. Only when the quality and student's skills are proved to be excellent, this kind of distinction could be changed in an ideal way. By concentrating on cultivating highly skilled talents and proving the knowledge and competence to society they hope to change the common atmosphere and make technical education more appreciated.

### 5.5.2 Good cooperation with enterprises as a head start to train highly skilled talents

Unlike vocational education, technical education does not have the problem of finding cooperative partners from the enterprises. During long-term development and research, the school has found out that the key to successfully find cooperative partners is to first ask what the enterprises needs are.

*Firstly, satisfy the enterprises demands, second, help the enterprise with big tasks – schools has advanced machines and students willing to help and learn at the same time. IC8*

This kind of model saves the costs for the enterprise and helps the students to find jobs in the enterprises. The school also has a model called “School-enterprise dual system”, which makes the students workers in the enterprise. By this model, students are able to practise their future working abilities, including social abilities. After students graduate, they already have two years of work experience which they have gathered while studying at technical school.

Technical schools have also brought the enterprises to the schools by building academic training centres. During this kind of cooperation, the enterprises take part to everything related with education, including curriculum etc.

One way to push the students and teachers to pursue their best is to cheer them to take part in world skill competition. The school has an idea that the goal of education is at the world skill competition and the students are trained to compete.

*By participating to world skill competition it is possible to find out the international standard and curriculum. IC8*

Succeed at the competition is pursued by first transforming the world skill competition technical standards to the technical education talent cultivation standards and to the course standards. A second step is to transform the competitor's methods to vocational skills talents cultivation. In order to do these transformations successfully, college has established the World skills talent

research centre. The important point here is that it is more valuable to educate all the students in the school according to the international standards to cultivate highly skilled talents than just have a few students winning in a competition.

*We've been to research and to transform the outcome and standards of the world skill competition, it is more valuable than just to cultivate a competitor to win the medals. IC8*

The success achieved in the world skill competitions is a great factor in building up the confidence of the students in technical school. The development of students and teachers is kept competitive, cheering them to develop as far as possible.

### 5.5.3 Enabling a future and success after feeling of failure

Vocational and technical education in China have a different basis. The first one is managed by the Department of Education, while the other is managed by the Department of Human Resources and Social Security. Both suffer from a low appreciation, but technical education has an even lower status than vocational education. Since technical education does not hold up any entrance exams, everyone can get a place to study a profession. Technical education also trains children from poor families, soldiers, farmers and the ones who wish to update their practical skills. Besides cultivating highly skilled talents to serve the society and industry, building the competence of students and helping them to find their place in the society, is one aim of both educations.

One big difference between vocational and technical education is the success in cooperating with enterprises and industry. While it has been a major problem to vocational education, technical education has successfully cooperated with enterprises and built up academic training centres in the schools and brought the enterprises to the campuses.

During the interviews made in China, only technical education had something to say about ecological dimension of sustainability. Since the aim of the school is to teach the students according to international criteria, the school's curricula should also include ecological content. This means that the students should be cultivated to be human with a wide knowledge. The school also pays attention to ecological issues by recycling old materials and by making teaching materials themselves.

## 6 CONCLUSIONS

In the previous chapter, I presented the main findings and priorities of the material. Now I will sum up the results, place them under the research questions and point out the similarities and differences between the two countries. Finally, I will consider what factors could influence and create these variations, and reflect some recommendations for future.

### *6.1 How do global policies of sustainable development relate to local strategies of vocational education and training?*

The route of globally agreed policies of sustainable development to local strategies of vocational education was more clear and visible in Finland than in China. For example, the influence of United Nations' Agenda 2030 finds its way to the schools in Finland through government programs to cities and finally to schools. Sustainable development is included in the government program and detailed for example at the account of council of state (Valtioneuvosto 2017). The Ministry of Education has also published several documents and guidelines concerning implementation of sustainable development at different fields of education. It has been made to concern everyone by creating a society commitment called "Finland we want 2050", inviting cities, communities, enterprises and everyone by themselves to join. Issues concerning both Agenda 2030 and commitment for society were brought up and discussed during the interviews.

On the other hand, even though China has also made national plans and strategies on how to implement Agenda 2030, including detailed plan on how to act on every 17 goal on Agenda 2030 (China's National Plan on Implementation of the 2030 Agenda for sustainable development 2016, 19-64), it was not mentioned at all at the school level or at the local and city level administration of education. Sustainable development has a deep and important place consequently at the development agenda and national strategies of China, but no national specific action plans for education for sustainable development exists. The Ministry of Education has proposed some reforms related with educating vocational education students to have green economy skills, but still the concepts of education for sustainable development and sustainable development itself are lacking recently made national policies for vocational education and training. (Han 2015, 65-68.)

