

The Complexity and Diversity of Wicked Problems in School Contexts

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Master's Thesis in Education

Spring Term 2018

Department of Education

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ABSTRACT

Hong, Nguyen T. T. 2018. The complexity and diversity of wicked problems in school contexts. Master's Thesis in Education. University of Jyväskylä. Department of Education.

Globalization is a hidden context for educational change, which results from the interplay among social, political, and economic matters. A lot of education reform and challenging problems in education was mentioned in twentieth century. However, little research on recent challenging problems has been done lately. That is the motivation for this study, which contributes to interpretation of most recent challenging problems, namely, wicked problems in education in twenty first century.

Data for this research is taken from “Collaborative leadership processes in the changing education” (LED) project. First, the research on specific wicked problems in education are conducted in six educational organization. In addition, case study research is used to discuss the educational organizations’ contexts which relate to wicked problems. Then, the thematic inductive analysis is utilized to figure out the complexity and diversity of wicked problems in these organizations.

Relating to complexity of wicked problems, results stated that wicked problems were not only harmful but also essential. In addition, wicked problems had either negative or positive impact to educational organization. Mentioning diversity of wicked problems, results showed that wicked problems were different if the variety existed in the schools while wicked problems were distinctively different if the difference involved competition among educational organizations.

Teachers and students were main factors affected by wicked problems. However, schools did not have sufficient comprehension of their wicked problems. Therefore, helpful suggestions are presented in discussion part of this thesis in order to improve educational organizations’ situation.

Keywords: globalization, challenging problems in education, wicked problems in school context, complexity of wicked problems, diversity of wicked problems

ACKNOWLEDGEMENT

I have been in Finland for two years. It is my pleasure to study and live here during the time. When being far away from family, it was very challenging for me to start the new life. Thanks to the support of my lecturers, friends, neighbors, I was very happy during my stay and love Finland as a second home.

I would like to send my deepest gratitude to all staff of University of Jyväskylä, to be specific, lecturers of Faculty of Education. Importantly, I would love to show my appreciation to my beloved lecturers and Finnish mothers: Aini-Kristiina Jäppinen, my thesis supervisor and Leena Halttunen, the program coordinator. I could not be strong without your support, belief, and encouragement.

In addition, I also want to show my acknowledgement to my mother, who spent all her life loving me. Besides, thank you all my dearest friends: Soc, Bo, and Luka for raising me up whenever I need you most.

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1 INTRODUCTION

In the big picture, globalization provides the framework for educational change. Fullan (2016) state that the economic, political, and social matters contribute to the complexity of education. By stating this, Fullan means that the members of educational organization need to understand why educational change exist in their context and how it is influenced by economic, political, social matters.

Besides, Carnoy and Rhoten (2002) emphasize how globalization has an influence on education on three terms. The first term is in finance. They emphasize that there is a funding cut on public education. Therefore, the government tries to find other sources to develop the educational system. The second term is in market. When a country wants to attract foreign capital, there should be a sufficient number of high skilled workers. As a result, the demand for university and post-secondary education is high in order to provide skilled workers. This leads to the conflict that the funding for public education is reduced. The last term relates to education matters. When there is a comparison of education among different countries, the authorities tend to improve syllabus, standards, school leadership, and quality of teaching and learning.

This thesis mainly focuses on six educational challenging problems in the educational change, formed by the interplay among social, economic, and political matters: socioeconomic status of students, teacher related issues, culture, refugee, funding and economy, and school merger.

The first challenging problem is socioeconomic status of students. Terry and Irving (2010) state that children from the families of lower socioeconomic status tend to perform more poorly in their studies in comparison with those from wealthy families. They got poorer performance in reading and in mathematics. According to the report of U.S. Department of Education, they got poorer performance in reading and in math in fourth and eighth grade (National Assessment of Educational Progress (2007a, b)). Moreover, Ainley and Gebhardt (2013) agree that the more various the students' socioeconomic backgrounds are, the more different the schools' performances are.

The second challenging problem is teacher related issues. The focus lies here on teacher's quality, and teacher workload. Terry & Irving (2010) mention the first matter in

the diversity in teacher quality. They suppose that some teachers are less qualified in their profession. In addition, teachers who are less qualified are assigned to work with minority students or those who are poor (Peske & Haycook, 2006; Mayer, Mullens, & Moore, 2000). This diversity of teachers' quality contributes to inequality in teaching and learning.

The second matter is teacher's workload that can be very challenging. Sellen (2016) analyzed OECD's Teaching and Learning International Survey 2013 and concluded that teachers worked longer hours in plenty of countries. Therefore, teachers had little time for courses, peer observation, seminars and in-service training.

The third challenging problem relates to multicultural education and subculture. Banks and Banks (2010) explain that multicultural education is a model which involves all students in spite of their gender, culture, language, socioeconomic background or religion. Moreover, they emphasize that multicultural education is a process that cannot be fulfilled. Hence, multicultural education is a challenging problem for various educational systems.

Moreover, subculture can be clearly seen in different organization. Halttunen (2015) carried out the research of two day care centers in Finland. Traditionally, a single unit is managed by a director. Through educational change, one director is in charge of a lot of separate units because of merging schools. Halttunen (2015) finds out that the multiunit organization always searches for shared values, discussion, and agreement among teachers to make a shared school culture. At the same time, teachers still strongly want to keep distinctive subculture of their group. Hence, it is very demanding for teachers to balance the school culture and their sub-cultures.

The fourth challenging problem is refugee. UNESCO (2010) declares the huge number of refugees which has strong impact on the education of the host country. In most cases, the local teachers do not speak refugees' language so that it may take a long time for refugees to learn the language of the local schools before studying any programs. Besides, the curriculum may be different so that it is hard to put them to right classes.

The fifth challenging problem is funding and economy. Dority (1993) adds that funding cuts affect school service such as support for students with special needs. Normally school helps students with special needs a lot more than healthy students in order to get the same education equity for all students. However, when there is a decrease

in the budget, students with special needs are not assisted, which enlarges the disparity among students. Moreover, food program at school also influences low-income families. Free breakfast or lunch in order to support poor students no longer lasts. As a result, the parents in lower class should pay more for school while they are unable to do, deepens the gap among the poor and the rich. More importantly, this conflicts with the act of “No Child Left Behind” (Masseti, 2009).

The six challenging problem is school merger. Mo, Yi, Zhang, Shi, Rozelle and Medina (2012) indicate that there is a huge school merger by closing small village schools and starting larger centralized schools in town in the late 1990s and early 2000. Consequently, students lack of chance to study in their familiar neighborhood. Moreover, they join schools with boarding facilities and live far away from home, which has bad influence to their school performance. Seriously, students of shutting down schools suffer negative emotion through mergers (Shi, 2004). Meanwhile, there is a big increase of students in central areas. However, the numbers of teachers and school facilities remains the same. As a result, administrators, teachers, and students endure the incompatibility. (Pang, 2006)

All these challenging problems, in particular, leads to wicked problems that are the main focus of this thesis. Rittel and Webber are the first to initiate the term ‘wicked problem’, called hereafter WP. Rittel and Webber (1973) declare that WPs are distinctive and continuous because many categories in these problems cannot be solved completely by single solutions. Moreover, one WP may originate from other WP when there is an effort to deal with it. Horn (2001) defines WPs as social messes. Horn (2001) concludes that messes cannot be solved with simple approaches. Additionally, he emphasizes that social messes are more tangled than other problems. They are linked with economic, social, political matters, which makes them uncontrollable.

Moreover, people involved have various perspectives and contradictory merits. When people working in the same organization do not share the same beliefs and value, the social messes are intractable. In sharing the same view, Reed (2002) names WPs ill-defined problems. He defines that ill-defined problems are unlikely to be expressed in a specific or entire way. More importantly, a lot of different elements of ill-defined problems demand contrary solutions. Hence, the most suitable approaches should be paid more attention to in dealing with these elements. Mitroff (2005) contributes that ill-

structured problems, such as WPs, are basic matters of the argument about what they are in the organization and their characteristics. This means that different stakeholders have their own definitions and various understanding about these problems' features. In addition, they also have various backgrounds, and perspectives, which make effective agreement on ill-structured problems unsuccessful.

Not only WPs but also challenging problems arise in the interplay of economic, political, social matters. Challenging problems in education are discussed more in details below and there will be shown the connection between challenging problems in education and WPs in school contexts. Next, WPs will be discussed in the school context by an international study called LED.

My thesis is a part of the international project called “Collaborative leadership processes in the changing education” (LED). The LED study is conducted in fourteen educational organizations in four countries: Finland, Canada, New Zealand, and Sweden. The LED project provides a good example of the complexity of social, economic and political issues that challenge education of today. In dealing with these challenges, there is a need for collaboration. Jäppinen (2016, online) utilizes the concept of collaborative leadership and states that collaborative leadership is a process where all people of the organization involved act to fulfill shared goals and improve the working environment together.

WP is chosen for the topic of this master thesis because there existed quite a few of the studies about educational change focusing on especially challenging problems and their interrelation in education. Moreover, the main part of the WP research relates to business world or society matters, not on education or educational leadership. Therefore, it is suggested here that a clearer comprehension about WPs in education in today's organization is required.

In this study, the educational change shaped by globalization is the starting point. Then six current challenging problems of socioeconomic status of student, teacher related issues, culture, refugee, funding, and school merger; are captured from the literature review (Figure 1). It seems interesting that WPs are realized by the connection among social, economic and political contexts, like challenging problems in education. From this understanding, it is believed that challenging problems in education are wicked problems (Figure 2). In order to understand the WPs in education, I am discussing them through

two key terms: complexity and diversity proposed by Rittel and Webber (1973) to identify and understand more about WPs in school contexts.

Qualitative thematic analysis (Braun & Clarke, 2006) is used in analyzing the wicked problems arising from the six educational organizations in the LED project. It is suggested that this research hopefully identifies current wicked problems in educational organization and gives a clearer understanding of the complexity and diversity of WPs.

