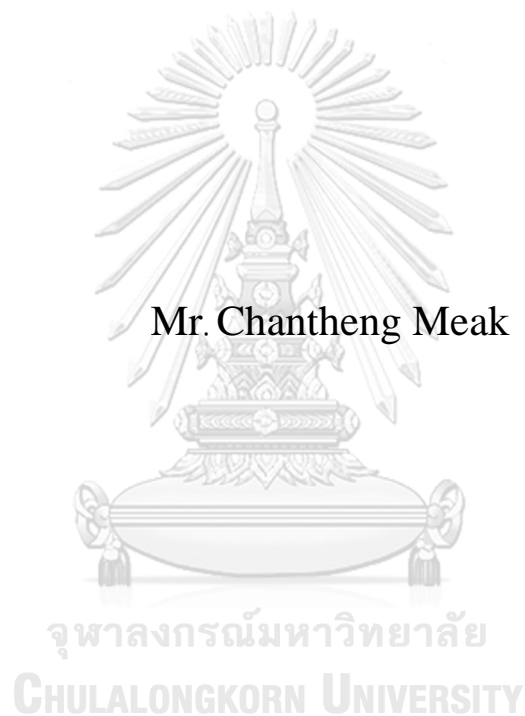


DEVELOPMENT OF SCHOOL TEACHER CAREER
PATHWAY IN CAMBODIA BASED ON THE CONCEPT OF
AUTHENTIC STUDENT ACHIEVEMENT



A Dissertation Submitted in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy in Educational Management
Department of Educational Policy, Management, and Leadership
FACULTY OF EDUCATION
Chulalongkorn University
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การพัฒนาเส้นทางอาชีพครูในประเทศกัมพูชาตามแนวคิดผลสัมฤทธิ์ทางการเรียนที่แท้จริงของ
นักเรียน



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การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อ 1) ตรวจสอบกรอบแนวคิดเส้นทางอาชีพครูในโรงเรียนและผลสัมฤทธิ์ที่แท้จริงของนักเรียน 2) สภาวะที่พึงประสงค์ของเส้นทางอาชีพครูในโรงเรียนของราชอาณาจักรกัมพูชาตามแนวคิดผลสัมฤทธิ์ที่แท้จริงของนักเรียน และ 3) พัฒนาเส้นทางอาชีพครูในโรงเรียนของราชอาณาจักรกัมพูชาตามแนวคิดผลสัมฤทธิ์ที่แท้จริงของนักเรียน โดยใช้ระเบียบวิธีวิจัยแบบผสมวิธีพหุระยะ (Multi-phase mixed methods design) ผู้ให้ข้อมูลจำนวน 491 คน ประกอบด้วย ผู้บริหารโรงเรียน 40 คน ครู 451 คน ที่สอนระดับก่อนประถมศึกษา ระดับประถมศึกษา และระดับมัธยมศึกษาในสังกัดกระทรวงศึกษาธิการ เขาวชนและกีฬาแห่งราชอาณาจักรกัมพูชา เครื่องมือที่ใช้ในการศึกษา ได้แก่ แบบสัมภาษณ์กึ่งโครงสร้าง แบบสอบถาม และแบบประเมินความเหมาะสมและความเป็นไปได้ของการพัฒนาเส้นทางอาชีพครูในโรงเรียนของราชอาณาจักรกัมพูชาตามแนวคิดผลสัมฤทธิ์ที่แท้จริงของนักเรียน สถิติที่ใช้วิเคราะห์ข้อมูล ได้แก่ ความถี่ ค่าร้อยละ และการวิเคราะห์เนื้อหา

