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**SOCIAL ENVIRONMENTAL SUPPORT AND
TEACHERS' IMPLEMENTATION OF
NUTRITIONAL IMPROVEMENT
PROGRAM TOWARDS STUDENTS'
PHYSICAL HEALTH AND
WELLNESS IN CHINA**



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JIA XIN

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OF NUTRITIONAL IMPROVEMENT PROGRAM TOWARDS STUDENTS'
PHYSICALHEALTH AND WELLNESS IN CHINA

JIA XIN

THESIS SUBMITTED IN FULFILMENT FOR THE DEGREE OF DOCTOR OF
PHILOSOPHY

FACULTY OF HUMAN DEVELOPMENT
SULTAN IDRIS EDUCATION UNIVERSITY

2024



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ABSTRACT

This study aims to determine the perspectives of teachers and students towards the Nutrition Improvement Program (NIP) implemented in primary schools in China. The teacher's perspective focus on support of the social environment and the implementation of the NIP while the student's perspective focuses on the acceptance of the implementation of NIP and Students' Health and Wellness. The sample was selected by using stratified random involved 400 teachers and 800 students from 20 primary schools in five provinces in China. The reliability index of the questionnaire based on Cronbach's Alpha analysis ranged from 0.798 to 0.897. Data were analyzed using SPSS Windows version 23 and the statistics use descriptive and inferential. The findings of the study show that the overall level of social environment support is only at a moderate level. The teachers' implementation of the overall NIP program is also at a moderate level except for the NIP Implementation Technique aspect which is at a high level. Findings also show that there are some differences in the support of the social environment and the implementation of NIP by teachers based on gender and province. Multiple regression analysis shows that environmental support contributes to 30 percent of teachers' NIP implementation. While the students' acceptance of the implementation of the teacher's NIP is mostly at a moderate level except for the physical, emotional and intellectual aspects are at a high level and the spiritual aspect is moderately low. The analysis also shows that there are significant differences in terms of the health and wellness of students based on gender and province. Next, regression analysis shows that the implementation of NIP contributes as much as 43 percent to the construct of student health and wellness. Thus, the results of this study can be used as guidelines and input in strengthening the NIP program in China.





SOKONGAN PERSEKITARAN SOSIAL DAN PELAKSANAAN PROGRAM PENINGKATAN NUTRISI GURU TERHADAP KESIHATAN FIZIKAL DAN KESEJAHTERAAN PELAJAR DI CHINA

ABSTRAK

Kajian ini bertujuan untuk mengenal pasti perspektif guru dan pelajar terhadap Program Nutrisi Makanan yang dilaksanakan di sekolah rendah di China. Perspektif guru dilihat dari segi sokongan persekitaran sosial dan pelaksanaan NIP (Nutrition Implementation Program) manakala perspektif pelajar pula memfokuskan kepada penerimaan pelaksanaan NIP guru dan Kesihatan dan Kesejahteraan pelajar. Kajian ini juga bertujuan untuk mengenal pasti perbezaan pembolehubah sokongan persekitaran sosial, tahap pelaksanaan NIP dan tahap penerimaan dalam program NIP untuk kesihatan dan kesejahteraan berdasarkan jantina dan wilayah sekolah. Sampel kajian ialah 400 guru sekolah rendah dan 800 pelajar Darjah 5 dari 20 sekolah rendah di lima wilayah di China. Sampel dipilih menggunakan persampelan rawak berstrata berdasarkan wilayah dan jantina. Indeks kebolehpercayaan soal selidik berdasarkan Alpha Cronbach berada antara 0.798 hingga 0.897. Data dianalisis menggunakan SPSS Windows versi 23. Statistik menggunakan deskriptif dan inferensi. Dapatan kajian menunjukkan tahap keseluruhan sokongan persekitaran sosial adalah berada di tahap sederhana sahaja. Pelaksanaan guru terhadap program NIP keseluruhannya juga berada di tahap yang sederhana kecuali dari aspek NIP Implementation Technique yang berada di tahap yang tinggi. Dapatan juga menunjukkan sebahagiannya terdapat perbezaan sokongan persekitaran sosial dan pelaksanaan NIP oleh guru berdasarkan jantina dan provinsi. Analisis regresi berganda menunjukkan sokongan persekitaran menyumbang kepada 30 peratus terhadap pelaksanaan NIP guru. Manakala penerimaan pelajar terhadap pelaksanaan NIP guru sebahagian besarnya berada di tahap sederhana kecuali aspek jasmani, emosi dan intelek adalah pada tahap yang tinggi dan aspek rohani adalah sederhana rendah. Analisis juga menunjukkan sebahagiannya terdapat perbezaan yang signifikan dari aspek kesihatan dan kesejahteraan pelajar berdasarkan jantina dan lokasi. Seterusnya analisis regresi menunjukkan pelaksanaan NIP menyumbang sebanyak 43 peratus kepada konstruk kesihatan dan kesejahteraan pelajar. Justeru, hasil kajian ini dapat dijadikan garis panduan dan input dalam memantapkan program NIP di China.



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LIST OF ABBREVIATIONS

ASNE	After School Nutrition Education Program
BMI	Body Mass Index
CNSSCH	Chinese National Survey (Cross-Sectional) on Student Constitution and Health
DDS	Diet Diversity Score
FVS	Food Variety Score
HiAP	Health in All Policies
IHSI	Innovative Health System Initiative
MAR	Mean Adequacy Ratio
MDD	Minimum Diet Diversity
MML	Minimum Meal Frequency
NGO	Non-Government Organization
NIP	Nutrition Improvement Program
RLA	Rural Livelihood Approach
WHO	World Health Organization



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CHAPTER 1

INTRODUCTION

1.1 Introduction

Human capital investment in terms of education and economy is the key of a country's progress (Liu & Zhang, 2020). In Education, all countries in the world have undergone several changes in the past to ensure that their education system is in line with the needs of society and in line with the current era of digital globalization. Therefore, most countries have already introduced compulsory education systems in order to ensure education is fair for all. For China, where education starts from the early of civilization in the world, it has a unique history including the development of the education system. China population of China which has the largest population in the world which currently reaching 1.3 billion and has 22 provinces. Economically, China is a big power and becomes the world's second largest economy nominally (or



the world's largest according to purchasing power parity) and a permanent member of the United Nations Security Council. (Peter, 2020).