2 EDUCATIONAL CHANGE

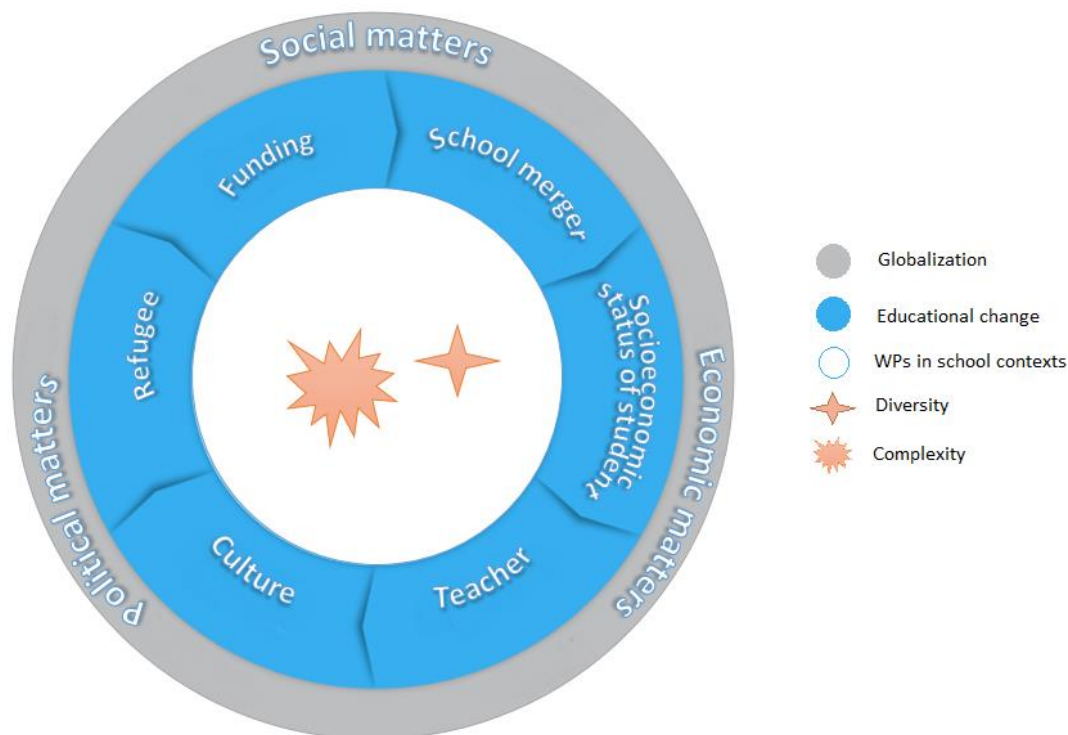


FIGURE 1. Diversity and Complexity of WPs in School Contexts

Figure 1 shows the background of WPs in school contexts. In the outermost circle, globalization shapes social, economic, and political matters. This shaping is connected to educational change because education supplies labor force to the market; for example, the schools should develop not only people's specialization but also soft skills to be competitive in global market.

In my thesis, I am going to focus on the six challenging problems that result, originally, from globalization : socioeconomic status of students, teachers' related issues

(teaching quality, teachers' workload), culture (multicultural education, subculture), refugees, funding, and school mergers. Each of them is a source for a challenging problem, i.e., WP, because these problems cannot be solved alone. More importantly, the interrelation among these problems make them uncontrollable. For example, when the government cuts funding, school mergers are necessary. Hence, teachers of different levels (kindergarten, primary, secondary schools) should work together in the same school. There become plenty of subcultures among these groups that have now to be joined. This affects the quality of teaching, too, and puts demands on teachers. All these problems contribute to the diversity and complexity of WPs in educational contexts. In other words, when there are more people involved, there are more ideas and ways to deal with different matters. Consequently, the problems become more complex. This complexity and the consequential WPs are the focus of this thesis. In the next part, I am going to discuss more in detail every part of the figure: globalization, educational change, challenges in education, and WPs in school contexts.

2.1 Globalization

Organization for economic and co-operation development (OECD) (2005) states that the the process of globalization is the internationalized process in which the domestic economies and societies are integrated-worldwide.

The influence of globalization to economic, political and social matters has been discussed in the last twenty years (for example, Giddens, 1990, 1994; Held, McGrew, Goldblatt, and Perraton, 1999; Hirst and Thompson, 1999; Sklair, 1995, 1999). Dolon (1993) state that globalization is a complicated phenomenon that is proceeded by the interplay of social, economic, and political matters. Globalization enhances borderless economy and transnational movement. This means that the economy of one country is not independent but interdependent.

Jenson and Santos (2000) state that globalization should be made locally so that people understand its meaning. This means that when the country is involved in regional organization, they have clearer view of globalization. In addition, Dale & Robertson (2002) approach globalization process by analyzing the influence of regional organization

to education inclusively and exclusively. In the next part, I am going to discuss more about educational change where globalization is its wider context (Well, Carnochan, Slayton, Allen & Vasudeva, 2005).

2.2 Educational Change in the Global Context

In Education for All monitoring report 2009, six goals of education were discussed. First, early childhood care and education are mentioned. Second, universal primary education is planned. Third, the lifelong learning needs of youth and adults are cared. Fourth, adult literacy needs improving. Fifth, gender equality in education is highlighted. Finally, quality of education between the rich and the poor is enhanced. These goals are agreed to achieve by participating representatives from different countries by 2015. They mainly focus on education as basic human right by Draft Committee (United Nations declaration of human rights, 1948, article 26). When educational leaders learn how to plan and act together, they are learners in the global community. At the same time, they would be able to transform education to meet the global challenge: Education for All. By acting as these goals, schools support students towards brighter future without regarding their socioeconomic background, age or gender.

The appearance of the Program for International Students Assessment (PISA), was a significant change in education in 2000. This test, which evaluates 15-year-old students' proficiency in Mathematics, Science and Reading, is used worldwide. As a result, countries which do not get high results try to enhance their education in order to be attractive internationally. Countries with very high results are seen as targets in searching for educational excellence. This is one example of social change to education.

Green (2002) announces that education is considered as an international merchandise in the context of globalization. Mundy (2005) adds that education plays a significant role in developing human resources, their understanding and qualification, which is the positive answer to globalization. Hence, the global economy is more powerful than national policies in navigating the development of education (Marginson, 1999; Held & McGrew, 2000). Furthermore, Rizvi & Lingard (2010) indicate that globalization refines educational policy in the perspective that it changes the ways in

which educational policies are applied and accessed. Robertson, Novelli, Dale, Tikly, Dachi & Ndebela (2007) continue the discussion among researchers by stating that the complexity of education is understood within the local, national, regional, and global contexts.

2.3 Theories of Educational Change

Wideen (1994) and Fullan (1994b) claim that educational change is processed by either ways: top-down or bottom-up. The top-down process is begun by policy makers who want to make innovation in the wide scope: the whole state, or the region. This way of change is inevitable and consistent. On the other hand, the bottom-up process is initiated by teachers, who want to make innovation in their own classes. This process may diffuse to other classes in the same school; then to other schools; broadly the districts. The process may be slow and inconsistent. Whether it is a top-down or bottom-up process, educational change stays strong when all stakeholders, school leaders, staff members, teachers, students and policy makers understand why change is necessary (Fullan, 2016).

Wideen (1994) classifies educational change to five categories: curriculum development, school improvement, school effectiveness, teacher research and teacher development. Curriculum development means improving the syllabus such as textbooks to enhance teaching and learning. The second category, school improvement relates to trouble or inner relationship in or among schools. School effectiveness highlights the school's performance, especially students' accomplishment. Teacher research focuses on the role of teachers as researchers. In fact, teachers do a lot of innovation at schools. When they suppose that there are more suitable methods for teaching, they will use these. If they are successful, they continue to develop these. If they are unsuccessful, they will try another way. Teacher development gives emphasis to teachers as dynamic learners, which are in the center of educational change. They also learn how to adapt change. Fullan (1982, 1991) contributes that if educational change just happens in one category such as new textbook only while other categories stay still, it is a small change. However, Fullan (1982, 1991) states that educational change often covers several categories, which makes it very complex.

2.4 Concepts of Educational Change

Fullan (1982) explores that there are three stages of educational change: initiation, implementation and institutionalization. Initiation is the time schools start to adapt something new, for instance, student-centered instead of teacher-centered. Implementation means schools use different methods to improve student-centered: students are familiar with initiating new knowledge; teacher is not a resource but facilitator. Institutionalization starts when implementation claims victorious: student-centered diffuse to wider contexts: different schools, or districts. These stages are interactive, which means new stage starts when the previous stage is still progressing (Fullan, 1991).

Besides, Brummelhuis (1995) adds that there are two ways of implementing an innovation. The first way is “fidelity approach”, or form-based approach. Normally, this approach is an existing innovation that needs more practice as the direction of developer of the innovation. The second way is “mutual approach”, or interactive approach. After a period of time working with new curriculum, teacher try, fail, learn, adapt to students’ ability. The innovation is the interaction between teacher’s methods and the curriculum.

Moreover, Fullan (1991) discusses three important factors that make educational change real. They are relevance, readiness, and resources. Brummelhuis (1995) explains that relevance means the value and necessity of the innovation, which inspires stakeholders to conduct. However, the innovation is not so serious that teachers feel that they cannot make it (Crandall, Eiseman, & Louis, 1986). Readiness refers to the ability of the school to adapt change. If the school suppose that all members’ (leaders’, parents’, teachers’, and students’) attitude and behavior are positive, they are ready to welcome innovation. Finally, resources relates to schools’ facilities, time, teachers’ skills, and the context.

Furthermore, Louis and Miles (1990) adds more factors to innovation. They are the shared goal among school’ members; the positive organizational culture; the supportive learning environment; the way of evaluation. The emphasis point is that these relating factors are not separate. They interplay with one another; shaping different forms, then indicate the defeat or accomplishment of the innovation. Sharing the same view with

this emphasis, Fullan (1991, p. 67) comments that innovation is '*a dynamic process involving interacting variables over time*'.

3. CHALLENGING PROBLEMS

3.1 Sources of the Problems

This thesis mainly focuses on the six educational challenging problems arising from educational change: socioeconomic status of student, teacher related issues, culture, refugee, funding, and school merger.

3.1.1 Socioeconomic Status of Student

The strong connection between socioeconomic status of students and school performance had been mentioned for a long time. (Jencks, Smith, Acland, Bane, Cohen, Gintis, 1972; Marjoribanks, 1979; Noel & de Broucker, 2001, OECD, 2004).

Sirin (2005) conducted seventy four studies on the relation between SES and students' school performance and came to conclusion that SES is the toughest factor to students' learning outcome. Sirin (2005) explains that students with higher SES had better achievement in standardized test. Additionally, Masters (2016, p.10) claims that the main cause of reducing schools' performance is the socioeconomic backgrounds of the students. Therefore, students with higher SES tend to finish secondary school and university than those with lower SES. (Blossfeld and Shavit, 1993; and Willms, 1999)

3.1.2 Teacher Related Issues

Teacher's Quality

Menon (2006) declares that the teacher is the most significant factor that bring about the best of students' growth. Darling-Hammond (2000) also agrees that students' performance is linked to teacher experience and knowledge. More importantly, Wright, Horn and Sanders (1997) conducted a study on the effect of teacher and classroom context on students' achievement and concluded that the teacher is the most important element which affects students' growth. They believe that if students have an opportunity to learn with effective teacher in new school year, the students' performance is high. However, their growth is insufficient in comparison with those who always learn with effective teachers.

However, Terry and Irving (2010) comment that some teachers are less qualified in their profession. Besides, teachers who are less advanced are assigned to work with minority students or those who are poor (Peske and Haycook, 2006; Mayer, Mullens, and Moore, 2000). This diversity makes inequality in teaching and learning. More importantly, Simons, Van Der Linden, and Duffy (2000) express that teachers' traditional knowledge was no longer adequate for students to be competitive in the modern world.

Teachers' Workload

Masters (2016) claims that the Australian government tends to recruit future teachers in the top 30 percent of able school leavers. To be specific, the qualification of teacher education students is evaluated through the average of Australian Tertiary Admission Rank (ATAR) of 70. Those students with ATAR above 70 gets the offer to be teachers. However, it is the fact that the number of teacher education students with ATAR above 70 fell from 49 percent in 2013 to 45 percent in 2014; and 42 percent in 2015. (Commonwealth of Australia). This illustrates that teaching career is not attractive enough to students.

Sellen (2016, p. 7) analyzed OECD's Teaching and Learning International Survey 2013 and concluded that teachers worked long hours. For example, full time teachers worked about 48.2 hours in the typical week, even in the evenings and on weekends. In general, half of full time teachers worked from 40 to 58 hours, and one fifth worked more than 60 hours a week. Hence, workload is the main barrier of professional growth. As a

result, teachers have little time for courses, peer observation, seminars and in-service training.