ผลการวิจัยพบว่า 1) กรอบแนวคิดเส้นทางอาชีพครูในโรงเรียนประกอบด้วย ตำแหน่งครู เส้นทางอาชีพของแต่ละตำแหน่ง คุณวุฒิ ประสิทธิภาพการพัฒนาที่สำคัญ และสมรรถนะ ส่วนผลสัมฤทธิ์ที่แท้จริงของนักเรียนประกอบด้วย การสร้างองค์ความรู้ การศึกษาวิจัย และคำนิยามของสังคมนอกโรงเรียน 2) สภาพที่พึงประสงค์ของเส้นทางอาชีพครูในโรงเรียนของราชอาณาจักรกัมพูชาตามแนวคิดผลสัมฤทธิ์ที่แท้จริงของนักเรียนแบ่งออกเป็น 3 กลุ่ม ได้แก่ ครูระดับก่อนประถมศึกษาและประถมศึกษา ครูระดับมัธยมศึกษาตอนต้น และครูระดับมัธยมศึกษาตอนปลาย เส้นทางอาชีพครูตามตำแหน่งมี 5 ระดับ คือครูใหม่ ครูครูอาวุโส ครูผู้ทรงเกียรติ และครูต้นแบบ 3) เส้นทางอาชีพครูในโรงเรียนของราชอาณาจักรกัมพูชาตามแนวคิดผลสัมฤทธิ์ที่แท้จริงของนักเรียนมี 6 องค์ประกอบสำคัญ ได้แก่ (1) ตำแหน่งของครูประกอบด้วย ครูระดับก่อนประถมศึกษาและประถมศึกษา ครูระดับมัธยมศึกษาตอนต้น และครูระดับมัธยมศึกษาตอนปลาย (2) เส้นทางอาชีพครูประกอบด้วย ครูใหม่ ครูอาวุโส ครูผู้ทรงเกียรติ ครูผู้เชี่ยวชาญ (3) คุณวุฒิประกอบด้วย วุฒิต่างการศึกษา และใบอนุญาตประกอบวิชาชีพครู (4) ประสิทธิภาพการพัฒนาที่สำคัญมี 4 กลุ่มคือ ประสิทธิภาพการสอน ประสิทธิภาพภาวะผู้นำ ประสิทธิภาพวิจัยและการแบ่งปัน และความสำเร็จของครู (5) สมรรถนะประกอบด้วย ความรู้ในวิชาชีพ การปฏิบัติในวิชาชีพ การพัฒนาวิชาชีพ และจรรยาบรรณวิชาชีพ และ (6) ผลสัมฤทธิ์ที่แท้จริงของนักเรียนประกอบด้วย การสร้างองค์ความรู้ การศึกษาวิจัย และคำนิยามของสังคมนอกโรงเรียน



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KEYWORD: TEACHER CAREER PATHWAY, AUTHENTIC STUDENT ACHIEVEMENT

Chantheng Meak : DEVELOPMENT OF SCHOOL TEACHER CAREER PATHWAY IN CAMBODIA BASED ON THE CONCEPT OF AUTHENTIC STUDENT ACHIEVEMENT. Advisor: Prof. PRUET SIRIBANPITAK, Ph.D. Co-advisor: Suebsakul Narintarangkul Na Ayudhaya, Ph.D.

The purposes of this research study were 1) to examine the conceptual framework of teacher career pathway and authentic student achievement, 2) to explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, and 3) to develop school teacher career pathway in Cambodia based on authentic student achievement. A multi-phase mixed methods research design was applied. The informants of this study were 491 people consisting of 40 school administrators and 451 teachers of pre-school, primary, and secondary school under the supervision of Ministry of Education, Youth and Sport, Kingdom of Cambodia. The instruments used in this study were semi-structured interview form, questionnaire, and evaluation form to testify the suitability and feasibility of development of school teacher career pathway in Cambodia based on the concept of authentic student achievement. The frequency, percentage, and content analysis were used to analyze the collected data.

The research finding revealed that 1) the conceptual framework of school teacher career pathway comprises of teacher position, career pathway of each position, qualification, critical developmental experience, and competencies, and authentic student achievement comprises of construction of knowledge, disciplined inquiry, and valued beyond the school, 2) the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement were categorized into three groups consisting of pre-school and primary school teacher, lower secondary school teacher, and upper secondary school teacher, and five professional levels of career pathway for teachers consisting of novice teacher, teacher, senior teacher, distinguished teacher and master teacher, and 3) the school teacher career pathway in Cambodia based on the concept of authentic student achievement consists of 6 key components, namely (1) teacher position consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers, (2) career pathway consisting of novice teacher, teacher, senior teacher, distinguished teacher, and master teacher, (3) qualification consisting of educational degree, and teaching license, (4) critical developmental experiences consisting of teaching experiences, teacher leadership experiences, research and sharing experiences, and teacher achievement, and (5) competencies consisting of professional knowledge, professional practice, professional development, and professional ethics, and (6) authentic student achievement consisting construction of knowledge, disciplined inquiry, and valued beyond the school.