In Finland, the schools have made action plans to implement sustainable development concerning matters such as energy using, waste sorting, wellbeing of students and work staff, and implementations of these strategies are monitored and measured. While many national policies concerning sustainable development in China suggest that knowledge, capability and practise of sustainable development should be included to be a part of education at different levels (Han 2015, 65), whenever discussed about sustainable development and asked about strategies for sustainable development, the conversation stayed only around the word “development” without any addressing concern to the meaning of sustainable. To be able to answer to the demands of society and industry and also to raise up the status and position of vocational education all the answers were centralized to on going development in every area. At school level, no strategies of sustainable development were implemented in China.

## ***6.2 What are the aims and goals of vocational education in local strategies?***

The number one goal in vocational education in both countries is to educate and train professionally highly skilled workers. Vocational education is very much labour market oriented, and it of course has its influences on the aims and goals of vocational education. What is different between the countries in this area, are the other aims.

In Finland, besides develop employment and economy and answer to its requirements, overall aims and guideline principles of vocational education are to upgrade and maintain vocational know-how of citizens, promote employability, give preparedness to entrepreneurship and maintaining ability to work and finally to support lifelong learning and professional growth (Law on vocational education and training reference, 15.1.2018). Other more specific aims, that were discussed during interviews are to educate the students also to be acknowledging, independent and responsible professionals who become to be proud members of the professional community by occupation degree.

In China the need to educate highly skilled professionals according to the needs of industry and labour markets, is the main aim. Since rapidly developing economics the education system must be able to keep up with the changes and produce more highly skilled workforce (Guo & Lamb 2010, 11). Besides this, what became clear during the interviews was that the status of vocational education brought up others aims also. Big part of vocational education is to help the students to find their own place in the society by building their courage and competence. Instead of being part of professional community, the aim is to find out how to be able to somehow help and

do service for the community and society the students live in. Teaching about morality and doing volunteer work are part of this kind of education.

### ***6.3 What is the position of sustainable development in vocational education?***

In Finland, sustainable development had clear position at vocational schools. Vocational schools had made several action plans and strategies by themselves on how to implement sustainable development, monitoring and evaluating their actions on it and also trying to make sustainable ways of actions to be a natural part of everyday actions. Sustainable issues were included to be at the core of school values, strategies and also through curricula to teaching and learning to ensure that the students know how to act sustainably in the work places. Educational institute, which promotes sustainable development, is a place where sustainable development is a part of every kind of action (Tauriainen, Laininen & Alasentie 2008, 7). Also legislation obligates the schools to act in a certain way and this is also one reason to pay so much attention to sustainable development. Other big reasons were concern of the state of the planet and the fact that sustainable development is the only way to ensure for the future generations decent conditions to life. Also the possibility to get some positive visibility by promoting sustainable development was one of the benefits. The problem in implementing sustainable development might be the distinction between the strategies and practise. If the work staff is not aware of the reason of certain actions, they might not implement them as expected. The lack of information might lead to neglects and misunderstandings.

In China, sustainable development did not have a clear position in vocational education. As mentioned before, the strategies at vocational schools were concentrating on developing all the areas; teachers, teaching methods and students. Whenever asked straight about sustainable development, the conversation always stayed on the development of these areas. When asked about ecological sustainable development, there usually was no answer.

In larger point of view, I could say that sustainable development has a position at schools actions and strategies, but it is unconscious. Some of the policies and reforms are aiming to cutting down costs and time so one could interpret them to be somehow related with economic sustainability. On the other hand, when campus cultures and taking care of student's future and the society are some of the aims, social sustainability is implemented. Even when in this sense one could find out elements of sustainable development, it is not the case from the point of view of Chinese vocational schools, since sustainable development has not been consciously at the base of these strategies and aims. A big difference between the two countries in this area is that in Finland

the emphasis was more on the word “sustainable” when in China, it laid more on the word “development”.

#### ***6.4 What explains the variation between China and Finland?***

When reflecting on the findings of my research to the research questions it seems there are more differences than similarities between the two countries. It is understandable, since the countries are different in many ways. In this chapter, I try to answer my final research question by trying to find out how to explain these variations between China and Finland and what conclusions could be made from the results.