Now, China has created various new technology innovations in various fields as such the field of aerospace, communication, agriculture and robotics and various inventions that have been produced and been used by people all over the world. While in the education system, China has now implemented various innovations and new technologies in the curriculum and teaching at the school and at higher education levels. The development has caused China considered as potentially the biggest power by some academicians. Jinrui, (2023) The Chinese Government has put education as a strategic priority and proposed the strategic decision to "develop the country through science and education", continuously deepened education system reformation, and had also implemented nine-year compulsory education. Governments at all levels continue to increase investment in education and encourage multiple channels and forms of schooling. "Facing modernization, facing the world and facing the future" is the direction of China's education development and the guide for education reform and construction. However, because of the population is too large and the land area is too wide, there is still a gap in education system in China, especially among under privilege students in rural areas who are still experience constraints and problems in education especially at the primary school level.

China declared the Compulsory Education Law of the People's Republic of China in 1986 and has provided free compulsory education for its citizens since 2006. The school system in China is divided into three main levels and each student must pass an examination at each level to qualify themselves to enter higher level. Children



in China will start their education as early as the age of 4 at the Pre-School level for three years, then follow the primary school level for five years and the secondary school level for six years. After that the students are free to choose higher education in various fields. This implemented policy has achieved significant educational returns and economic results since its implementation and has been a major factor in China's significant increase in labor productivity and rapid economic growth since its reform and opening up (Xuan et.al, 2019).

However, there are some challenges and weaknesses in the education system in China. Xing Gaou (2022) found that there is still a huge difference in educational achievement between urban and rural areas in China. In addition, students' dropout in the academic field also occurs especially among rural students due to the increment in the cost of schooling, improper living conditions, transportation problems and including the lack of food resources. Weichang et.al (2021); Ying Xiu Zhang (2016) and Cao et al. (2020). Currently, the nutritional status of students in China faces challenges. The Chinese National Health and Family Planning Commission in its report pointed out that, a certain percentage of children in China still suffer from malnutrition, and the malnutrition rate of children in poor rural areas has reached 18.4%; and the problem of insufficient intake of children's micro nutrients, such as vitamin A, calcium, and others, still exists (<https://healthnews.com/nutrition/>, May 21,2019).

Plus, children aged between 6 to 17 years are in a critical period of growth and development. In this period, they need to practice balanced diet to develop healthy eating behavior to ensure their physical and intellectual development is taken care of,

and to create a strong core a healthy life. Realizing the importance of nutrition, the Chinese Government has taken various measures to improve student nutrition. For students in rural areas, the Nutrition Improvement Program (NIP) for Rural Compulsory Education Students was launched in 2011.

Recently, the Ministry of Education with the full support of the government has introduced the Nutritional Improvement Program (NIP) to help rural area students, including primary school students, to get healthy and nutritious meals provided by the school and to assure the students to be healthy physically health and mentally, intellectually, emotionally and social well-being which can further improve their excellence in education and compete with other students.

1.2 Background Of Nutrition Improvement Program

The Nutrition Improvement Program for Compulsory Rural Students, also known as the Nutrition Improvement Program, was officially launched on 26 October 2011 by Prime Minister, Wen Jiabao with the aim of effectively improving the nutritional status of rural students and improving their health. The Nutrition Improvement Program (NIP) is implemented for the students at the compulsory education level (involving children between the ages of 6-14). Only primary and secondary students are involved, as the Nutrition Improvement Program is a special program for rural students.



This Nutrition Improvement Program (NIP) has been carried out since 2011 until now and based on the plan drafted by the Chinese Ministry of Education will continue up until 2030. NIP aims to create a healthier, educated, and equitable society, recognizing the fundamental role of nutrition in the physical, cognitive and social development of its youth in China. The focus of this program is to help poor students from rural area schools to get additional food assistance provided at the school. In addition, subsidies are also given to students to get extra meals not only during school period but outside of school hours too. This NIP program also provides schedules and activities as well as long-term healthy food intake (nutrition) structure for the students who involved in this NIP. This is to ensure that they can take care of their health by eating a balanced diet. Apart from that, the Nutrition Improvement Program (NIP) is also to improve the physical, emotional, spiritual, intellectual and social aspects. These aspects can be achieved through the NIP program introduced at the school level. This program will be beneficial in increasing the potential and excellence in education and can be a platform for students to compete with other capable students especially in big cities in China.

The Nutrition Improvement Program initially focused on the students in poverty-stricken areas and underprivileged families, and as of December 2018, a total of 1,642 districts nationwide have implemented the Nutrition Improvement Program. Data from the Ministry of Education shows that by the end of 2021, the national and local level Nutrition Improvement Program pilot projects have covered a total of 123,800 rural compulsory education schools across the country, benefiting 350 million students.



The implementation of the Nutrition Improvement Program (NIP) entails significant financial investment. Initially, the central government allocated 16 billion yuan annually in special funds to kick start a nationwide pilot program across 680 districts. This initiative aimed to provide nutritious food for rural compulsory education students in pilot areas, with each student receiving a subsidy of 3 yuan per day. According to data from the Ministry of Finance, by the end of 2013, the central financial administration had disbursed a total of 30.03 billion yuan in food subsidies for the NIP, alongside an additional 30 billion yuan allocated for the construction of cafeterias and related facilities. These efforts directly benefited 32 million students at the rural compulsory education level. Subsequently, starting from November 2014, the Ministry of Finance and the Ministry of Education increased the food subsidy standard for improving student nutrition from 3 yuan to 4 yuan per person per day, amounting to 800 yuan per student annually.

To run the Nutrition Improvement Program (NIP) at the school level, teachers need to play a role so that the implementation of the program can be carried out effectively. The teachers involved in this program will explain about healthy meals and will use various materials to explain to the students about the importance of the NIP program in the personal development of individuals or students, especially at the primary school level. Apart from that, teachers need to monitor and evaluate the students who are involved in this program. The role of the teacher is important to make sure that the implementation of the NIP achieves the goals that have been set up to help improve the physical, emotional, and intellectual health of the students. Details about NIP in terms of implementation, objectives and goals, the role of teachers and related aspects can be seen in the literature section in Chapter 2.

1.3 Problem Statement

According to the Chinese Ministry of Education Hong Liu et.al (2012) many students in rural areas still require assistance from the NIP program. This is primarily due to the financial constraints faced by their parents, which not only affect their ability to provide food but also hinder their capacity to send their children to school. Field research has revealed that the inability to benefit from the NIP program places a significant burden on parents, making it difficult for them to afford sending their children to school. Consequently, this predicament contributes to a higher dropout rate among students in rural areas.