Field of Study: Educational Management

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Student's Signature

Advisor's Signature

Co-advisor's Signature

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CHAPTER 1

INTRODUCTION

1.1 Background and Problem Statement

In recent years, technological, economic, and societal trends in the age of digital disruption have a considerable impact on living and working conditions. It can also create opportunities for changes in the nature of work itself, patterns of work, individual and organizational behavior. Meanwhile, workers must make their career decisions how to work within an increasingly uncertain organizational, societal, and global environment (Cascio, 2003). Most of organizations have been facing the challenges of attracting and retaining the talented employees in their organizations. Twenty-first century organizations need to provide their employees with reasonable career paths and career counselling to grow within their organizations that why they may achieve their personal goals over time the span of their career (Cappelli, 2008). There is strong evidence that career pathways show employees how they can progress their career through the organization to reach their personal career goals. Therefore, career pathway system can provide the rigorous structure that is vital for career progression, helping employees develop their competencies designed to increase employability while helping organizations develop employees strategically, establish significant motivation in the workforce, reduce absenteeism and turnover rate of employee, build organization engagement, and improve talent employees retention.

Most individuals seem to agree that career advancement management for employees will continue to hold an important role to retain them in organizations. There was a study on managing human resources to improve employees retention in an organization in responsive to the conceptualization of the interaction between job characteristics and individuals (Arnold, 2005); Hackman and Lawler (1971). They suggested two assumptions underlie the question of how the motivation of individuals can be enhanced through work design, 1) individuals may be working harder if they

believe their efforts will valuably benefit, and 2) satisfaction of higher-order needs would rather motivate individuals than lower-order needs, which tend to be satisfied on a more frequent basis.

According to longitudinal study by [Spurk, Kauffeld, Barthauer, and Heinemann \(2015\)](#), the results show that career pathways effecting on the job attraction and job satisfaction was 15% and 18% in external marketability. Similarly, a research by [Cao and Thomas \(2013\)](#), the results indicate that the effectiveness of career paths had positive impact on expanding the pool of perspective employee attractiveness to new hires by up to 35%, improving employee performance management by up to 36%, driving employee development by over 28%, and enhancing employee retention by up to 40%.

The declaration of Education 2030 Incheon and Framework for Action 2015 stated that teacher policies and regulations should ensure that teachers have been regularly motivated to empower, adequately recruited and remunerated, well- trained, professionally qualified, equitably and efficiently deployed within the whole education system, and supported within well-resourced, efficient and effectively governed systems ([United Nations Educational, 2016](#)). The teachers are widely regarded as the key to achieving all of the Education 2030 agenda. There would be creating necessary conditions to retain teachers in system for an inclusive and quality of education and lifelong learning for all by 2030. By the above statement on effective teacher policies, it is ambitious and challenging to achieve the goals of Education 2030 vision. Looking back at the 1966 ([Doyle, 2013](#)), ILO/UNESCO recommendation regarding the status of teachers, There were the adaptation of setting the standards for a wide range of these issues to remain highly teachers, such as, initial and continuing training, recruitment, advancement and promotion, supervision and assessment, responsibilities and rights, and participation in educational decision-making. It was supported by the finding of studies examining the teachers around the world that indicated the reasonable making decision to enter the profession in different reasons, they all share the need for appreciation, autonomy, and affiliation during their professional careers. However,

teachers' positive sense of their status is closely linked to other aspects of education quality, including continuous professional development, engagement in research, collaboration and exchange knowledge and experiences of best practice with other teachers, and involvement in decision-making (Hargreaves and Flutter, 2013).

Similarly to the research study results on teacher matter conducted by UNESCO Bangkok in 2016, it was found that there was a lack of alternative professional pathways for teacher career progression and promotion opportunities tend to be hierarchical and linear, often leading to qualified teachers being moved from the classroom to become a vice-principal or to take administrative roles. The lack of career opportunities affects teacher moral and impact on teacher retention in some countries. In this respect, the education associations are the most appropriate agents to help teachers improve their status by influencing educational policies making and practice, so that teachers comfortably feel more engaged when they believe that their career growth and avenues are concerned to reach individual career goals while fulfilling the organizational goals.

. With highly valuable contribution to national development and society, it has been broadly recognized that teachers are critical educational resources in every country in the world so that the presence of well-motivated and supported teachers is very vital for student learning process and student learning outcomes. As the results, the effective instruction strongly influences what and how students achieve in school. Actually, teachers are being subjected to increasingly motivate and help to higher levels of accountabilities for student learning achievement. Regarding to education, a teacher is very important for active participants in the school as teacher to play the crucial role in developing students in all aspects that why the teacher quality is quite significant. Many researchers have tried to study on the correlation between teacher's teaching variable and student's studying variable (Greenwood & Maheady, 1997). There have been a lot of evidences to show that teacher quality is the key schooling factor influencing student learning outcomes (Aaronson, Barrow, & Sander, 2007; Goldhaber, Brewer, & Anderson, 1999; Rivkin, Hanushek, & Kain, 2005; Rockoff, 2004). Mckinsey (2007) argues that the quality of education system cannot exceed the quality of its teachers.