From my teaching experience, the main reason of the low attractiveness is the economic and social matters. When teachers work hard without high salary or other necessities, students do not choose teacher education as their major. In serious cases, teacher students may change their major if they get another study offer. Students will no longer choose the major they would love to learn, but a major that definitely gives them chances for nicer jobs.

3.1.3 Culture

The definitions of culture are various. Moreover, culture may change depending on human's value. Gollnick and Chin (2006) suppose that culture is learned through the interplay among humans, family and social networks. Besides, a culture consists of language. Allwright and Bailey (1991) find that a new language involves the learning of a new culture. In other words, people get to know about a culture through learning its language. In some cases, people of the same countries still have distinct features of culture. Therefore, culture may or may not be shared by internal individuals or external people.

This disparity can be clearly seen when there is a large number of immigrants in one country. In many developed countries such as Finland, France, German, Australia, the U.S., Canada, there are students coming from the rest of the world. It is common that there are European, Asian, African students in one class. It is normal that an African teacher works with Chinese students at an Australian school. Whatever way the class is, culture of host country is much stronger than immigrants' culture. (Van De Vijver and Phalet, 2004). Therefore, the cultural barriers are unavoidable. Although English language is popular all over the world, people still feel it easy and comfortable to speak their mother tongue. Moreover, people may speak the same language but may not act appropriately in the culture of that language.

Multicultural Education

Horst and Holmen (2006, pp. 20-25) indicate that equity is the main reason of multicultural education, which involves to values of democracy. Schools try to create inclusive education regardless to students' socioeconomic background, gender, or race. However, it is somehow impossible to generate the culture that both supports ethnic minority and ethnic majority equally. Besides, multicultural education requires the open syllabus for all students and suitable in-service training for teachers. In addition, multicultural educational not only engages minority students but also their family' cultural background. When the more people are involved to multicultural education, the more complex it is.

Subculture

Organizational culture directs members' action and guide them in solving problems. (Howard Grenville, 2006). This shows the convergence of culture among people in the organization. Besides, subculture expresses the divergent ways of harmonizing, varying, and being apart of members in the organization. (Martin, 2002; Meyerson and Martin, 1987). In most cases, subculture disagrees with shared values of organizational culture. While organizational culture is understood through members' action, subculture is hidden and immeasurable (Meyerson and Martin, 1987) because subculture shapes members' action in different ways. (Martin, 2002)

Howard Grenville (2006) conducted an ethnographic study on subculture in a hi-tech company for nine months. She concludes that various subculture leads to divergent explanation for the issue of working environment. More importantly, she points out that subculture affects which action should be adopted.

3.1.4 Refugee

UNESCO (2010) mentions that refugees are challenging problems to education.

The 1951 Convention relating to the Status of Refugees states that:

A refugee is a person who ‘owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion, is outside the country of his nationality, and is unable to or, owing to such fear, is unwilling to avail himself of the protection of that country ...’

With this definition, refugees move to other countries and live under the support of that country. UNESCO (2010) declare that the host government may not accept refugees to schools. The local school may be overcrowded. The number of refugees might result in that the local actors cannot afford education to all at the same time. In most cases, local teachers do not speak refugees’ language so that it may take a lot of time for refugees to learn the language of local schools before studying any programs. Besides, the curriculum may be different so it is hard to put them in right classes.

Refugees can also feel that that they are different and isolated from host culture. (Li, 2001; Nauck and Settles, 2001). To be specific, refugees finds it hard to integrate to the host country because they are afraid of preconception, refusal, and discrimination. This is understandable because refugees may not be welcomed in some countries.

3.1.5 Funding and Economy

European Commission (2013) discusses the main influence of economic crisis on public education. Since the crisis, the first mark of the decline in funding for public education was seen. In some countries that reduced public expenditure, this process still continues. At the same time, the first-started decline was seen in Austria, Ireland, New Zealand, Norway, Portugal, Spain and the U.S., and Russia. This entails plenty of other problems. Many teachers have lost their job; some schools are merged or closed; the tuition is high; and the quality of teaching and learning is reduced.

Consequently, funding and economy issues are sources for the educational challenges. For example, Oliff, Palacios, Johnson, and Leachman (2013) note that there was a remarkable decline in school funds at higher education. They declared that the first

consequence of funding cuts is the reduction of staff, and study program at different universities. There are not many support from the library service, for example, reference books, facilities for the lab, and so on. (Bailey, 2008). Guy (2011) also shares that the funding for school textbook was remarkably reduced in 2011. Hence, this decrease led to greater difference due to the socioeconomic status of students. This also leads to high numbers of students' burnout. (Chen & DesJardins, 2008).

Moreover, the teaching quality falls down when the ratio of students compared with the teachers are high. A longitudinal study carried out by the Tennessee State Department of Education (1996 – 1999) concluded that students in low class size tends to perform well; pass the level; and get more chance for further education in comparison with those in big class size. (Heros, 2009).

3.1.6 School Mergers

Schmidt (2012) states that under funding cut, the remarkable merging process between universities and government research institutes was initiated in 2007, which decreases the number of universities from 12 to 8 in Denmark. She also adds the merger in Finland. There were 16 universities (consisting of creative and performing arts universities) and 26 polytechnics in Finland. The Finnish higher education system merged universities and polytechnics, respectively, to 15 universities and 18 polytechnics by 2020 (Schmidt, 2012).

Wallace (1996) carried out the research on the merging process of three primary sector schools. He declares that the staff always want to keep distinctive identity before merging. Besides, the staff try to create shared values among members in order to develop harmonized working environment of the organization.

Cartwright and Cooper (1993) conducted a study on 157 middle managers during merger and acquisition. They gave the conclusion that there are some similarities between organizations after merging. However, the merger is quite tough to mental health of members in the organization. (McHugh and Kyle, 2006)

3.2 Wicked Problems

3.2.1 Complexity of WPs

Kolko (2012, online book) declares that

A wicked problem is a social or cultural problem that is difficult or impossible to solve for as many as four reasons: incomplete or contradictory knowledge, the number of people and opinions involved, the large economic burden, and the interconnected nature of these problems with other problems.

To be clear, Kolko (2012) quoted above gives some examples that illustrate the interconnected features of WPs. Poverty is connected to education, nutrition to poverty, the economy to nutrition. He adds that these problems are always challenging and uncontrollable to policy makers. Besides, poverty, sustainability, equality, health and wellness not only affect each member in the society but also all the society.

Rittel and Webber (1973) declare that WPs are distinctive because there are a lot of categories in the WPs that cannot not be solved completely by single solutions. Moreover, one WP may originate from other WP when there is an effort to deal with it. In short, WPs are continuous. Furthermore, Rittel and Webber (1973) discuss the solution for WPs. They suppose that the solution is impossible because science have a long history to deal with simple problems but it is not for WPs. This means that there is no orientation to solution because WPs are not similar to other known problems (Rittel & Webber, 1973).

According to Rittel and Webber (1973), the response to WPs may be either correct or incorrect because it is impossible to test immediately. Normally, responses to problems are planned in the order: perceive the problems; assemble information; combining information and coming to the solution. However, WPs are unique in the way that they are not feasible to first perceive then response because of their complexity. The solution may be known as good or bad after experiment only. Sometimes, the solution does not even exist. In the most serious cases, policy makers are responsible for bad results with their wrong decision. Therefore, they do not have many opportunities to do it again.

Furthermore, Rittel and Webber (1973) state that WPs are result of interaction among social, economic and political systems. Ackoff (1974) and Horn (2001) also share the same view that WPs are messy and confusing because there are no pattern for them. In addition, Roberts (2000) differentiate WPs from other problems so that there was a clearer view about WPs. She classified problems into three types. The first type is known as simple problems when people all agree with what the problems are and how to deal with them. The second type is complex problems, which people admit them but disapprove with the solutions. The third type is called WPs that happened when people have both various understanding and responses to the problems. With these definitions, she means that WPs are in the highest level of all problems.

Conklin (2005) supports Rittle & Webber (1973) that WPs are uncommon and constant. Besides, Conklin (2005) has the same opinion with Roberts (2000) that when WPs appear, no communication among people in the organization are constructive because they have different knowledge about WPs and solutions as well. Furthermore, he emphasizes that WPs, which pull people of the organization apart, were the fragmentation force of social matters. Camillus (2008) confirms Rittle & Webber (1973) that WPs varied while there were any efforts to mark them. He also adds some features of WPs. First of all, the problems' roots are too complicated to identify. Then he continues that the solutions for WPs are not either correct or complete when WPs keep reshaping. Finally, he concludes that these features make WPs wicked.

Kolko (2012) strengthens Rittle & Webber (1973)'s definition that WPs are quite particular. He comments that WPs may either link to or be a sign of other problems. He gives clear examples of WPs such as poverty, equality and sustainability, which cannot be solved each alone. Each of them is a WP. In addition, there were more than one description why WPs are wicked. When WPs are linked to others, WPs are more wicked. He supposes that one of the reason which makes WPs wicked is that they are related to social and cultural matters. Clearly, people have insufficient knowledge when the society keeps moving forward and contrary knowledge occurs when there is a culture clash. He also agrees with Camillus (2008) that solutions for WPs cannot be claimed victorious because WPs keep changing. To be more specific, Ritchey (2013) says that organization which deals with social, commercial or financial planning of public policies have WPs. Ritchey (2013) shares the same view with Camillus (2008) and Kolko (2012) that WPs keep forming and new structures appear. More seriously, Ritchey (2013) emphasizes that

these WPs may struggle when decision makers who attempt to solve them. They may bring unexpected results to policy makers, which means that incorrect decision has enormous impact on nationwide. Moreover, WPs are unclear to identify.

3.2.2 Diversity of WPs

Rittel and Webber (1973) find out that the causes of WPs are subjective in defining them. It means that with some WPs such as equity, people have different views about the term. When people's thoughts are various, diversity arises. Similarly, Roberts (2000) claims that causes of WPs are different because people do not share the same perspectives on one matter. She adds that the degree of disagreement among stakeholders are one of the causes of WPs. It was clear that the issuance of power among stakeholders is different. Conklin (2005) describes the situation of WPs that people are splited up rather than unified because they have dissimilar view, knowledge and purpose. When more people are involved in the same project with unalike level of power, more conflicts provoke. He adds that when the quantity and diversity of people involving in the same plan increase, the WPs are more wicked. More precisely, diversity is stronger when different stakeholders believe that their understanding about WPs is right.

Conklin (2005) contributes to the discussion among various researchers that people would understand more about WPs after they have temporary solutions. By giving this idea, he means that solution keeps improving with experiment. He suggests Dialogue Mapping as one approach to WPs. This approach, which supports different groups of stakeholders in sharing consistency on WPs, is considered as first step to deal with WPs. People share the same understanding, perspective and desire which makes WP less complicated. Ritchey (2013) also approves the above ideas that people's action in the organization is quite various when they collaborate and struggle with each other, which makes WPs more complex. Besides, Kolko (2012) adds that WPs are simpler to cope with through experiment. People learn better from errors. More importantly, the cooperation among stakeholders in related parties is also a key to a complete solution to WPs.

The complexity and diversity of WPs are shown clearly in the literature review above. Some researchers do not state very clearly about the root of WPs while some do.