Furthermore, as noted by Xiao Jin et.al (2021), there are implementation challenges of the NIP program at the school level, particularly in rural areas. A study conducted in 2015 highlighted that nearly half of the schools participating in the NIP program failed to meet the standards for providing nutritious food. Additionally, Ren Chunrong (2020) identified that the inadequacy of facilities provided by schools further hampers the effective implementation of the NIP program in rural China.

A survey conducted by Daniel et.al (2021) revealed that many rural children, especially at the primary school level, suffer from illnesses, food shortages, and receive minimal nutritional support, such as only one egg per day. Consequently, they exhibit disinterest, lack of focus, and poor academic performance during school sessions. The implementation of the NIP program has significantly improved the physical, mental, and emotional well-being of these children while attending school. However, challenges persist, particularly with the food delivery system, which

frequently experiences delays, leading to food arriving past the scheduled time. Moreover, the lack of adequate supervision and evaluation of the NIP program within schools hinders its effective implementation.

A study conducted by Jianjun et.al (2022) revealed a significant disparity in family income between rural and urban environments, with the rural population experiencing lower average incomes. Consequently, individuals in rural areas not only encounter economic and educational challenges but also struggle to access healthy food, crucial for the physical, emotional, and intellectual development of students, particularly in primary school. This finding is corroborated by Haibin and Wei Jun (2016) and Bingtao et al. (2017), who emphasized the influence of geographical factors on limiting rural students' access to various facilities, resulting in educational and nutritional disparities compared to their urban counterparts. Addressing this issue necessitates a comprehensive review of the Nutrition Improvement Program (NIP) for rural students to ensure its effectiveness in enhancing students' nutritional well-being and academic performance.

The issue of healthy eating and balanced nutrition among students in rural areas of China has garnered special attention from the government, particularly through the Ministry of Education and various other agencies, aimed at enhancing student well-being through the Nutrition Improvement Program (NIP). This concern is exacerbated by China's status as the world's most populous country, coupled with a significant poverty gap, particularly prevalent in rural regions. Studies conducted by Bocheng Zhang (2020), have highlighted that many students and communities in rural areas continue to grapple with challenges such as economic constraints, obesity, and



inadequate access to balanced meals in their daily diets. These challenges stem from limited economic resources and income among rural residents, with some communities still entrenched in extreme poverty, exacerbated by remote locations with transportation constraints hindering access to food aid and educational resources.

Jingxi et.al (2019) also asserted that, this healthy and balanced nutrition program implemented in China does not only help the physical development, but also have an impact on emotional balance and intellectual intelligence in education, especially for children at the early age stages, and at the primary school level. Peterr et.al (2022) also stated that early childhood nutrition programs for poor students, especially in rural areas, need to be done continuously because they have a long-term impact both physically and socially among the students until they reach adult-age.

According to Hellas and Philip (2020), a healthy and balanced diet can guarantee an individual or student physical and intellectual development and positive behavior in a good school environmental, peers, and family. In the context of the Nutrition Improvement Program in China, it has been done since 2011 which uses various implementation approaches mainly involving several levels from children aged 3 to 14 years. Most of this program is done at the school level. This is aimed at helping the development of children and students' health towards educational excellence. (Deborah et. al, 2018).

Studies on NIP have also been carried out in China, including Jihong Zhan et.al (2019) who conducted a study on students from rural area schools and found that the NIP program greatly improved their physical health. While Yefu-Zhang et.al (2018) who had conducted a study in the Henan Province on children at the primary



school level had found that there are several weaknesses in the implementation of the program especially from the aspect of infrastructure facilities, transportation, parental support which causes many of the students were unable to follow the program systematically in a long term. While a study by Ying Xu (2022) who studied the involvement of teachers in food nutrition programs carried out in China found out that the role of teachers is important in helping to improve students' understanding of eating healthy through the NIP nutrition program at the school level. Apart from that, this study suggests that studies related to the implementation aspects of teachers related to monitoring and evaluation aspects need to be done periodically and continuously because to ensure that the NIP program implemented in rural areas, especially in China, can be implemented effectively.

Apart from that, a study by Liu et al. (2018), found that the average area involved in this NIP is in rural areas. In connection with that, his research also suggested that a variety of approaches should be implemented to ensure the effectiveness of this NIP program. Among the suggestions given is the need to review the diversity of school support for the teachers involved in this program who need to be given training and also a variety of creative and innovative performance approaches to ensure that this NIP program not only increases awareness but can achieve the set goals of the NIP program.

Lina Huang (2021) emphasized the prevalent issue of inadequate nutrition among students, particularly those residing in rural areas of China, where access to nutritious foods such as grains and vegetables remains limited. This observation aligns with findings from the China National Nutrition Survey (CNS) conducted in



1982, 1992, 2002, and 2010-2012, as well as the China Health and Nutrition Survey (CHNS) spanning from 1989 to 2015. These reports consistently highlight the persistent lack of adequate nutrition, particularly in terms of vegetable consumption and animal protein sources, among rural communities since childhood. Addressing this nutritional deficiency requires sustained efforts involving various stakeholders at the primary school level in rural regions.

Furthermore, the study by Renfu Luo (2009) underscored the detrimental impact of malnutrition on students in rural areas, leading not only to stunted growth but also rendering them vulnerable to infections due to weakened immune systems resulting from inadequate physical activity. Therefore, conducting comprehensive studies related to the Nutrition Improvement Program (NIP) becomes imperative as it can significantly contribute to the effective implementation of nutrition intervention strategies in China's rural areas.

A study by Liu, Y., and Wang, J. (2018) found that teachers involved in nutrition programs in China need to increase their various knowledge and understanding in the program through various current sources and materials, especially sources from social media to make it easier for teachers to plan in the implementation of programs in NIP. It can also attract the interest of students to follow this NIP program with a deeper understanding and if this is practiced, it is certain that the students are confident that NIP program can help them in their physical and educational development as well as increase their understanding and can attract students' interest.



The advancement of education holds paramount importance as it delineates the trajectory of a nation's future progress and well-being. Education development must be comprehensively addressed across various dimensions, extending beyond mere curriculum and pedagogy to encompass infrastructural facilities. It necessitates a holistic approach to education that is obligatory for all strata of society. To ensure universal access to education, governmental initiatives must extend special consideration to the underprivileged, providing assistance not only in material support but also in terms of food and health provisions to safeguard the holistic well-being of impoverished students. This approach ensures equitable opportunities, enabling them to compete on equal footing with peers who benefit from more favorable environments. (Jiang, Q., et al 2021; Fu, Q., et al 2010).