The biggest variations in the results are in the relation and implementation of global policies of sustainable development at local strategies and in the position of sustainable development at schools. I am taking a closer look into these variations by examining them from three points of view that could explain them.

##### **6.4.1 Local circumstances: stable or rapidly growing country**

Differences in the relation of global policies with local strategies could be explained by the fact that China and Finland are on a different level when it comes to socio-economic development. This means that the global policies of sustainable development are not simple to turn into practise because every country needs to take local circumstances and possibilities into consideration. It also means that the position of sustainable development in education overall or the emphasis of its dimensions inside education can be different, if the country does not see the importance of it as a priority before other challenges.

Even though China has made a great economic development, the gap between different areas inside China is creating imbalance in economic and social development, which means that for example the amount of poor people is still big. This forces China to place economical development to be a priority. According to “Program of Action for sustainable development in China in the early 21<sup>st</sup> Century” (2007, 5) by the Government of China, economic development is the first concern. Being still a developing country, China tries to first balance the economic development between different areas before being more concerned about the social, cultural and ecological sustainability. While China has enacted and enforced important laws and regulations concerning sustainable development, and people’s awareness of sustainable issues has risen, there

are still great challenges such as weakening of natural resources by voluminous consumption and the fact that social development is lagging behind economic development. (Above mentioned 2007, 3.) At vocational schools, the overall situation appears as absence of strategies concerning sustainable development. As mentioned in the results, the elements of sustainable development, such as increasing the wellbeing of students and saving costs, are emphasized at the strategies, but not under the concept of sustainable development.

Finland, as a small country, has approximately the same socio-economic situation around the country and is able to invest and take care of all the areas quite equally. The situation in a country as big as China where different areas and provinces can have very different levels of development, forces China to prioritise also inside the country, between provinces. According to Han (2015, 73), schools that locate at more developed areas, such as Beijing, Shanghai and Guangzhou, education for sustainable development is more active and committed. By this, Han must mean basic and academic education, since vocational schools at Guangdong area did not bring up any matters concerning sustainable development. The situation related to sustainable development seems similar to the financing of education: education for sustainable development is mostly invested in basic and academic education instead of vocational education.

Local circumstances also include the matters such as population and culture. The Chinese population is approximately 250 times bigger than the Finnish population, which has its influence on culture and overall atmosphere. The sense of community is more alive in China than it is in Finland. The responsibility to take care of one another and do something good for the community that people live in is encouraged at vocational schools in China. In Finland, more individual culture is alive, and the sort of atmosphere, where everyone is responsible for themselves, is prevails. Students are educated to be acknowledging, independent people, who can take care of themselves. While these goals are good and worth aiming for, they need to have a sense of community and responsibility for others next to them. In this sense, the overall development level of a country can also influence what the aims and goals of education are and what can explain the variation in this area between Chinese and Finnish vocational education.

While it makes sense that local circumstances are a fact that must be taken into consideration when trying to translate the global policies into practise, one might argue that it is not reasonable to separate the dimensions of sustainable development from one another. All dimensions are tightly linked together and have an influence on each other. For example, when investing social sustainability, such as the decreasing of poverty or the increasing wellbeing of a community, it has its influence on other dimensions of sustainability as well.

## 6.4.2 Administration and decision making of vocational education

Other factor that could explain the difference inside the findings might be that the administration in the countries is different. While in China, education is administrated centrally, in Finland decentralized administration enables the cities to take local circumstances better into consideration. This also has an influence on the implementation of different strategies concerning sustainable development. As could be seen from the results, national strategies find their ways to cities and finally to schools in Finland, and the cities and schools have possibilities to affect their implementation. But in China, even though the strategies and reforms are made at national level, the implementation of them did not reach the vocational schools. Even though the issues concerning sustainable development have important and strong emphasis on national level, the schools did not mention any local strategies related with sustainable development. Global and national policies and centrality of sustainable development seem to lose their way on somewhere between the capital and provinces. Any system of vocational education should be designed by a province or a city to match the local circumstances, but they should still have connection to the national system of vocational education. In a country as big as China, a single model will not function on every level as it should. (Steward 2015, 31.) The matters and strategies of sustainable development should be included in these locally designed systems.

Administration and decision making also raises the question of who defines what is important in vocational education. What are the strategies to follow, what are the aims and goals, and finally, what is the position of sustainable development in vocational education? One example of what is defining teaching at the schools is the formation of curriculum, which is different in the two countries.