Rittel and Webber (1973) realize that the interplay among social, economic, and political systems makes the complexity of WPs. Coklin (2005) adds that WPs are the fragmentation forces of social matters. To contribute, Kolko (2012) gives clear example of social matters such as poverty, equality, and sustainability, which are stated as WPs. Finally, Ritchey (2013) suppose that any organization that relates to social, financial of public policies has WPs. This means that social, economic, and political matters affect the complexity and diversity of WPs.

3.3 Wicked Problems in School Contexts

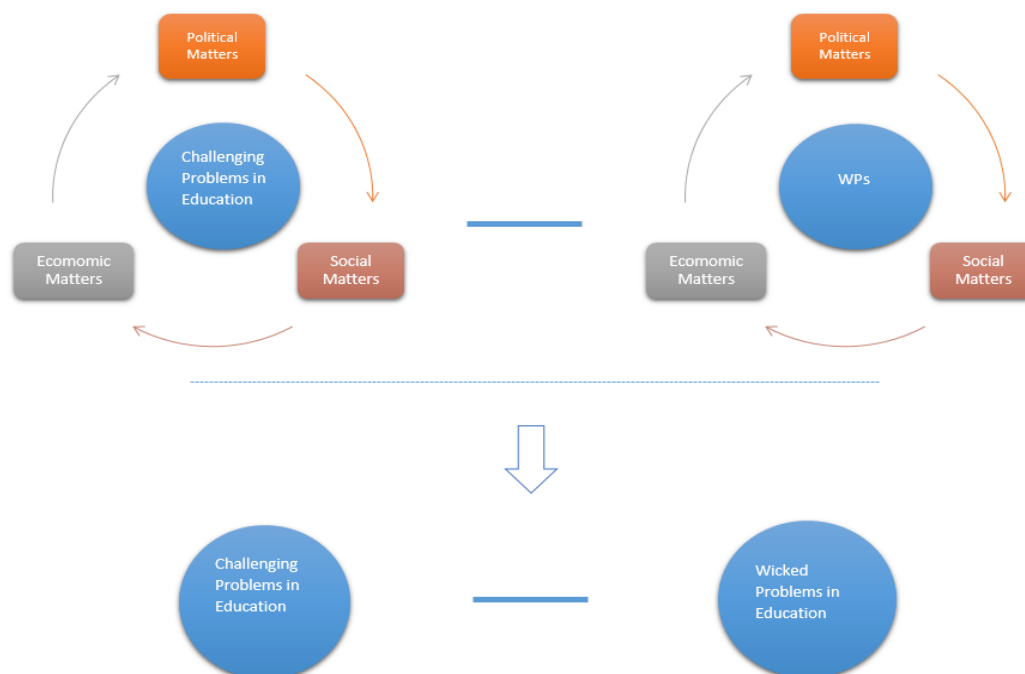


FIGURE 2: Wicked Problems in Education

Figure 2 represents the interaction among political, social, and economic matters which create challenging problems in education and WPs. First, challenging problems in education are products of social, political, and economic matters that mentioned in literature review. Second, WPs are also the result of interplay among these matters.

European Policy Network on School Leadership (2015) talks about the wicked nature of equity and learning achievement in schools. It is believed that wicked nature of equity and learning is originated from complex social and economic troubles. There are no best solution for this challenging problem in education. The solution could be

understood through experiment. However, the time to test whether the solutions are appropriate are long lasting. To conclude, equity and learning achievement in school, which is a challenging problem, is also a WP.

From this understanding, I am going to treat challenging problems in education as WPs in education.

4 RESEARCH TASK

The research questions that state two aims of this thesis are as follow:

1. What kinds of WPs are educational organizations of today facing?
2. How complexity and diversity manifest in today's educational organizations?

There are a lot of report on recent WPs such as refugees and funding cuts. However, there is few research that state the most recent WPs. In addition, most of the existing research on WPs are traced back to twentieth century. Moreover, the term WP is quite general and popular in business world, but not in education. Therefore, it is profitable to indicate WPs in today's educational organization. To do this, school contexts are first discribed; then WPs that arise from the context are discussed.

Without understanding the complexity and diversity of WPs, no effective solutions to WPs exists. Therefore, the second aim of my research is to understand how the complexity and diversity of WPs manifest in today's educational organizations.

5 IMPLEMENTATION OF THE STUDY

5.1 The Research Process

As stated above, my thesis data comes from an international LED project, lasting from 2015 to 2018. In the beginning, there was an online arranged meeting so that all representatives of the organizations got to know each other through webcam. During the meeting, the representatives introduced some general information about their staff, school context, as well as their excitement to join the project. The school also got two helpful toolkits, which were a guiding book and an Internet based collection. The book, named “Successful together! Ten keys for collaborative leadership” explored what collaborative leadership is by explaining how to work together.

After signing an ethical commitment contract, each school got the right to access a virtual LED space where they uploaded the data about their WPs and collaborative processes to solve them, exploited as the data in this master thesis study. These WPs were those ones that the staff needed to work together and solved ; or the educational organizations did not have any solution. English was used in writing down information on the virtual space and interacting with other schools and the research group.

5.2 The Participants

As stated above, my data comes from the LED project. I chose six LED organizations that described their WPs in details and could provide my research rich data. The organizations chosen to my study situate in Finland, Sweden, New Zealand and Canada. Furthermore, one school may have more than one WP that they would like to describe with the LED project.

TABLE 1: Information of Participating Organizations

Educational organizations	Information of the staff and students	
	Staff	Students
Organization A	70	580
Organization B	20	360
Organization C	Not indicated	Not indicated
Organization D	Not indicated	Not indicated
Organization E	Not indicated	Not indicated
Organization F	Not indicated	450-500

Table 1 gives information about staff and students of participating educational organizations. The first educational organization, named organization A, is both a kindergarten and primary school. All staff of organization A are involved in discussion their WPs. Second, organization B is a primary school which is surrounded by forest and fresh air which then turns to a WP. Third, organization C, a day care unit, starts analyzing what WPs means to their unit in 2014. Fourth, organization D is an International Baccalaureate school that integrates with the syllabus of Ministry of Education. Next, organization E is a mix house of two primary schools and two kindergartens. The schools and the kindergartens unite during spring 2016. Finally, organization F is a primary school in which grade is from one to eight (aged five to thirteen).

5.3 Research Methods

Case study research is used in identifying what WPs exists, in particular, in today's educational organization. Yin (2003a) declares that special need of case studies occur when the researcher really want to understand complex social phenomenon. The educational change arises under the interplay among social, economic, and political

matters. Therefore, if it is understood in the context of education only, no effective solution for educational change may be found. Besides, the WPs may interact with other WPs to make more wicked WPs. As a result, case study research is sufficient to explore WPs in today's educational organizations. Yin (2003a) also emphasizes that case study research makes study on, for example, organizational processes, meaningful in their real contexts. Hartley (2004) agrees that case study research includes very complete investigation, data of which is collected over a long period of time within their contexts. In the LED project, the educational organizations themselves defined and presented their WPs within their school contexts, which supports the first aim of this thesis in identifying the WPs under the impact of social, economic, and political matters.

To see how complexity and diversity of WPs manifest in today's educational organization, thematic inductive analysis is used. Boyatzis (1998) defines that thematic analysis is the method in which themes (patterns) is used to indicate, examine, and report within the data. Patton (1990) declares that indicated themes are strongly connected to the very data themselves in an inductive analysis. It means that there is no expectation to test a ready framework or hypothesis from former research. This is adequate when my thesis aims at understanding the complexity and diversity of WPs that occur in educational organizations from the emerged data. Patton (1990) also adds that the inductive themes normally have little correlation to any specific questions or interviews. This matches to the present thesis when the LED research tools such as questionnaires or interviews are not conducted to collect data but only the materials uploaded by the organizations themselves.

Six phases of thematic analysis (Braun & Clarke, 2006) are followed: Familiarizing yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report.

5.4 Data Analysis

I analyzed the data in order to find out the main themes by following the four phases of thematic analysis (Braun & Clarke, 2006). For clarifying the data analysis process, the

sample of organization F is illustrated. The phase 5 of defining and naming themes, and the phase 6 of report the data are introduced just in the result section.

Phase 1: Familiarizing Myself with the LED Data

Before reading the data, I had a look over the two research questions:

1. What kinds of WPs are educational organizations of today facing?
2. How complexity and diversity manifest in today's educational organizations?

After that, I read through the data several times with three initial themes: WPs, complexity, and diversity extracted from research questions.

Some of these problems are 'external' and we do not have enough control of some of the variables to resolve them, instead we have to manage them as best we can on an ongoing basis - for instance the problems caused by a phenomenon known as 'white flight'.

The problems we are interested in, and might be worth focussing on within this project, are those significant, persistent problems with causal factors over which we do have some control, and which have a very significant impact on learning outcomes for our students. We came up with a number of these as well. Some of these problems mean we have to spend significant amounts of time and energy solving problems which would otherwise destabilise the learning environment.

Phase 2: Generating Initial Codes

The three main themes: WPs, complexity, and diversity are important in searching for related codes. Then I marked related text in data extract in red while codes from the extract in blue. The way that I coded data extract is illustrated in table 2.

TABLE 2: Eleven Codes Arising From Data Extract

Data extract	Code
<p><i>Some of these problems are 'external' and we do not have enough control of some of the variables to resolve them, instead we have to manage them as best we can on an ongoing basis - for instance the problems caused by a phenomenon known as 'white flight'.</i></p> <p><i>The problems we are interested in, and might be worth focusing on within this project, are those significant, persistent problems with causal factors over which we do have some control, and which have a very significant impact on learning outcomes for our students.</i></p> <p><i>We came up with a number of these as well. Some of these problems mean we have to spend significant amounts of time and energy solving problems which would otherwise destabilise the learning environment.</i></p>	<p>1.External causes</p> <p>2.Out of control</p> <p>3.Controllable</p> <p>4.WP: white flight</p> <p>5.Selected WPs</p> <p>6.Important</p> <p>7. Internal causes</p> <p>8.Strong impact of WP</p> <p>9.A lot of WPs</p> <p>10.Time and energy consuming</p> <p>11.Bad impact of WPs</p>

Table 2 shows eleven codes from data extract of organization F. The first code is external causes of the organization's problem. The second code is out of control when the organization's problems were serious. The third code is controllable, which means that the organization showed their effort in handling these problems. The fourth code is white flight, which mentioned as the organization's WP. The fifth code is selected WPs that the organization chose from a lot of problems to deal with. The sixth code, important, states that the organization's problems were deserved attention. The seventh code, internal causes, originated the source of problems. The eighth code is strong impact of WP that influenced the students' performance. The ninth code is a lot of WPs. The tenth code is time and energy consuming when the organization's staff spent a lot of effort to deal with

the WPs. The last code, bad impact of WPs, emphasized that WPs should be managed in order not to affect negatively to students' growth.

Phase 3: Searching for Themes

After finishing coding in phase 2, there were eleven codes:

1. External causes
2. Out of control
3. Controllable
4. White flight
5. Selected WPs
6. Important
7. Internal causes
8. Strong impact
9. A lot of WPs
10. Time and energy consuming
11. Bad impact of WPs

Then I joined related codes together and had six themes.

The process of this phase was shown in figure 3.