Studies related to the Nutrition Improvement Program (NIP) have also been conducted abroad, including in Kenya by Kilemi (2005) who found that food shortages among children are quite significant, causing the attendance rate of children to school to be at a worrying level. Therefore, the Government has taken an intervention step by giving free meals at school which in the end not only succeeded in providing knowledge about eating a balanced meal but also reduced the rate of truancy among school pupils.

A study in the Philippines by Magbuhat et.al (2011) found that the Ministry of Education of the Philippines also held a program for the underprivileged students to provide and encourage students to eat healthy food, especially vegetables, which can increase the growth and intelligence of students, involving teachers, mothers and fathers. and students himself by running the "my vegetables" campaign to cultivate



eating vegetables among students.

The NIP program was also carried out in Iran Behzad (2018) where this program was implemented by the Ministry of Education through a nutrition assistance program for underprivileged students at the school level. This program is implemented at the school level and is also sponsored by the Ministry of Health to ensure that all food supplied to students meets healthy eating standards. This is in line with the Global Action Plan of the World Health Organization (WHO) which states that various sectors need to carry out a series of interventions at various levels to help provide healthy food to communities in need.

Whereas in other developed countries, NIP programs are also implemented for the students in the United States. Karen et.al (2008) found that there are still many disadvantaged or poor students who are still unable to eat a balanced diet in their daily lives and the factors this also causes them to experience less healthy self-growth, and some also remain in education due to the constraints of their lives.

Study done by Dollahite (2014) found that the food nutrition program has a lot of impacts on students - rural students or even low-income students and helps them to get healthy food and can improve physical and intellectual health as well as improve student performance in education. A study by Fernández-Alvira et.al (2013) who conducted a study among poor and marginalized children implemented by the Government and Non-Government Organization (NGO) found that parental support is important in implementing this program because at this stage children are greatly influenced by their families and parents to ensure that the NIP runs smoothly. This



study also suggests that parents also need to be given knowledge and information about nutrition programs. This is to ensure that the planned program can meet the set goals.

A study conducted in Australia by Dean A Dudley et.al (2015) also found that the involvement of the teachers in interventions to provide knowledge and understanding to students about the NIP program requires a variety of approaches, techniques and the use of a variety of materials as well as establishing teachers' groups to ensure that the NIP program can be well received by the students where balanced and healthy food are important for physical, emotional and intellectual development. Mastewal Zenebe et.al (2018) stated that healthy and balanced meals among students is the main factor in determining student performance in learning in both curriculum or co-curriculum level. He then further suggested that teachers need to diversify the implementation methods in the delivery of the NIP program that is implemented.

Based on the aforementioned study and discussion, research on nutrition has been conducted both internationally, including in countries such as Australia and America, and domestically within China itself. These studies predominantly target students across various educational levels, particularly those who face challenges in accessing nutritious food due to socioeconomic constraints. However, within the context of China, the existing research primarily focuses on evaluating nutrition programs implemented at the school level.

Therefore, there is a critical need for more comprehensive research endeavors aimed at assessing the effectiveness of these programs from a broader perspective, particularly considering the role of social support in enhancing teacher engagement and fostering positive physical and behavioral changes among students. Such studies should not only investigate the immediate impacts of these programs on nutritional outcomes but also explore their long-term implications for intellectual and educational advancement among students. By addressing these aspects comprehensively, researchers can provide valuable insights into optimizing nutrition interventions and promoting holistic well-being among students in China's educational landscape.

This study gives a more comprehensive focus to social support from the aspects of school environmental support, teacher's group support, parents, training, and media social support where these aspects have been proven to help improving the implementation by the teachers in carrying out activities in learning. In addition, the role of teachers in implementing the nutrition program also needs to be emphasized in relation to NIP implementation technique, Information transfer of healthy meals, use of various materials, monitoring and evaluation. This study also focuses on the extent to which students' acceptance towards the implementation of NIP by teachers and its impact on students' development which related to health and wellness from the physical, emotional, spiritual, intellectual, and social aspects.

The findings of this study are expected to provide detailed input regarding teacher supports, role of the teachers as well as the student development that can be used to strengthen and complete this program towards helping children excel in academics through healthy eating. Apart from this, it is hoped that this study can help



various parties, especially the Ministry of Education, NGOs and others to form policies, make long-term plans to ensure that this NIP nutrition program can have a great impact on students and the country to achieve the goal in improving outstanding performance of underprivilege students.

1.4 Purpose Of Study

This study aims to determine the perspectives of teachers and students on the Nutrition Improvement Program (NIP) implemented in primary schools. The teachers' perspectives are seen in terms of social environmental support which includes aspects of school environmental support, teachers group support, parents support, training support and social media support. In addition, this perspective also looks at the implementation of Nutrition Improvement Program (NIP) which contains implementation technique, knowledge transfer of healthy meal, usage of diversity sources, monitoring and evaluation. Meanwhile, the students' perspectives are seen in terms of the acceptance of aspects in the NIP implementation construct. Furthermore, this study also looks to the extent of which the NIP program is accepted for students' Physical Health and Wellness which related to physical health, emotional, spiritual, intellectual and social. This study also aims to determine the level of aspects in all constructs and differences based on gender and provinces based on teachers and students perspectives. Besides, this study attempts to identify the extent of the contribution of all aspects variable in the social environment support towards NIP Implementation construct and the contributions of the aspects in the variables of NIP Implementation from students perspective towards students Physical health and wellness construct.



1.5 Research Objectives

There are two main parts of objectives in this study ,

- i) Objectives related to the teacher's perspective and
- ii) Objectives related to the student's perspective.

The details of both objectives are as follow:

Objectives from the teacher's perspective

1. To determine the level of social environment support from the aspect of school environmental support, teachers' group support, parents support, training support, and social media support from the teacher's perspective.
2. To determine the level of implementation of the Nutrition Improvement Program (NIP) from the aspect of implementation techniques, information transfer on healthy meals, use of various materials, monitoring and evaluation from the teacher's perspective.
3. To determine the differences of the social environmental support from the aspects of school environmental support, teacher's group support, parents support, training support and media social support from the teacher's perspective based on province.
4. To determine the differences in implementation of NIP from the aspects of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation from the teacher's perspective based on gender and province.
5. To determine the contribution of the aspects in the construct of the social



environmental support towards the construct of the implementation of NIP

Objectives from the student's perspective

6. To determine the level of implementation of the Nutrition Improvement Program (NIP) from the aspect of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation from the student's perspective.
7. To determine the level of students' health and wellness from the aspect of physical health, emotional, spiritual, intellectual and social from the student's perspective.
8. To determine the difference in implementation of Nutrition Improvement Program (NIP) from the aspects of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation from the student's perspective based on province.
9. To determine differences in students' health and wellness from the aspect of physical health, emotional, spiritual, intellectual and social aspects from the student's perspective based on gender and province.
10. To determine the contribution of the implementation of NIP which are program implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation towards students' health and wellness.