The only one way to improve learning outcomes is to improve the quality of instruction. According to a study on teacher quality and student achievement by (Brandt, 1990); Darling-Hammond (2000), the findings of both the qualitative and quantitative analyses suggested that policy investments in teacher quality may be related to improvements in student performance. Engel, Reich, and Vilela (2014) shows the reasons that why teachers are the key components to increasing quality education because they arrange the interactions of instruction with and between students about academic content and classroom interactions. Furthermore, the McKinsey study of 10 top performing school systems found that three attributing factors are important: “getting the right people to be teachers; developing them into effective teachers; and ensuring that the system is able to deliver the best possible instruction for every child” linked to increasing the teacher quality that makes the largest difference in student achievement and the most effective school systems invested in their teachers (McKinsey, 2007).

With rapidly changing workplace, the employees must make career decisions within an increasingly uncertain organizational, societal, and global environment. Most of firms are facing the same evolving landscape, making it difficult for them to anticipate their employees' needs, desires, and likely career directions (Judy & d'Amico, 1997). In our focus on the workplace, the organizations underscore the need for more holistic, data-driven individual and organizational perspectives on career growth and success; describing how a career pathways framework can contribute to the goals, we should offer the right directions for future research to promote career growth and success for individuals, and to help employers create or strengthen career pathways systems that will reduce bias and enhance organizational performance by supporting the advancement of their employees. In particularly, career management in organizations will drive the effectiveness of career externally, while the individual career management will support the achievement of individual careers within the organization internally (Simanjuntak & Sembiring, 2018).

In response to effective human resource management in education, Luce (1998) stated that teacher career pathway can be used to promote job satisfaction and increase motivation for teachers, helping teachers facilitate organizational objectives, providing them with meaningful incentives, and offering the opportunities for career growth. Therefore, teacher career pathway can also include mentoring programs, instructional development, and other school-wide contributions. The implementation of career pathway also fosters improved relationships between teachers, school officials and other educational administrators. Similarly, teacher career pathway also has some cases spurred increased student learning achievement and lower dropout rates, created a shared sense of leadership among teachers and provide teachers with increased sense of self-efficacy (Odden, Odden, & Kelley, 2002).

(Odden et al., 2002).

Regarding the improvement of teacher satisfaction, teacher motivation, teacher retention, and social-economic status of teachers, some countries in region such as Singapore, Philippines, and Thailand have implemented teacher career pathway. In other word, Cambodia has adopted policies and programs aimed at improving career advancement structure and compensation structure system. These efforts can significantly contribute to attract, motivate, and retain qualified teachers in an education system, especially keep excellent teachers in the classroom. Most importantly, teachers may be offered the opportunities to express their personal aspirations and consider possibilities for their career development. To make more attractive career options for both generation teachers X and Y that they expect that they will be progressing flexibly in terms of a career pathway or a career lattice within an education system, getting more opportunities to develop continuously their teaching profession through new differentiated roles and various levels of responsibility. Research on job choice, career choice, and turnover clearly shows that the kind and level of rewards an organization offers influences who is attracted to work for organization and who will continue to work for it. Therefore, teacher career pathway encourages teachers to direct their careers along paths that lead to refined skills and higher levels of responsibility with benefits.

With career pathway linked to professional development, [Joyce and Showers \(2002\)](#) argues that professional development in terms of four main components consisting of developing knowledge and skills, the demonstration or modelling of skills, the practice of skills, and peer coaching allows teachers to learn more and has positive impact on student achievement. It is more important to note that career pathway will provide teachers with an ongoing mechanism to enhance their knowledge and skills that can lead to mastery of their jobs, promotions, and transfers to new different positions at higher levels. The implementation of career pathway may also have a direct impact on the entire education system by improving morale, career satisfaction, motivation, productivity, and responsiveness in meeting the individual and organizational goals. The organizations that are unable to develop career paths for satisfying to their employees will have a difficult time maintaining an adequate level of skilled employees to support the organization's operations and effectiveness ([Baroudi, 1988](#)).