In Finland, qualification requirements define the overall aims, principles and guidelines to vocational education. Schools form their own curriculum based on the national guidelines, taking the local circumstances into consideration. The importance of sustainable development in education is also emphasized at the key skills of lifelong learning, established by the Finnish National Board of Education. The key skills of lifelong learning are an important part of vocational education helping the students to be able to prepare for changing circumstances in the labour market. (Finnish National Agency of Education, reference 11.11.2017). Sustainable development is one of the key skills, and because of that, it should have a place at schools' own curriculum.

In China, national curriculum for vocational education and training did not exist at the moment of the research. Curriculum is formed by the schools themselves after an implementation of a research to the local area to find out what is needed by the society and industry. After the

research, which is usually implemented by teachers, the schools decide whether to create new majors and which things should be invested in. Education programs and curriculum are designed to fit with the local professional and occupational needs (Lai, Maturu, Stamberger, Stephens & Sze 2011, 3). In this way, when there is no connection to the national wide direction of education, the link between nationally emphasized matters, such as politics of sustainable development, are not connected with local strategies, even through curriculum.

### 6.4.3 Position and status of vocational education

Third matter which could explain the differences between China and Finland is the different position of vocational education at the education system. Chinese and Finnish vocational education has differences, when it comes to appreciation and also status of education.

The common atmosphere in Finland is that all the levels of education are equal. Academic education is not something that everyone is expected to apply to and alternative paths of education are still valued. Students have the right and possibility to choose how to educate themselves. Also, the education system is made to be flexible, so that the possibility to change directions is available, and no education path leads to dead ends. One is able to re-educate themselves and change occupation almost at any part of life. In the middle of vocational and academic education, there are universities of applied sciences, which include matters of vocational skills to academic skills.

Education is highly valued in China and the belief that national development and modernisation is based on education is strong (OECD 2016, 12). Academic education is highly appreciated and usually vocational education suffers the consequences. Students are early in the childhood prepared to manage well in basic education, so that the path to academic education would be ensured. While the overall atmosphere is still this, the students who are not able to get to universities suffer from low self-esteem and lack of competence and courage. What should be done is to create paths and bridges between academic and vocational education. This could be done, for example, by creating applied universities or by building an educational institution that offer both technical and academic options. This would help to achieve a condition where the principle of “no dead-ends” would come true. (Steward 2015, 32.)

A joint mission of vocational education in both countries is to educate professionally highly skilled workers to the industry. Also, education is society- and labour market-driven, since the students that graduate are a major part of the functionality of the society. But the difference is that in Finland the students are becoming a part of an occupation community after graduation, when in

China they become servants of the society. This is also affected by the common perception of vocational education in China, which needs to be changed to broader conception of people's comprehensive abilities other than only academic. (Steward 2015, 32.)

This might explain the difference in implementing policies concerning sustainable development and the fact that sustainable development has got different position in vocational education in China than in Finland. It is also related with the different aims and goals of vocational education. While having a pressure to justify a need to continuity in China at local level, the focus must be on the local changes to keep up with them. In Finland, when the position of vocational education is stronger, schools have more possibilities to focus on matters like sustainable development.

### *6.5 From global rhetoric to local reality*

The aim of this research was to find out how the global policies of sustainable development relate to local strategies of vocational education. It comes without saying that the journey of global policies of sustainable development to local strategies is long and twisting. Difference between countries around the world is significant and the policies cannot be turned straight into practise. Every country must take the local circumstances into account when trying to do their best to successfully implement the policies. Policy formulation is highly dependent of the context, which also impacts their implementation, while at the same time global policies have affection in places that are far away from where they have been made (Yang 2014, 285). In many cases, the social and environmental dimensions of sustainability are managed through different policy channels than economic, or they are subordinated to economic goals. Examples of integrated sustainable development strategy are still rather rare. (Bachtler 2010, 57.)

Globally agreed policies of sustainable development are important and accurate. But to be able to make sure that they are not just words on a paper, but really turn into practise, the possibility of turning the decision-making upside down must be taken into account. By this I mean that the policies and the willingness to make changes should start from the grass-root level where the possibilities of implementing policies and strategies could be better observed. This could be done by practising place-based policymaking.