1.6 Research Questions

Based on the objectives of the study above, the researcher divided the question into two parts, namely, from the perspective of teachers and students:

Questions from the teacher's perspective

1. What is the level of social environmental support from the aspect of school environmental support, teachers' group support, parents support, training support, and media social support from the teacher's perspective?
2. What is the level of the implementation of Nutrition Improvement Program (NIP) from the aspect of implementation techniques, information transfer on healthy meals, use of various materials, monitoring and evaluation from the teacher's perspective?
3. Is there any difference of the social environmental support from the aspects of school environmental support, teacher's group support, parents support, training support and media social support from the teacher's perspective based on province?
4. Is there any differences in the implementation of NIP from the aspects of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation from the teacher's perspective based on gender and province?
5. To what extent does the contribution of the aspects in the construct of the social environmental support which are school environmental support, teachers'

group support, parents support support, training support and media social support towards the NIP implementation?

Questions from the student's perspective

6. What is the level of the implementation of Nutrition Improvement Program (NIP) from the aspects of program implementation, information transfer of healthy meals, use of various materials, monitoring and evaluation based on students perspective?
7. What is the level of student's health and wellness from the aspects of physical, emotional, spiritual, intellectual and social?
8. Is there any difference in implementation of Nutrition Improvement Program (NIP) from the aspects of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation from the student's perspective based on province.
9. Is there any differences in students' health and wellness from the aspect of physical health, emotional, spiritual, intellectual and social aspects from the student's perspective based on gender and province.
10. To what extent does the contribution of implementation of NIP which are program implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation towards students' health and wellness?

1.7 Research Hypothesis

In this study, hypotheses are built based on research questions which involved hypotheses that are related to constructs from the teacher's perspective that contains 3 hypotheses, while constructs from the student's perspective contains 3 hypotheses.

Research questions number 3 to 5 and 8 to 10 will be answered through the test of null hypothesis as follow:

Ho.1: There is no significant difference for social environmental support from the aspects of school environmental support, teacher's group, parents support, training support, and media social support from the teacher perspective based on province.

Ho.2a: There is no significant difference for Implementation of NIP from the aspects of implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation from the teachers perspective based on gender.

Ho.2b: There is no significant difference for Implementation of NIP from the aspects of implementation technique, information transfer of healthy meals, use of various materials, monitoring and evaluation from the teacher's perspective based on province.

Ho.2c: There is no significant interaction impact between teacher's gender and province towards Implementation of NIP from the aspects of NIP Implementation Techniques, information transfer of healthy meals, use of various materials, monitoring and evaluation from the teacher's perspective.

Ho.3: There is no significant contribution from the aspects in social environmental

support variables which are school environmental support, teacher's group, parents support, training support, and media social support towards Implementation of NIP.

Ho.4: There is no significant difference for Implementation of NIP from the aspects of program implementation technique, information transfer of healthy meal, use of various materials, monitoring and evaluation from the student's perspective based on province.

Ho.5a: There is no significant difference for student's health and wellness from the aspects of physical, emotional, spiritual, intellectual, and social from the student's perspective based on gender.

Ho.5b: There is no significant different for student's health and wellness from the aspects of physical, emotional, spiritual, intellectual, and social from the student's perspective based on province.

Ho.5c: There is no significant interaction impact between student's gender and province towards the student's health and wellness from the aspects of physical health, emotional, spiritual, intellectual, and social.

Ho.6: There is no significant contribution of the Implementation of NIP which are program implementation methods, information transfer of healthy meals, use of various materials, monitoring and evaluation towards students' health and wellness.



1.8 Theoretical Framework Of The Study

1.8.1 Ecological Systems Theory

Bronfenbrenner's Ecological Systems Theory, proposed in 1985, delineates five environmental systems that impact community life, beginning with the microsystem of family, peers, school, community, and interrelated organizations (mesosystem). These systems are interconnected, with relationships established within the microsystem extending to the macrosystem when incorporating variables such as ethnicity, age, and gender. It is asserted by this theory that human development necessitates the support of environmental influences within the ecological system.

According to this theory, each entity in society plays an important role in creating the social environmental, namely the ecosystem of family, peers and the local community. Each ecosystem is related to each other which refers to the next layer called the mesosystem. The basic level social layers are referred to as microsystems while the entire ecosystem is referred to as macrosystem. The last layer according to this theory is the time dimension (time dimension) which describes how experiences in life have a great impact on the way of life, way of thinking and behaviour. Family values are often applied through informal education through example and imitation which becomes a meaningful experience as long as children experience growth at an early age before they start getting to know friends in kindergarten and school who form new patterns in the context of thinking and influence to behave.



During adolescence, individuals often seek to assert their independence from family influence and are heavily influenced by peer encouragement and support. Each system within Bronfenbrenner's Ecological Systems Theory interacts with others, providing individuals with meaningful life experiences and contributing to the construction of a harmonious society. As stated by Santrok (2008), the macrosystem encompasses a person's practices, awareness, appreciation, and social participation, which can shape their life values. In this study, the social environmental theory is employed to assess the relationship between various components of the social environmental ecosystem—such as school environmental support, financial assistance, material resources, parental support, and training support—and their impact.

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1.8.2 Model of Education and Health

The foundation of the Nutrition Improvement Program (NIP) implementation construct is based on two domain models: the Model of Framework for Action on Interprofessional Education and Collaborative Practice (Hopkins, 2010) and the Model of Innovative Health System Initiative (IHSI) Implementation (The Program Evaluation and Research Unit of Pittsburgh University, 2006). These models provide essential guidelines for teachers tasked with implementing NIP or any related program. Through observation of NIP implementation, these models have been modified to address teaching methods and techniques, the dissemination of information on healthy eating, utilization of various teaching materials, and monitoring and evaluation

practices. These aspects are tailored to teachers' implementation of NIP at the school level.

Drawing from the educational and health models mentioned above, the preferred teaching technique for teachers involves effectively conveying information about healthy eating to students participating in the program. This approach emphasizes interactive teaching methods that encourage student engagement and foster peer collaboration. By encouraging interaction and sharing experiences, teachers aim to ensure that students grasp the importance of healthy meal and are equipped to apply this knowledge in their daily lives.