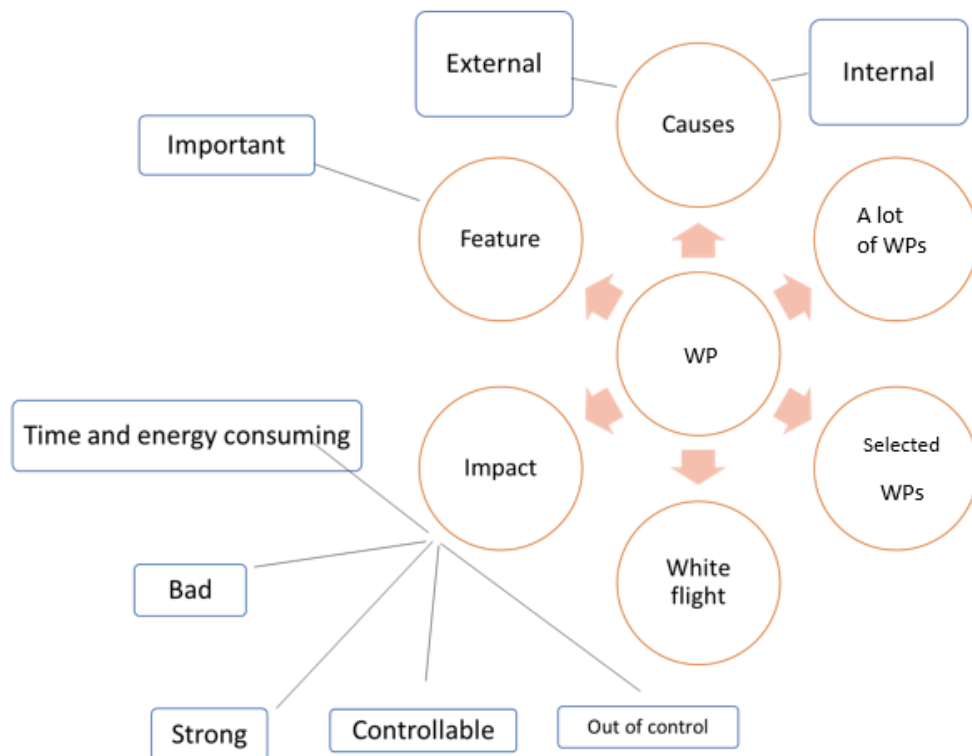


FIGURE 3: Six Themes Coming From Eleven Codes

Figure 3 represents six themes: a lot of WPs, selected WPs, white flight, impact, feature, and causes, which belongs to bigger theme: WP.

Code 1 and 7 were merged to the theme “causes”

Code 2, 3, 8, 10, 11 were combined to the theme “impact”

Code 6 were named to the theme “feature”

Phase 4: Reviewing Themes

Six themes: a lot of WPs, selected WPs, white flight, impact, feature, and causes in phase 3 were merged into bigger themes while irrelevant codes were cleared.

The three themes: a lot of WP, selected WPs, white flight were cleared.

The theme: time and energy consuming, bad, and out of control were named the new theme: negative

The theme: strong and controllable were named the new theme: positive

Figure 4 tells information about main themes after reviewing themes.

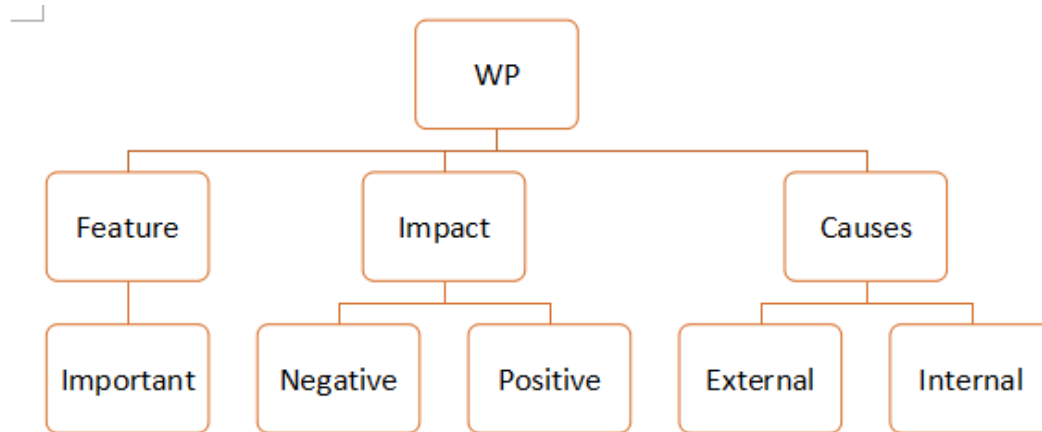


FIGURE 4: Three main themes after reviewing

Figure 4 describes three main themes after reviewing: feature, impact, causes, which belongs to biggest theme: WP. There were some smaller themes such as: important belongs to main theme: feature; negative and positive belongs to main theme: impact; and external and internal belongs to main theme: causes.

Phase 5 and phase 6 were described in result section of this thesis.

5.5 Ethical Solution

Before the LED project began, the participating organizations were either visited or contacted. This gave these education organizations an overview how they could benefit from LED, and how much time was needed for joining the study. In the LED project, organizations worked independently. This meant that all organizations' staff worked together and identified their own WPs within normal educational settings. These WPs were those problems that challenged most staff. In addition, the organizations were not

guided to give answers to any specific questions or interviews. Hence, they may write on the virtual space anything that they considered important as to their WPs. At the beginning, organizations stated the appropriate time that they may afford to the project. Besides, the research group did not ask these organizations for any extra workload.

The staff worked together in their first language. This ensured that they felt natural and relaxed in organizations' atmosphere. However, English was used in order that all participating organizations and the research group could easily ask for clarifications, or comment. Moreover, organizations were supported not only with the guiding book on how to work together but also by expert consulting on how to use the tools in the LED space. During the project, they may ask for help from the research group whenever they wanted. On the first day of LED project, they had a chance to see and talked to others through internet, which facilitated their later interaction. Additionally, organizations and the research group discussed who were going to be the contact people in each organization; and who were allowed to access the LED space. As a result, the LED data was known for committed organizations, and the research group only. In reporting the data, the organizations' names were marked with A, B, C, D, E, and F. Other information about names of organizations' leadership team; countries were anonymous. Organizations also signed the ethical commitment contract, which ensured that they were committed to the project's progress until its end and that the LED data would be accessible to the research group.

6 RESULTS

6.1 First Research Question: What kinds of WPs are Educational Organizations of Today Facing?

After the research group and six educational organizations share the same understanding of WPs, organizations' staff continued figuring out WPs in their organizations' contexts.

There were more than one WP in each organization. After highlighting all WPs that organizations declares in the LED space, I put these WPs in table 3.

TABLE 3: WPs Coming from Six Educational Organizations

Organizations	WPs
Organization A	<ul style="list-style-type: none"> - In order to improve students' results, the staff decided to work with language development - How to make strategies of genre-based instruction become a natural part of teaching in all subjects and not just anything that the staff just do once
Organization B	<ul style="list-style-type: none"> - Problems with the purity of the organization's building - Getting the new building - Merging with upper secondary school - Teachers are nervous and tired - Challenges of the new curriculum - New environment and new colleagues cannot help
Organization C	<ul style="list-style-type: none"> - Sense of hurry - Understanding the factors beneath hurried problem - Learning how to arrange daily routines and find a new approach which have space to evolve
Organization D	<ul style="list-style-type: none"> - How to integrate the syllabus of Ministry of Education and teaching practice from International Baccalaureate so that the school becomes a clearer choice in the community?

	- Promoting engagement of learners in their learning
Organization E	School merger: two primary schools and two kindergartens <ul style="list-style-type: none"> - Creating a unified whole working community - Finding a common schedule for development and cooperation - Staff discussion on practical issues and plan for future events
Organization F	- Phenomenon: white flight <ul style="list-style-type: none"> - Behavior, pastoral and other issues arising from poverty and violence in the community - Limited ability of parents and families to support and sustain learning - Poor quality learning environment - High level of students transience - Poor quality of teachers, poor teacher performance, ongoing teacher turnover or burnout - Pedagogical change

WP Relating to Organization A's Context

The organization's vision was knowledge, safety and respect. Mentioning knowledge, teachers did their best to transmit as much knowledge as possible to students. Talking about safety, they tried to make the school safe to stay in. Besides, they also wanted all members could enjoy themselves and be respected.

The students got very great outcome but the school leaders wanted to raise it. Then they decided to focus on Genre-based instruction, which was about the way how to teach and make students understand the content of lesson, and different kinds of texts.

They hoped to increase the students' learning outcome.

(Organization A: The school has quite high results, but we are not satisfied about that. We want to raise our results even more, so this year we've decided to work with language development. That means for example that we work with how we can give our students strategies to understand to content of texts and words better.)

When they realized that students did not get good marks in reading comprehension and maths because they do not understand the text in the mathematical problem, they concentrate on genre-based instructions.

(Organization A: The reason we have choose this subject is that we've noticed worse results in for example Reading comprehension and Maths (because the pupil don't understand the text in the mathematic problem and what the problems is about).)

The staff spent much time evaluating strategies of genre-based instructions on the day of education. They set high standard to students' learning outcomes. They began teaching genre-based instructions when students were at pre-school and continue teaching them technical terms in different subjects.

(Organization A: It's important to start teaching about Genre-based instructions already in pre-school.

Don't simplify. It's better to teach students the legal terms in each subject.

Have high expectations for the students)

Here comes their WP: make these teaching strategies vital and continuous to teaching.

WP Relating to Organization B's Context

Organization B is not in the city center so the organization's members enjoy the trees and fresh air in the area. However, there are some trouble with the air, which affects students

and teachers' health. This first WP leads to various problem for the organization: teaching; students' learning; all internal and external relationships within and outside the organization (staff, administrative, and parental concern). As a result, these teachers and students have to leave the organization. In order to solve this WP, the organization was getting a new building. This solution sounded effective; nevertheless, it provoked other WPs: the organization was going to mix with an upper secondary school. Besides, teachers were anxious and exhausted. At the same time, the change of the new syllabus confuses the staff.

(Organization B: We are not in center of the city so we have a lot of forest around and fresh, good air here. BUT our air inside the school is now our wicked problem. We have few pupils and teachers who has problems with health. Some pupils have already moved to an other school. We all want to know the truth and reasons for this situation. That takes a lot of energy from all of us and it disturbs our normal working all the time. Investigations are still going on.

In the first place our problem was inside air wicked problem. Now it will be OK (getting a new school building), so the problem has changed. New problem is new school and everything what concerns this big change. Next autumn we will unite administratively with upper secondary school. After one and a half years, we will physically unite. People are worried about many things and we can see that in everyday life here in the school. We don't have the same common spirit than before and teachers are more nervous and tired. Challenges of the new curriculum has been one confusing factor. New environment and new colleagues are not going to help it.)

WP Relating to Organization C's context

Organization C is a day care unit. The organization staff started to think about the quality of the work at a day care unit. They worked in small groups and tried to find answers to the question "What were some annoying things that needed removing or reducing at work?". After that, they used the scale 1-10 to calculate the amount of work load during the day. They supposed that the work load was too much for them to support the kids in

the best possible way. Teachers believed that they should be present more; be happier, involved, and rigorous so that the unit was the wonderful place.