As could be seen from the results, nationally wide strategies relating to the global policies of sustainable development were made in both countries. This means that global policies do reach the national level of both countries, but the difference appears at local level. Place-based policymaking is designed to meet the local conditions and possibilities and it is driven by local opportunities and

resources. It also engages participants from local level to join decision-making while it aims for a change in behaviour. (Bellefontaine & Wisener 2011, 5.) The importance of matters such as sustainable development becomes clearer for people, when they get to participate in decisions and actions that greatly influence their daily life. According to Bourgault (2010, 88-89), horizontal management enables better integration of humans to optimally response to the challenges of sustainable development. Because of the immediate impacts on place-based policy or project, they are also more mobilizing for the local population or governments, than major national or global policies. Place-based policymaking enables the local community to focus on the issues that are most accurate on the local level. Policies therefore can be national, transnational or regional, using local actors and resources to address the issues felt most crucial at local level (Lamontagne & Carr 2011, 2).

## 7 DISCUSSION

At the beginning of this research project, I only had two main focuses: vocational education and training and sustainable development. Everything in between of these two was wide open for a long time before focusing on the relation of global policies of sustainable development to local strategies of vocational education and training. Sustainable development as a concept is popular and used a lot mostly by international community in international policies and strategies, but what does it mean in a context of education institution that educates professionals to work in different fields of society. Since global policies of sustainable development do not prevent the destruction of the planet as they are, how are they related to local strategies, which guide the true actions made by leaders, teachers, students and professionals of different fields.

The research material I gathered was diverse and I could have done many separate studies by focusing on different points of view. Since my personal interest is on education politics, I found this viewpoint to the research very intriguing. For a long time, I have been wondering and worrying about the changing atmosphere of confrontation which has been rising through the unstable situation of economic, social and environmental issues around the world. Facing and handling these problems has at times seemed like the sense of global responsibility has been lost and everyone is only responsible for themselves. Since the problems we are facing require opposite actions and atmosphere that seem to be prevalent these days, I focused on these changed ideas of aims and goals of education politics at the first theory section.

Since the material I gathered was diverse and wide, it took me a while to figure out how to handle it and what to look for. If I could change some of the questions afterwards, I would add a few straight questions about Agenda2030 or other global policies of sustainable development. During this research, I did not point out these policies by myself, but wanted to see if the informants themselves brought them up. This gave me important information about the importance and knowledge about policies of sustainable development at vocational schools, but direct questions about different policies might have given me more accurate information of their relation to local strategies. Part of the Finnish interviews were done face-to-face and some by email. While I felt this functioned well enough and I got all the information I needed, the group interviews gave

me more information and raised more conversation inside the group and brought up some unexpected ideas.

Reliability and validity of this research was closely paid attention to especially for the reason that most of the interviews were done in Chinese and translated to me. This might have had influence on understanding some issues, while some words or sentences could have been misunderstood or misused. Since the interviews were done in Chinese, it was difficult for me to make specified questions, because I was not able to follow the conversation. On the other hand, all the questions and answers were wide and diverse, which gave me possibilities to understand some matters I was not even looking for at the beginning. If there were any misunderstanding during the interviews, I was always able to ask some clarification afterwards from the translator, which helped me to form more coherent understanding of the material. All the help from the translator was very valuable to me and had major impact on the successful implementation of the research.

In China, even if sustainable development and actions for it were marginal at local level of vocational education strategies, factories and industry are required to follow national requirements of emissions and waste. This means that even if the students do not yet learn these issues of sustainable development at the schools, they have to learn them after entering work life. On the other hand, if the contents of curricula are decided by the researches made to industry by teachers, how come these researches include hardly any matters of sustainable development? Maybe in the future, elements of sustainable development will find their way to schools' actions, so the students will internalize them already while studying. This could possibly get started by investing in teachers, by empowering them to engage sustainable matters to teaching.

Even if in Finland these themes are already a part of schools' actions through the strategies and it is seen important that students learn these skills before entering working life, the final result always lays in humans themselves and their attitudes. Taking responsibility for one's own actions, but also considering the impacts of them on the lives of others is a key point. Here I found an interesting contradiction between the Finnish and the Chinese material. Sustainable development requires an atmosphere of communality to come true. This atmosphere already exists in China, but actions for sustainable development did not exist at local level. While in Finland, culture and the sense of individuality and competition dominate, but nevertheless sustainable actions are still at the centre of the local strategies of vocational education. Combining these thoughts to atmosphere in education politics, it seems that China has a potential to improve their capacity for more sustainable future, but is Finland losing the path if complying too much with the principles of neoliberal education politics?