1.8.3 Model of The Six Dimension of Health and Wellness

The Six Dimension of Health and Wellness (Bill Hettler, 1976) model is used to see individual development in terms of health and well-being which contains six main aspects which are emotional, intellectual, physical, social, spiritual and environmental. Based on this model, the development of these aspects is related to the way of eating healthy as well as the daily activities of individuals in carrying out their life activities. Apart from that, this model also explains that other aspects such as intellectual or educational excellence, emotional and social are also greatly influenced by healthy nutritional sources. In relation to that, the implementation of the NIP in this study is very suitable to be measured based on the development and impact of the program obtained from this model.

The features in this model are also used to determine the achievement of the goals of the students who follow the program whether it can benefit health and physical fitness which is closely related to other aspects, namely emotions that lead to motivation, pride, appreciation and emotions that stable among the participants under this program. The other aspects that are measured are spirituality related to high self-confidence, having life goals, competitiveness, involvement in various activities are the aspects that are seen in students who follow this NIP and these will all help the student's excellence whether intellectual in education as well as social relations among the local student community. And this whole aspect is closely related to the NIP program implemented and this matter is also detailed in the Model of The Six Dimension of Health and Wellness which is detailed in the literature section

1.9 Conceptual Framework

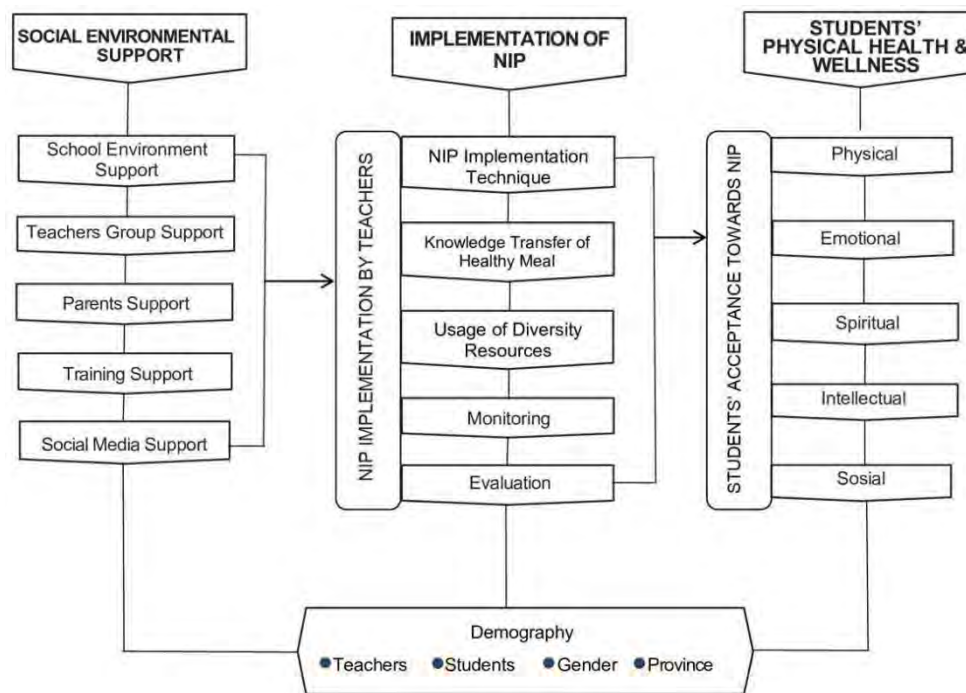


Figure 1.1: Conceptual Framework

Sources: Ecology System Theory (2005), Model Conceptual outline of development of Interprofessional Education (IPE) (2010), Innovative Health System Initiative (IHSI) Implementation Model (2006) and Model of The Six Dimension of Health and Wellness (1976)

The conceptual framework of this study combines theory and several models, including systems ecology theory (2005), and several models, namely the Model Framework for action on inter - professional education and collaborative practice (2010) and Model of Innovative Health System Initiative (IHSI Implementation Model) (2006) and Model of the Six Dimension of Health and Wellness.

Teacher's perspective in the construct of social environmental support refers to social ecological theory which contains aspects of school environmental support, teachers group, parents, training and social media support. For the implementation of Nutrition Improvement Program (NIP), it focuses on aspects NIP Implementation technique, information transfer of healthy meals, use of various materials, monitoring and evaluation. This construct is refer to the IPE Model and IHSI Model as mention above.

From the students' perspective, the focus is on their acceptance of the elements of NIP implementation as conducted by teachers. The construct of students' health and wellness encompasses various aspects including physical health, emotional well-being, spiritual growth, intellectual development, and social interactions. This construct aligns with the Model of the Six Dimensions of Wellness, which provides a holistic framework for assessing and promoting overall well-being.

Based on above Conceptual Framework, Descriptive Analysis and Inferential Analysis were conducted. Descriptive Analysis is conducted to identify aspects level in three constructs namely Social environmental Support, NIP Implementation and Students' Physical Health and Wellness. Two - Way MANOVA is used to differentiate among all the constructs based on gender and province. In addition, Multiple Regression is also used to analyse the extent of the contribution of all aspects in the variable in social environmental support towards NIP Implementation construct from the teachers perspective and the contributions of the aspects in the variables of NIP Implementation from the students perspective towards students Physical health and wellness. A detailed discussion regarding study methods and procedures relating to formula of data analysis, population and sample selection and so on will be further described in methodology in this study.

1.10 Importance Of The Study

1. This study is important to continue several previous studies where formerly they only focus on certain variables that are less comprehensive. But, in this study, the researcher uses diverse and comprehensive variables that are related to social environmental support, implementation and health and well-being of the students. It is certain that the relationship between variables and the contribution of the constructs can create new inputs which will be used in the future more effectively.

2. The results of this study can also be used by the Chinese Ministry of Education and NGOs to enact policies and program improvements so that they can have a great impact on students from physical and intellectual development in education.
3. The results of social environmental support obtained which related to school environmental support, teachers' group support, parents support, training support and social media support need to be prioritized by the Ministry before this meal nutrition program is implemented. This is because a comprehensive support will help to improve the effectiveness of the nutrition program, especially schools in rural areas, which lack a lot from those aspects. The findings which related to social media aspects can be used as an approach for the teachers in enhancing their skills to implement this program at the school level.
4. The findings of the teacher's implementation construct from the aspects of NIP implementation technique, information transfer of healthy meals, use of various materials, monitoring and evaluation can also be used by the Ministry to improve the teachers' professionalism whose involved in this nutrition programs.
5. The health and wellness components analysed in this study need to be used by the teachers in assessing students continuously because it can help the implementers and other researchers to focus on these aspects because it is the main goal of the nutrition program in China.