(Organization C: We describe our answers like “children would be more peaceful, I could be more present, to be more happier and answer better to their emotions (sorrow and joys), had more strength to carry on, could give more special time to a one child during the day, could promote better child’s own impulses, could hold on my temper better, had time to figure out and solve out conflicts, could be more thorough and effective).

When dealing with the question “What were 1-3 annoying things that needed removing or reducing at work?”, the staff came to the answer that “Sense of hurry, factors beneath hurried problem, daily routines and find a new approach which have space to evolve” was the most confusing factor in the day care unit. This is also the WP of the day care unit.

WP Relating to Organization D’s Context

Organization D is a French-language school which belongs to a French speaking community. All the courses are taught in French besides English and Spanish classes. The students usually speaking English in the school’s hallway. This is also an IB (International Baccalaureate) that is in the control of Ministry of Education.

The school’s WP is how to combine working habits and abilities from the Ministry of Education with the learner’s profiles from the IB. During the meeting among the staff, the school discussed a lot their WPs.

(Organization D: On the post-it, it is written:

- *(negative sign) being able to identify working habits and abilities and IB’s learner profiles.*
- *(negative sign) link the activities to the strategies of working habits and abilities and IB’s learner profile*
- *to improve: being congruent when evaluating*

- *to improve: unified working habits and abilities and IB's learner profile*
- *(negative sign) having more power, homework, deadlines*
- *(negative sign) gender characteristics, reading and writing strategies, grammar*
- *(negative sign) working habits and abilities and IB's learner profile, definition for students)*

Besides, the focus of this integration is on promoting engagement of learning in their learning, which is also a WP.

WP Relating to Organization E's Context

This educational organization includes two primary schools and kindergartens. There are some other parts of the organization such as cultural affairs, library, youth services, sports services and places for activities after school.

There has been a merger between the kindergartens and primary schools. Therefore, the organization should find appropriate and enough time for common discussion and collaboration because each unit has their own values, understanding and culture.

(Organization E: The school and the kindergarten combined during the spring of 2016 and the biggest challenges are to create a unified whole working community. The staff works in teams and tries to develop a common working culture.)

WP Relating to Organization F's Context

This organization is a comprehensive primary school (grade 1-8) which supports student of low socioeconomic status. The school belongs to the responsibility of the board of trustee that are elected from the parent body. The school principal, who is in charge of building maintenance, the finances and budget, the appointment, supervision and

performance management of all staff , reports to the board of trustee after specific periods of time. Furthermore, the school has got money from the state depending on the formula, which reflects the number of students on roll and the ranking of the school. Besides, teacher staff's entitlement is based on the number of students as well. The school has also got a sum for maintaining the buildings.

(Organization F: We receive money from the state allocated according to a formula, which reflects the number of students on roll, and the "Decile" ranking of the school. We also receive a fixed sum for maintaining the buildings each five years and an allocation of "teacher staffing entitlement" according to the number of students on roll.)

The school's performance was reported to the Ministry and online annually. This enables parents in comparing schools' outcome. This also entails that schools to try their best to be the most competitive among other schools. As a result, the continuous influx of students who moves to schools with better outcome in urban areas regularly happens.

(Organization F: Our achievement results in Mathematics and Literacy are reported to the Ministry and on-line each year, which makes it possible for parents to compare school performance in a very crude way. This has led to a very high degree of competition between schools, and a constant movement of students between schools in urban areas.)

The first WP is migration. This is known as "white flight". This is a problem caused by social problems which affect education. It is definitely that the school cannot solve this problem alone but along with the society.

(Organization F: Some of these problems are "external" and we do not have enough control of some of the variables to resolve them, instead we have to manage them as best we can on an ongoing basis - for instance the problems caused by a phenomenon known as "white flight".

Some other issues such as being poor and violent of surrounding areas. Besides, parents are unable to improve students' learning outcome. Moreover, a lot of students left the school.

There are problems that we have to "react" to, however strategically we operate and include things like:

Behaviour, pastoral and other issues arising from poverty and violence in the community

Limited ability of parents and families to support and sustain learning

Poor quality learning environment

High levels of student transience)

In addition, leadership team also recognizes two problems that have influenced learning. The first problem is poor quality of teachers, poor teaching act, and teacher's reduction. The second problem is teaching methodology.

(Organization F: Poor quality of teachers, poor teacher performance, ongoing teacher turnover or burnout

Pedagogical change - the current school buildings are traditional, cellular classrooms. The new school will be 'open plan', or 'Modern Learning Environments', or 'Intuitive Learning Environments'. So teachers will have to change the way they work, moving from a transmission model, with one teacher responsible for the learning of a group of students within one room, to a more open and collaborative model, where perhaps 100 students are working with in a much more open.)

6.2 Second Research Question: How Complexity and Diversity Manifest in Today's Educational Organizations?

In this part, phase 5 and 6 of thematic analysis (Braun and Clarke, 2006) were used to report the data. Two main themes: complexity and diversity of WP were illustrated through subthemes.

Complexity of WPs in Today's Educational Organizations

Two major themes emerged from the data: features, sub-themes of Harmful and Essential and, impact, sub-themes of Positive and Negative. All the quotes displayed in this part were taken in a written form from the LED space of each organization.

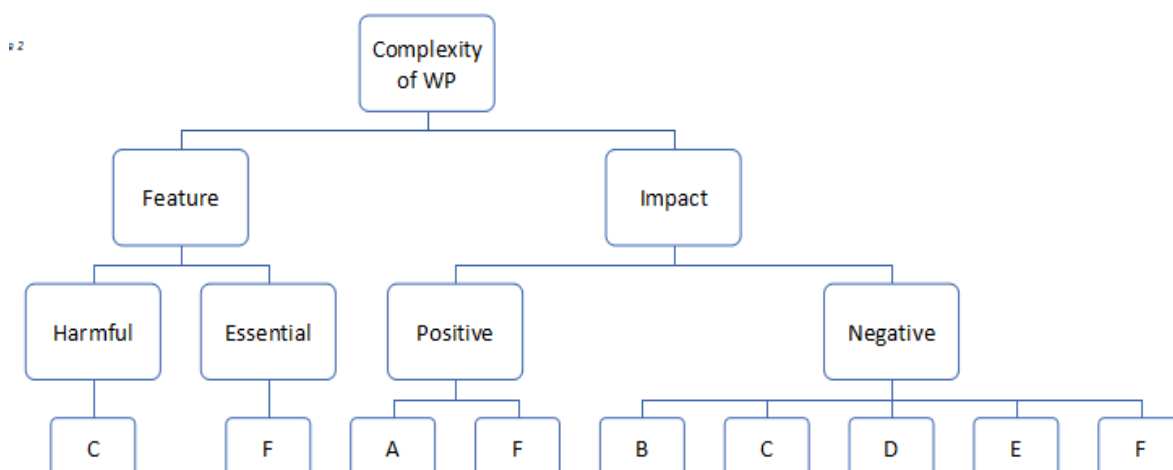


FIGURE 5: Complexity of WPs in Educational Organizations

Figure 5 describes the complexity of WPs in six educational organizations. There are two main theme of feature and impact. There are four subthemes of harmful, essential, positive, and negative. The six organizations A, B, C, D, E, F are under the themes that shows their organizations' characteristic.

Feature

Harmful

The feature of Harmful was mentioned by most organizations. When trying to tackling WP at the work place, staff of organization C had a survey on the confusing issues at work; then they came to the conclusion that it is sense of hurry. This feeling was unpleasant and tough to all teachers here. However, some of them believed that the solution were impossible in their situation.

(Organization C: If we could eliminate or minimize 1-3 disturbing things about our work, what would they be? Sense of hurry

Then we divided child's day in 18 periods and estimated which parts are demanding because of a sense of hurry.

We found special transition situations when the sense of hurry was relatively high for all workers.

Some of our staff were, to be honest, still wondering, this is too big to be solved.

In the process of identifying WP, organization F concluded that their problems were constant and challenging. More importantly, these issues were too “painful” to deal with. Besides, these matters were unable to manage because they were affected by political, social or economic matters such as poor building in poor region.

(Organization F: We have identified a number of problems which are persistent and difficult to solve.

We would also be pleased to share our learning, however painful.

Some of these problems are very big indeed.

For instance our building are in poor condition, as many other schools in low socioeconomic contexts in the region.

Some of these problems are ‘external’ and we do not have enough control of some of the variables to resolve them.

We discounted these issues because the casual factors are largely beyond our control

We already have extensive repertoire of strategies to address these issues (though never enough!)

The current school building are traditional, cellular classrooms.)

Essential

Another subtheme that emerged from the data was “essential”. In the quote below, organization C describes that WP is not only confusing but also mandatory. This is also the chance for them to deal with this WP to improve the working environment.

(Organization C: And also of course, when the hurry is a good and necessary thing in our work.)

Organization F found WP worthy and important because they believed that all members working together was the opportunity for them to explore the issue.

(Organization F: The problems we are interested in, and might be worth focusing on within this project.

The problems are those significant, persistent problems with causal factors.

These problems would provide plenty of opportunity for us to examine how we work other as a team to overcome them.)

Impact

Positive

Although solving WP was very hard, members of organization A appreciated the time that they spent because this was a nice chance for teachers to work together. They got to know much about other teachers because they had the same target: improving students' result in school test. At the same time, teachers learned from each other. They are quite pleased when students' learning outcome was enhanced.

(Organization A: The teachers have appreciated these discussions very much, and says that they have learned much from each other.

The teachers also got to know each other better and get a better understanding of each others' work in different classes and grades.

Teachers now understand that they do a very good job to prepare the pupils for the coming years in school.

Teachers are very satisfied with these observations.

Teachers have got more ideas about how to work with the pupils.

The pupils raise their results in the national tests this year.

The results of the pupils texts get much better.

Working like this helps, especially the pupils that find school hard and difficult, but it's good for all pupils.)

Sharing a similar view, organization F supposed that WPs had strong influence to students' performance. As a result, teachers had to change from traditional teaching way to more open way but they were ready to for the change.

(Organization F: These problems with causal factors over which we do have some control, and which have a very significant impact on learning outcomes for our students.

So teachers will have to change the way they work, from transmission model to a more open and collaborative model.

The collaborative model, where perhaps 100 students are working with in a much more open, deprivatised and confusing environment with maybe 4 teachers.

This involves deep pedagogical change.)

Negative

Most organizations in LED project agreed that WP had negative impact to their organizations. In organization B, the first WP disturbed some teachers and students' well-being. Consequently, students left the region and the organization. Hence, it took time for the staff to discover the WP.

(Organization B: We have few pupils and teachers who has problems with health.

Some pupils have already moved to an other school.

That takes a lot of energy from all of us.

It disturbs our normal working all the time.)

The Government supported the organization by providing another building. This means that organization B had to merge with another school, which leads to another WP that troubled all the staff. Teachers were anxious and exhausted because they found it difficult to interact with members of the other school.

(Organization B: People are worried about many things and we can see that in everyday life here in the school.

Members of the schools do not have the same common spirit than before and teachers are more nervous and tired.)

In addition, staff of organization C felt unpleasant with their WP. Teachers felt that their target could not reach because they ran out of time. They assumed that the school's vision would not be achieved because WP had strong negative effect to the working environment.

(Organization C: Feeling that there is no time, the limitations to fulfill the need.

After this we understood that this is our wicked problems and solving it, even partially would have an impact on what we do and the quality of it.)

In organization D, teachers had to combine the organization's program and the curriculum of Ministry of Education. As a result, the school endured hardship when these two programs were different from each other.