As the research pointed, local circumstances have great influences on the implementation of sustainable development. For a further research issues, I would suggest to examine some already made place-based policies of sustainable development and their influence and functionality especially in the context of education. Another interesting topic for a further research would be the influence of neoliberal education politics on the importance and centrality of sustainable development in education. Is it possible to combine these two directions somehow or is one necessarily marginalizing the other?

As I stated earlier, a contradiction lies between sustainable principles and the principles directing education at this neoliberal era. While the trend of steering education according to the principles of economics and global competition is growing stronger, it is only a matter of time when the values emphasized at global education politics start to manifest in education institutions values and strategies and replace some other important issues, such as education for sustainable development, equality and global responsibility. It will be interesting to see which way the global education community chooses, or will we be able to somehow merge these two quite opposite paths together in order to create a bigger road to more sustainable future.

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## **THEMATIC INTERVIEW STRUCTURE, FINLAND**

### **THEME 1: Values and attitudes**

- What kind of values represent/guide/direct actions of this school?
- What is the position of sustainable development at the values that direct the strategy of this school?
- Is sustainable development important, why?
- What do ecological, economical, social and cultural sustainability mean at the values and actions of this school?
- What kind of meaning does sustainable actions have for this school?

### **THEME 2: Strategies and programs for sustainable development**

- How is sustainable development considered at the strategy of this school
- What do different principles of sustainable development mean in the strategy of this school?
- Where do they come from?
- Who affect to the formation of them?
- Who are responsible of the planning and implementation of strategy for sustainable development?
- How is it taken care of that work-staff has knowledge and skills of sustainable development?

### **THEME 3 Sustainable development in practice**

- How does sustainable development actualize in this school; some (practical) examples of all dimensions (ecological, economical, social and cultural)?
- Is it important that teachers and other staff act in a sustainable way and are committed to it?
- Why?
- What things could improve actualization of sustainable development?
- What things could disturb actualizations of sustainable development?
- 

### **THEME 4 Evaluation of implementation**

- How is the implementation of programs for sustainable development monitored and evaluated?
- How are the results reacted to?
- What could be improved to be able to better act in a sustainable way?
- What would you change or do otherwise?

## **THEMATIC INTERVIEW STRUCTURE, CHINA, VOCATIONAL SCHOOLS**

### **THEME 1: Policies and reforms**

- What are the policies and reforms that have directed and affected to schools actions in recent years?
- How strongly do they affect?
- What emphasizes on them, what is important?
- Does the school have their own strategy, what is the aim of this school?

### **THEME 2: Values**

- What are the values, which guide or direct the actions of this school?
- What is the most important task of vocational education?
- Besides profession, what do you want the student to learn?
- Campus Culture?

### **THEME 3: Sustainable development**

- What is the understanding of sustainable development?
- Is sustainable development important?
- Why?
- What is the meaning of sustainable development for this school?
- Is acting in a sustainable way important?
- Does the school have a strategy for sustainable actions?

### **THEME 4: Curriculum**

- How is the schools curriculum formed?
- What things emphasizes in the curriculUM?
- Who or what affects on these emphasizes?
- Does sustainable development have a role in the curriculum?

### **THEME 5: Action**

- How does sustainable development actualize in your school; some (practical) examples of all dimensions (ecological, economical, social and cultural)?
- Is it important that teachers and other staff act in a sustainable way?
- Why?
- What challenges does the school have in this area?
- What strengths?
- What things could improve sustainable actions / actualization of sustainable development?
- What things could disturb sustainable actions / actualizations of sustainable development?
- Does the school follow or measure the functionality of sustainable actions?
- If so, how does the school react to the results?

## **THEMATIC INTERVIEW STRUCTURE, CHINA, ADMINISTRATION**

### **THEME 1: Recent policies / guidelines / strategies of VET**

- What are the main policies/strategies on a local level that direct the learning institutions?
- What is important, what emphasizes in the strategies?
- What are the key values that emphasize in the strategies / policies?
- How do the strategies / policies form: who affects on emphasizes and directions?
- What is the importance of curricula?
- What VET aims for, what is its most important task?
- What are the challenges that VET faces?

### **THEME 2: Sustainable development**

- What is the understanding of sustainable development?
- What is the position of sustainable development in the strategies / policies?
- What do the dimensions of sustainable development; ecological, economical, social and cultural, mean in the context of VET?
- Is sustainable development important?
- Why?
- What is the significance of sustainable development for the VET?

### **THEME 3: Future**

- What does the future for VET look like?
- What is the position of sustainable development in VET in the future?
- What sort of policies and guidelines will be emphasized in the future?