6. This study can also determine factors related to social support from the aspects of school environmental support, teachers group, parent, training and media social support. While from NIP Implementation, it is seen from the aspects of Implementation Technique, Information Transfer of Healthy Meal, Use of Various Resources, Monitoring and Evaluation which in turn contributes to Students Health and wellness from physical, emotional, spiritual, intellectual and social aspects. This can be used as a guideline to help schools and teachers in providing support aspects and methods of approach in implementing NIP at the school level effectively.
7. Inputs from the results of the study can help teachers, schools, and the Ministry of Education to collaborate and interact with the parents in helping to increase awareness, understanding and practice healthy eating with their children through this NIP. Through this collaborative approach, it is certain that this program can achieve the goals.

1.11 Limitations Of The Study

This study is limited to several aspects in terms of constructs, aspects in constructs, research methodology which is related to sampling, analysis and other related components as follow:

1. The sample of this study is limited to Grade 5 students and teachers who are directly involved in conducting NIP for Grade 5 students at the primary school

level in five provinces in China, which are Henan, Yunnan, Fujian, Qing Hai and Shandong Province. All these schools are under the Chinese Ministry of Education.

2. The limitations of this study include only two perspectives, namely the perspective of the teacher and the student. The teacher's perspective includes the social environmental support construct which focuses on school environmental support, teachers group support, parents support, training support and social media support. In addition, the study also aims to review teachers' implementation in NIP from the aspects of implementation methods, information transfer on healthy eating, use of various resources, mentoring and evaluation. Finally, the study only wants to see the contribution of aspects of the social environmental to the implementation of NIP.

3. Students' perspective refers to aspects related to the acceptance of pupils towards teachers' training in handling NIP related to implementation methods, information transfer on healthy eating, use of a variety of resources, monitoring and evaluation. While in terms of Health and Wellness, it is limited to five aspects, namely physical, emotional, spiritual, intellectual and social.
4. The number of samples used in this study is based on the study sample determined by Krejcie and Morgan (1970).The sample involved 400 teachers while the selected students were a total of 800 people from primary schools from five provinces namely Henan, Yunnan, Fujian, Qing Hai and Shandong Province.

5. Questionnaire is the main instrument used in this study. Therefore, the findings obtained in this study depend on the honesty, seriousness and attitude of the respondents in answering the questionnaires that had been distributed.

6. The study of the implementation of this NIP is using four main models which are Ecological System Theory related to the support aspect school environmental support, teachers' group, parent, training, and media social support. For NIP implementation, the study uses two models, namely the Model of Framework for Action On Interprofessional Education And Collaborative Practice and the Model of Innovative Health System Initiative (IHSI) Implementation. In the first model it focuses on Roles and Responsibilities, Communication, Teamwork and Ethics and focuses on patience, relationships with family while for the second model it focuses on the elements of Planning, Implementation, Optimization, Evaluation and ends with Assessment that determines the effectiveness of the implemented program. Next, the use of the Six-Dimensional Health and Wellness Model is used to look at aspects of physical, emotional, spiritual, intellectual and social health. The use of a combination of these models can also be used as a guide and applied in studying various programs not only in the NIP program but in other programs implemented by the Ministry of Education

1.12 Operational Definitions

This section details the terms used in the study covering the aspects of social environmental support, teacher's implementation aspects in NIP and students' health

& wellness aspects. The terms are important to understand the aspects used in this study. Plus, the relationship between the variables of these aspects also will be analyzed into details. The terms used in this study are as follow:

1.12.1 Nutrition Improvement Program (NIP)

The Nutrition Improvement Program (NIP) is a healthy food program implemented by the Chinese Ministry of Education to help underprivileged students, especially at the primary school level. The purpose of this program is to improve physical, mental, intellectual, emotional health and also to improve educational excellence. This program is ran continuously on the students aged between 6 to 14 years old. This is planned is a long term programme initiated by the Ministry of Education from 2017 to 2030 involving 123,0800 schools and 350 million people. The implementation of this program also involves teachers in each school in helping to improve the effectiveness of the program. The details of this program can be seen in the literature review in chapter 2.

1.12.2 Social Environmental Support

According to Bronfenbrenner (2005), Social environmental Support has five layers, namely, Microsystem, Mesosystem, Ecosystem, Macrosystem and Chronosystem. These five layers are applied to the terms of this study which are school environmental Support, Teachers' Group, Parents, Training and Media Social Support.

The entire social support is used as stated next. All of those aspects refer to the original theory, only social media is added based on the current environment

1.12.3 School environmental Support

According to Berns (2012) school environmental support, refers to everything that happens in the school environmental including administration, culture, and the school community. In this study, school environmental support refers to the extent of which school administrators provide support from the aspects of school infrastructure facilities, moral support, activity support towards improving the skills and motivation of teachers in implementing NIP.

1.12.4 Teachers' Group Support

Teachers' Group Support refers to a community of teachers in schools who interact with their colleagues in sharing knowledge and cooperating in carrying out various activities at the school level, whether in curriculum or Co-curriculum to improve the quality of education in schools (Lin E, 2022; Lei et.al, 2018. In this study, teachers group support is related to the characteristics, the concept of cooperation, exchanging experiences, working in groups, using various materials together in implementing NIP at school.

1.12.5 Parent Support

Parents play an important role because parents are the person who are responsible for determining the excellence of their children's education apart from teachers (Cunsolo, 2017; Lokanath, 2012). In this study, parental support refers to how parents can help teachers in implementing the NIP program among their children at school, including in terms of providing information to the students, to the teachers, cooperating in monitoring and other things to ensure their children following NIP needs.

1.12.6 Training Support

Training Support is a process to gain skills in any job (Prewet et.al 2018). In this study, training support refers to teachers who implement NIP whether they are given training to gain knowledge and skills to implement NIP at the school level and it is very important because without knowledge and skills, NIP can't be carried out effectively and become less beneficial to the students.

1.12.7 Social Media Support

Social media support is the latest platform for learning about education in a form that is easier and up to date (Sonja et.al 2018; Apuke et.al, 2018). In this study, the aspects reviewed are how teachers can get the latest knowledge of the recent healthy eating and diagrams which can be used when teachers implementing the NIP program at

school. The diversity of these sources can provide more awareness and understanding in nutritional practices among the students.