(Organization D: It has always been a challenge to integrate both approaches in the classroom and our teaching practices have somewhat suffered in the past years.)

In organization F, members spent a lot of time to deal with WPs which weakened student's growth. However, they did not find the expected solution while as a lot of students moved to another school.

(Organization F: We have to spend significant amounts of time and energy solving problems

These problems which would destabilise the learning environment

High level of student transience)

In the next part, the theme: diversity from subthemes is discussed.

Diversity of WPs

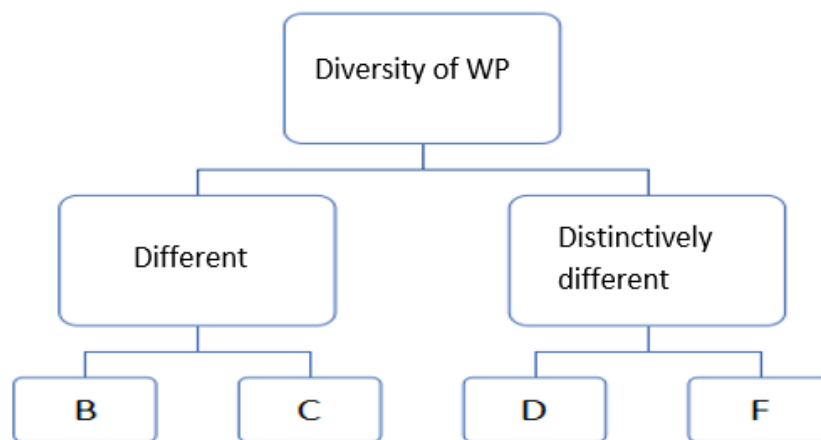


FIGURE 6: Diversity of WPs

Figure 6 represents the diversity of WPs. The two main themes of different and distinctively different were extracted from LED data. The theme different represents the variety in the school; and the theme distinctively different shows the difference among educational contexts.

Different

When integrating to another schools, teachers of organization B experienced various feeling. Hence, teachers temporarily did not share the same mission at that time.

(Organization B: We don't have the same common spirit than before.)

Considering that hurry was a WP to most staff, the organization tried to identify the cause of this WP. They noticed that all members had the same workload everyday. The main cause was the way they took advantage of time was different. More importantly, some staff did not want to tackle the WP because they supposed that this WP was unable to deal with.

(Organization C: Everyone has an equal amount of time in their use everyday, but the amount of intellect varies.

We did not handle different periods during the day in a similar way.

Some of the staff were still wondering this is too big to be solved.)

Distinctively different

In organization B, WPs were caused by program conflict between the school and Ministry of Education. The organization could not design the teaching practice alone but had to harmonize them with the program provided by the Ministry. At the same time, teachers were divergent in doing things.

(Organization D: It has always been a challenge to integrate both approaches in the classroom.

(to improve) being congruent when evaluating)

Organization F was in the same situation when all the educational organizations in region were involved to their WP. The students' results of the school were measured not only within the organization but also among educational organizations. Furthermore, parents were included to the WP because they wanted to find the best schools for their children. If the school performance were not good, it was sure that they wanted to move their children to better schools.

(Organization F: Our achievement results in Mathematics and Literacy are reported to the Ministry and on-line each year, which makes it possible for parents to compare school performance in a very crude way.

This has led to a very high degree of competition between schools.)

7 DISCUSSION

7.1 A Summary of the Results

In this part, I am going to show the connections between WPs found in the LED organizations and WPs identified in the literature review section. In order to do this, I am first discussing the interconnection of WPs in literature review; then mentioning the interrelations between WPs in organizations and WPs in literature review. To be noticed easily, WPs from data are in *italic* while WPs from literature review are **bold**. The two research questions are treated separately.

The First Question: What Kinds of WPs Are Educational Organizations of Today Facing?

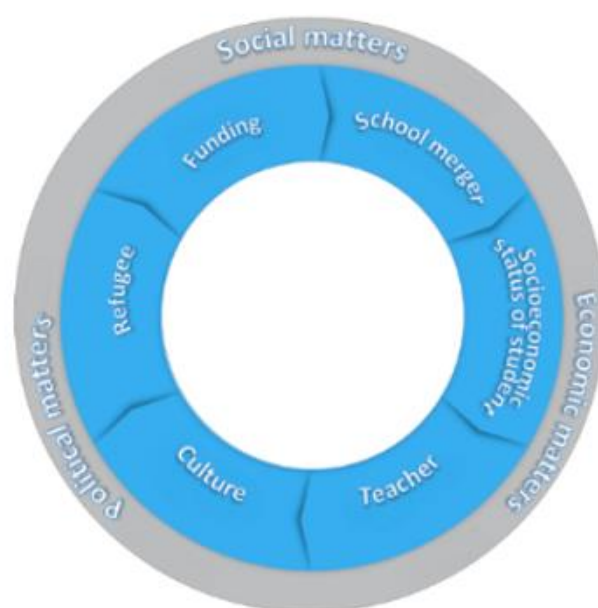


FIGURE 7: WPs from Literature Review

Figure 7 is modified from Figure 1. In Literature Review, there are six WPs: socioeconomic status of students; teacher related issues (teaching quality and teacher workload); culture (multicultural education and subculture); refugees; funding; and school merger. These challenging problems are shaped by the interplay among political, social, and economic matters, which form the great contexts of the six challenging problems. More importantly, each of the challenging problem cannot be solved alone because of the interrelation to the others. For example, funding links to all other five challenging problems. If there is funding cuts, there is normally school merger. When different people with various background are in the organization, subculture among diverse group exists. Teachers and students are those who suffer the funding cuts. Teachers work longer hours and they do not have enough time to care for teaching quality. Besides, students of low socioeconomic status cannot afford school when their parents have to pay more tuition fee. Furthermore, school cannot support refugees. As a result, the gap between high and low socioeconomic status is bigger, which leads to impossibility of multicultural education.

Each challenging problem above is a WP. Importantly, each cannot be solved alone at the same time. WPs vary all the time and they leads to other WPs and are integrated with other WPs, which creates the complexity of the challenges.

When there is an effort to deal with one problem, a lot of stakeholders of different matters (social, economic, and political matters) should be involved. However, when there is more people with different background and understanding join, the diversity of WP arise.

Organization A



FIGURE 8: WP in Organization A

In organization A, WP is *genred-based instruction*. The organization's performance is quite good. However, they want to raise it higher. That is why organization focuses on *genred-based instruction* as a method to achieve better learning outcome. They even want to make *genred-based instruction* natural to teaching. This issue is affected by social matters; to be specific, school want to lift itself to greater position in comparison with other organizations in the region.

This WP connects with **teaching quality** from literature review. This WP is challenging to change teaching methods that has been with teachers for years. Moreover, it takes more time to make new method the habit.

The interaction among social and educational matters are complex because they belongs to various fields with various stakeholder. At the same time, some other political, and economic matters maybe hidden. They are invisible; however, they exist although the organization. In addition, organization A did not give much description about their WP.

Organization B



FIGURE 9: WPs in Organization B

Figure 9 represents the five WPs in organization B: purity of the air, school merger, worried teachers, new curriculum, and new environment.

The first WP in organization B is *the purity of the air*. There is something wrong with the air, which affects all other issues: teaching (teachers' turnover and burnout), learning (students' health and outcome), leadership, all relations in and out of the school. Thanks to the support of the authority, the organization *moves to a new building*, which is the second WP. Organization B is going to *merge with an upper secondary school* (third WP). As a result, *teacher felt worried and exhausted because new colleagues cannot help*. Besides, the next WP is *the challenge of the new syllabus*.

These WPs relates to **school merger** that leads to **subculture** in literature review. It takes time for various people to work in an organization and create organizational culture. First, they understand organizational culture through their subculture; the culture that they are familiar with before merging. Maybe members are willing to help but they do not know what should be supported if they cannot communicate well with others.

Finally, *the challenge of the new syllabus* relates to **teaching quality** in literature review. Teachers are always first initiators at the organization in order to lead students

through change. When there is education reform, teachers are confused with what should be done. This also links to students' outcome.

Purity of the air and *negative emotion of teachers in change* are not mentioned in literature review.

However, purity of the air, teachers' emotion, new colleagues are social matters. Besides, getting the new school and new syllabus belongs to political matter. Merging links to economic matters. Meantime, the complexity of WPs in school B arises from the interplay among political, social, and economic matters. That is the main cause of WP.

Organization C



FIGURE 10: WP in Organization C

Figure 10 gives information about the WP in organization C: hurry, which is a social matter. All staff experience that they lack of time to fulfill their work. This WP is caused by **teacher's workload**. Seriously, WP affects teaching quality, too. When teachers are in a hurry to do their tasks, they cannot concentrate on teaching any more. If they somehow finish their job, they do not put much effort on teaching because they are busy with many stuff.

This WP belongs to social matters. When there is high demand that teachers should complete their work with less time, teachers have to work harder. However, when they work harder, the teaching quality is lower.

The staff did not clarify their WP with more information. However, it is clearly seen that the interaction between social and educational matters makes the complexity of WP in organization C because they cannot solve each matter alone.

Organization D

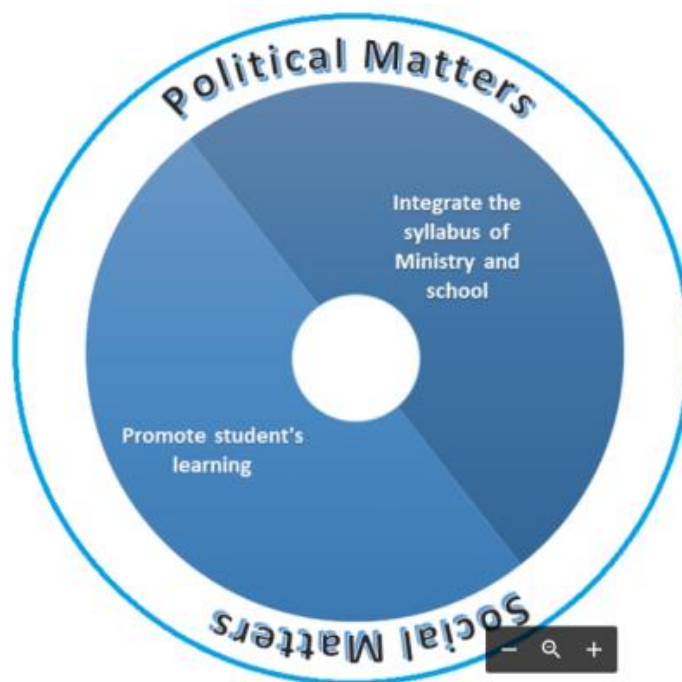


FIGURE 11: WPs in Organization D

Figure 11 represents the two WPs: intergrating the syllabus of Ministry and the organization, and promoting students' learning in organization D. The WP: *how to integrate the syllabus of Ministry of Education and teaching practice from International Baccalaureate; and the school becomes a clearer choice in community* connects to **teaching quality** issue in literature review. To be competitive in the region, the organization needs to improve quality of teaching and *promote engagement of learners in their learning*. This means that the organization tries to develop two important factors at the same time. Without other factor, one factor is not sufficient.

Student's learning outcome is one WP found in organization D. However, the literature review for this WP is missing.