1.12.8 Nutrition Improvement Program Implementation

These aspects of implementation Nutrition Improvement Program (NIP) are based on references to the Model Framework for action on Inter professional Education and Collaborative Practice (2010), and the Innovative Health System Initiative (IHSI Implementation Model) (2006) for teachers in implementing the Nutrition Improvement Program (NIP). In this study, NIP refers to NIP delivery techniques, information transfer of healthy eating, use of various Monitoring and Evaluation.

1.12.9 NIP Delivery Technique

NIP delivery technique refers to how teachers use those techniques and approaches in the process of implementing the NIP program to achieve the goals of the program. This includes the variety of techniques and methods used by teachers in explaining to the students about the importance of healthy eating, providing healthy eating schedules for the students to ensure healthy meal is always taken, using an individual interaction approach with problematic students, using a small group approach of students so that they can exchange experiences and using online groups to interact with the students during the implementation of the NIP program.

1.12.10 Information transfer of Healthy Meal

The information transfer aspect of healthy meal is related to the teacher's guide to deliver procedures to obtain a balanced meal. This includes explaining the importance of healthy food, how to get a balanced diet, explaining the appropriate time to eat to the students, communicating in a language that is easy for the students to understand about healthy eating and delivering in the form of student reflection about healthy eating during the implementation of the NIP program.

1.12.11 Use of Various Materials

Use of various materials in this study focuses on the creativity of teachers using teaching aids to facilitate students' understanding. This includes the use of food catalogs to explain healthy eating to the students, using charts to facilitate students' understanding, showing pictures of healthy food and the relationship with health, using digital resources about healthy eating, using replicas to illustrate types of healthy food and using ICT in explaining food nutrition and its importance in NIP.

1.12.12 Monitoring

The monitoring aspect, on the other hand, refers to monitoring that is carried out in phases or continuously to ensure that a program or training can be guaranteed to be effective. This includes activities such as ensuring the students to eat healthy meals as

planned, creating a meal plan for students, talking with parents who involved in the program so that the students practice balanced diet at home, reminding the students that they need to follow an appropriate meal plan, and asking their peers about how their food intake during the NIP program.

1.12.13 Evaluation

The evaluation aspect is executed to ensure the implementation of the NIP achieves its goals as expected. Using questionnaires to collect information and make an analysis to evaluate the effectiveness of the NIP program, making an assessment of student motivation after they had been involved in the program, asking their parents about the effects of the NIP program on their children's physical and performance, asking students' peers about changes in physical fitness and educational performance, making observations about behavioral changes involved, and asking about the students' health and wellness during NIP program are the criteria in this aspect.

1.12.14 Physical Health and Wellness

Physical Health refers to total well-being of a person while Wellness refers to individual well-being that involves internal and external well-being and is discussed in detail as below:

1.12.15 Physical Health

Health and wellness in the context of this study contains five main aspects, which are physical, emotional, spiritual, intellectual, and social. Physical aspect focuses on health and fitness of a student in learning activities in various fields at school. Aspects such as physically fit students, able to participate in physical activities held at school actively, not experiencing any health problems, always punctual in learning due to good physical health, able to concentrate when the teacher is teaching, able to participate in sports activities at school without any health problems, and feeling fit and energetic while at school.

1.12.16 Emotional

Emotional aspect relates to the feelings or the inner behavior of a student which is linked to education (Archambault et.al 2009). In this study, the emotional aspect refers more to feelings of happiness, motivation to learn, a positive attitude, a sense of pride for being able to follow the NIP program, being able to control emotions when there are disagreements with friends, not blaming others when something unwanted happens and appreciate to any gifts given by others.

1.12.17 Spiritual

Howden Judi (1992) identifies spiritual as 'purpose and meaning of life' as the critical attributes in spirituality and included in this search for relationships and situations that give a sense of worth and reason for a living. In this study, it refers to the situation where after the students followed the NIP program, do they have the confidence and ambition to get a better education and able to change their lives to a better one? This also includes the aspects of possessing high confidence to compete with other students in studies, having the confidence to determine life goals, confident in their physical development, confident that they will continue to excel in life especially in education, having ambitions to pursue their education to university level, confident that they can help their family to get out from poverty, and the confidence to convey their views or opinions publicly.

1.12.18 Intellectual

Psychologists Xiaoxiao Shen (2023) defined intelligence in education as the ability to think abstractly, solve problems and learn. In this study, intellectual refers to the students' ability to master the subjects taught at school and also compete with other students to achieve excellent performance. This includes aspects such as, students are able to focus on the teaching and learning process in the class, able to master the subjects taught by the teacher well, easily remembering the facts taught by the teacher, being able to review subjects over a long period of time, being able to participate actively in learning discussions with friends, always response to the questions when



asked by the teacher in the class, and always completing the homework given by the teacher.

1.12.19 Social

Social norms perceived as informal, mostly unwritten, rules that define acceptable and appropriate actions within a given group or community, thus guiding human behavior (Sood et.al., 2021). In NIP, social aspects are seen as the ability to interact and socialize with their friends at school and outside of school with confidence and comfort due to nutritional factors that which lead to the improvement in social relationships. Such examples are as increasing good relationships with friends regardless of their background, always interacting well with friends at school, being able to confidently interact with teachers at school and in the classroom, enjoying seeing friends at school, offering help to friends at school when they need help, enjoy playing with friends after school, enjoy meeting teachers at school, don't mind helping teachers when teachers ask for help, participating in extracurricular activities such as sports, clubs and etc.

1.12.20 Teachers & Students

The teachers involved in this study are primary school teachers who serve under the Ministry of Education of China and involved in handling the NIP program and these teachers have also received training and exposure in the process of implementing the



NIP. While the students consist of 6th year students from underprivilege background who have participated NIP which conducted in five provinces in China.

1.13 Summary

Based on the discussion, the aim of this chapter is to provide a comprehensive overview of the Nutrition Improvement Program (NIP) from both the perspectives of teachers and students. The chapter initiates the discussion with an introduction, background of the study, problem statement, purpose of the study, objectives of the study, research questions, research hypotheses, significance of the study, limitations of the study, and operational definitions. Each of these components plays a crucial role in outlining the scope and purpose of the research. Furthermore, the terms outlined in the conceptual framework are defined and explained to provide clarity and context. Additionally, the limitations of the study are acknowledged to delineate the boundaries of the research. Together, these elements contribute to establishing a solid foundation for understanding the study and serve as a guide for the research process. Therefore, the critical discussion and analysis presented in Chapter 1 aim to offer a comprehensive initial understanding of this study.