First, the syllabus of Ministry considered as the direction for general syllabus is political matter. Second, turning the organization to a better choice for parents and students connects to social matter. These two matters affect the academic growth of organization D. This makes WPs more wicked because organization D has to deal with a lot of matter in order to find solution for their WPs.

Organization E



FIGURE 12: WPs in Organization E

Figure 12 describes three WPs: school merger, unified working community, and common schedule in organization E. When the decision of *school merger* is made, two primary schools and two kindergartens are combined. This relates to **school merger, funding, and subculture** issues in literature review. Normally, school merger happens when the Government decreases funding. School merger is somehow considered as a solution to funding cuts; however, it results to another WP: **subculture**. As usual, different organizations have various organizational culture. When they are forced to integrate, it took times to *create a unified whole working community; finding a common schedule for*

development and cooperation; and staff discussion on practical issues and plan for future events for all organization members.

School merger also places in political matter. **Funding** connects to economic matter while **subculture** is a social matter. Each WP is tough to deal with in organization E. It is even harder to solve these WP because they reshape with time: funding, school merger, then subculture.

Organization F



FIGURE 13: WPs in Organization F

Figure 13 shows the three WPs: *behaviour, pastoral and other issues arising from poverty and violence in the community; limited ability of parents to support and sustain learning; high level of students transience; phenomenon white flight*, that belongs to social and economic matters. These WPs link to **socioeconomic status of students** in literature review. Normally, students with low socioeconomic status are raised in the poor region when parents find it hard to afford their children to go to school. As a result, the percentage of students' burnout is high because they move to different regions most of the time with their families. Meanwhile, when there are newcomers, there are some

disturbing problems for current people living there. When white people are not happy with their living environment, they move to other areas.

In addition, these WPs impacts **teaching** issue treated in literature review. When students keep moving, teachers cannot concentrate on teaching. It takes time to be familiar with new students before designing suitable syllabus for them. However, when teachers get to know some more about their students; students leave the schools because they cannot afford tuition fee. This results to another WPs: *poor quality of teachers, poor teacher performance, ongoing teacher turnover or burnout*. To be specific, the number of teachers' reduction and leave is constant.

Furthermore, *poor quality learning environment* relates to **funding** issues, mentioned in literature review. The organization is in a poor area so that learning exists with lack of school facilities, and qualified teachers. Luckily, the Government decided to offer organization F a new building. However, this is a route to another WP which is *pedagogical change*, which links to **teaching** issue again. When the organization design changed, there is a demand of maybe 4 teachers and 100 students in comparison with 1 teacher and a group of students. It takes time for teachers to direct students in new classroom. At the same time, teachers learn the way to work with other teachers in the same classroom. This is tough and time-consuming.

The economic, political, social matters shape the complexity of WPs in organization F. When internal WPs keep affecting school performance, external WPs keep disordering the organization. The organization cannot solve these problems alone. However, the WPs are more complex when there are more stakeholders who are responsible for different field involved.

The Second Question: How Complexity and Diversity Manifest in Today's Educational Organizations?

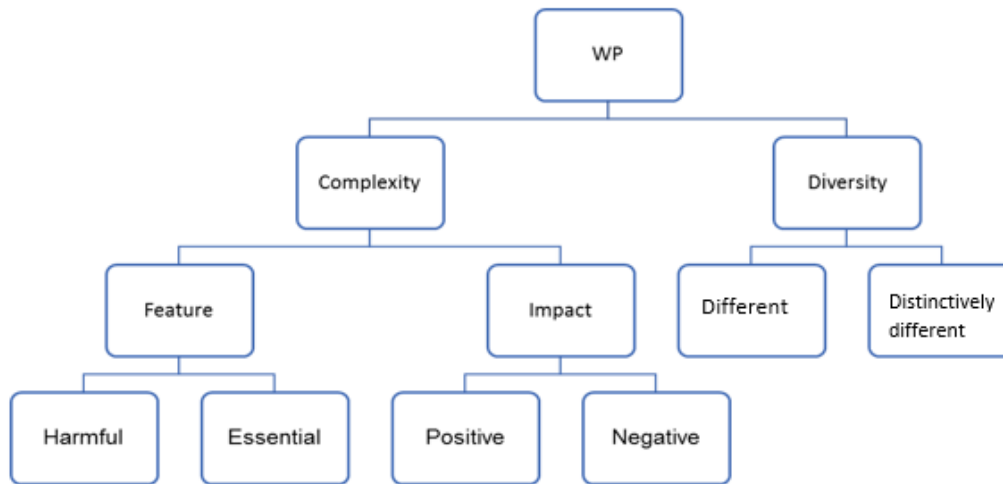


FIGURE 14: The Complexity and Diversity of WPs in Educational Context

Figure 14 represents *complexity* and *diversity* of WPs found in LED data. In the theme of *complexity*, two smaller themes as *feature* and *impact* are identified.

The theme *harmful* (organization C and F) expresses the idea that WP needs to be solved because it is damaging schools' outcome. In some schools, staff supposed that WPs are *essential* (organization C and F) because leaving WPs out is helpful for organization's growth.

The theme *impact* discusses the effect of WPs to organization. Some organization believed that the influence of WPs is *positive* (organization A and F) because it offered people an opportunity to cooperate with others in order to tackle WPs. In contrast, WPs have *negative* (organization B, C, D, E, F) effect to organization because it discourages teaching and learning environment.

In the theme *diversity*, two themes: *different* and *distinctively different* are noticed. The first theme *different* expresses the difference among internal relationship within school. Meanwhile, the theme *distinctively different* talks about the variety among schools in bigger context.

Complexity of WPs

Most organizations (B, C, D, E, F) declare that WPs are harmful and has negative impact to their organization. The finding perfectly match with complexity of WPs in literature review.

First of all, **when there is an effort to deal with the WP, it will be reshaped.** For example, the authority decides that organization B should move to another building when there are some problems caused by *unclean air*. This is a nice solution to support school. However, it also results in another WP: school is merged with others in the same building and there exist subculture.

Second, **the response to WP is unable to test immediately.** In organization F, the staff want to make a deep *pedagogical change*. Traditionally, one teacher is responsible for a group of students. In contrast, 4 teachers are in charge of nearly 100 students in the new school. It takes time to check whether the change is effective.

Third, **WP cannot be solve alone but with other interrelated WPs.** In organization C, the WP, named *sense of hurry* belongs to teacher' s workload, which affects teaching quality. If teachers need to fulfill their work, they have to deal with the school stuff quickly. However, they cannot focus on teaching quality.

Fourth, **WP which is the fragmentation force and pulls people apart.** In organization B, teachers are worried about when they are combined with an upper secondary school. In addition, they are anxious because new colleagues might not be able to help them. This happens because of *subcultures*. Although being in the same organization within the same building, teachers feel that they are away from the others because each school has its own organizational culture. When being forced to merge, they are unfamiliar with unknown things. As a result, the teachers of organization B as well as teachers of the upper secondary find that culture of the other group as strange.

Fifth, **solution to WP is impossible if WP relates to social and cultural matter.** Seriously, there is an interplay among social, political, and economic matters that create a WP. The organization is in a poor area, which makes learning environment inadequate for

students. This is an economic matter. The authority supplied a new building to solve this problem. This is a political matter. Then the teachers should improve teaching methods to be compatible with the new design of organization building. This is a social matter. These matters interact and make the complexity of WP in organization F.

Organization F is the most interesting organization in the study. On the one hand, organization F finds WPs damaging to organization's performance and had bad influence to all people; as stated about the complexity of WP in literature review. On the other hand, WPs in organization F are essential and affect positively to the organization.

Similarly, organization C also finds that WP are both harmful and essential for the organization. This is the first explore because the point that WP is essential is not stated in the literature review. Besides, teachers of organization A and F are very busy. When there comes WP; the staff had a chance to sit and work on how to deal with WPs. Therefore, the staff suppose that WPs offer them the opportunity to exchange ideas. This is the second explore of this thesis.

Diversity of WPs

The diversity of WP evolves when there are more people engaging in the organization with different background and understanding about WP.

It is clearly shown that WPs in organization B and C are diverse as WPs in organization D and F are super-diverse.

In organization B and C, WPs happen within the organization. *Teachers are tired; new syllabus comes; new colleagues are unfriendly; sense of hurry*; all this happens within the organization and relates to the teachers and teaching issues although they may be linked to social, political, or economic matters. It means that the number of people involved are only in the organizations.

In organization D and F, WPs are not only internal but also external. In organization D, there is the demand of integrating the Ministry's syllabus to school practice. In

organization F, the performance is officially shown online and reported to Ministry. As a result, there are more people engaging to the WP: parents, schools in the region, Ministry. That is why WP in these organizations are distinctively different.

7.2 Generalizability and Limitations

Because of distinctive characteristics of qualitative research, this piece of research cannot be generalized to all other educational contexts in one country and to the five countries involved in the LED project. The problems in organization A, B, C, D, E, F found in the LED data shows the distinguishing feature of WPs to these organization only.

However, the WP that exists in the six organization are real WPs manifesting in a global context: globalization. In addition, WPs may be different in various organization; however, the diversity and complexity of WPs are quite similar in all organization.

There are specific limitations seen in the study. First, the data is not collected by the researcher. As one striking feature of qualitative research, the researcher understands more about the participants' concern (feeling, intonation, mood) when collecting the data. Due to the fact that data are from the LED data (ready-made data), the researcher did not have real contact with the participants of the research. Therefore, the discussion part is completely deductive, taken from the ready-made data. Second, the LED data did not perfectly match the second research questions "how complexity and diversity manifest in today's organization" because the LED data is not collected by any researching tools (questionnaires, interview, survey). Organization F described clearly about their WPs while as other educational organizations: A, B, C, D, E discuss a bit about their WPs, which makes that the data are not rich enough for a deeper analysis. Consequently, the organizations did not show their understanding about WPs in details, or the interconnection among WPs and other problems while rushing to find ways to deal with WPs.

7.3 Recommendation for Educational Organizations

Recommendation for further research is developed based on the limitation of this piece of research. First, the researcher should be the one who collects data in a qualitative research. As a result, the researcher understands more about participants' emotion and expectation which were not shown in the data but supported the research in understanding more their WPs. Next, participants should be directed that understanding WPs clearly before dealing with WPs is significant if there were no research tools. Thus, the data would be somehow more consistent and easier to be identified by certain main themes.

8 CONCLUSION

There are a lot of WPs in today's educational organizations. When educational organization places important position in the development of society within globalization, there are fewer simple problems. Many of the problems that the educational organizations face are WPs that are interconnected with a lot of issues. Therefore, these problems cannot be solved by the educational organization only but with the support of the whole society. Meanwhile, all members of the organization should share same understanding with their WPs. When there are more people collaborating without diversity in background and view, WP are less complex.

The thematic qualitative study shed light on identifying WPs in today's educational organization and understanding about the complexity and diversity of WPs. In addition, this thesis fills in the gap of previous study about WPs. First, WPs do exists in educational organization such as in business organizations. Here, the recent WPs in today's educational organization are identified by analyzing data from a single LED project. Finally, new understanding about the complexity and diversity of WPs contributes to the knowledge of WP in previous research: First, WPs are not always harmful but essential to the development of the organization. Second, WPs do not always have negative impact to organization but positive one. This also supports administrators, staff, parents, stakeholders, students in recognizing that they are important factors in order to tackle WPs. If they collaborate together, WPs are no longer wicked.

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