In addition, it is clear that teacher career pathway in Britain can have a positive impact on better teaching quality, probably contributed in significant ways to the improvement of quality education in the country. Teacher career pathway with differentiated additional responsibilities in American indicated that teachers can be models and mentors, promote better teaching in general and be a significant force in developing good, workable curriculum that will enhance student learning achievement ([Murphy, 1984](#)).

Additionally, [Crehan \(2016\)](#) conducted a research on exploring the impact of career models on teacher motivation. He suggested that most career pathway initiatives could be considered to three types of career pathway including 1) performance-based pathway used to structure teachers' work and promote teaching effectiveness, 2) job-enlargement pathway linked to performance to the extent that a teacher has to demonstrate teaching proficiency based on set standards, and 3) professional development pathway based on more knowledge or skills through credit, staff development activities, advanced degrees or certification that teachers attained.

In Cambodia, there have been many challenges in education, such as teacher attraction and retention, teacher shortage, and increasing student achievement quality. There was a study by Tandon and Fukao on how attractive is the teaching profession in Cambodia, the findings showed that it was low rate of attracting the best individuals into teaching profession (Tandon & Fukao, 2015b). It was supported by World Bank mentioned that status of teaching profession for teacher has declined for over the last few decades all around the world in terms of pay, respect and working condition (Gauthier, 2018). Generally, high outstanding students who graduated from grade 12 exam in general education in Cambodia chose the teaching profession in their last choices. Teaching profession in Cambodia is not a particularly attractive profession that could not be able to attract the top scores in A and B ranges on grade 12 national exam. According to annual report 2019 of personnel department, Ministry of Education, Youth and Sport, Cambodia, it was shown that educational staff had left the education system 531 people in 2017, 479 people in 2018, and 427 people in 2019. The teacher attrition rate in 2019 was 1.34%. New 3576 candidates needed to be recruited in 2018. New 3600 candidates needed to be recruited in 2019, and new 3600 candidates need to be recruited in 2020. In response to teacher shortage, Ministry of Education, Youth and Sport, allows schools to have over teaching load with extra pay, arrange multi-grade integrated classes and two class shifts in the morning and afternoon with extra pay for teachers. Therefore, contract teachers have been hired for classes in remote or disadvantaged area.

Regarding to authentic student achievement, there is growing concern that many Cambodian graduates entering the labor market are lacking essential skills related to communications, collaboration, and critical and creative thinking, not responsive to the level of social and economic development of Cambodia (Naron, 2017). The corporate sector is increasingly reporting that graduates are not prepared and do not have proficiency in job related skills. A survey revealed that investors were not able to recruit sufficient numbers of skilled workers while universities graduates cannot find employments due to skill mismatch. The greatest gap was seen in critical

thinking/problem solving, followed by attention to detail, communication, ownership, leadership, and writing proficiency; percentages indicate the proportion of managers that selected each skill as lacking.

In response to the challenges for low status of teaching profession, low motivation on teacher effectiveness, and limited career advancement for effective teachers in classroom to help students reach their full potential, the school teacher career pathway may be alternative appropriate solution that Ministry of Education, Youth and Sport, Cambodia considers to establish the framework of school teacher career pathway to motivate effective teachers to higher levels of their performance, keep them active engagement in the classrooms, and extend their reach to more students by leading teaching teams in and outside the schools. It would also allow high performing teachers to specialize in an area of their interests, build leadership skills, and take on more additional responsibilities without leaving the classroom. With supporting continuous professional development and mentoring program, teacher leaders will provide a contextual level of support to other teachers with the goal of improving their student learning achievement. Therefore, teacher career pathway is also considered as one of the effective tools of retention and work motivation, and key contributor to the effectiveness of the organization.

In this section, the researchers propose a model to enhance teaching effectiveness based on authentic student achievement, promote life-long learning, and ensure that students not only learn the theoretical aspects of the subject matter, but the essential skills necessary to meet objectives when in the workforce. The approach is two-pronged in that (1) the instructor must embody a coach approach, and (2) students must acquire essential skills as they move through academia and into the workforce.

As reviewed above, there are many lessons that Cambodia can learn from high-performing school systems around the world, which have policies in place to respect and support their teachers, giving them exposure to best teaching practices and resources they need to develop. To create a true teaching profession in Cambodia, the education system must provide the career structure and supports that may allow effective teachers to assume meaningful leadership roles and to expand their profession

growth both in and outside the school. These roles should provide diverse opportunities and choices for teachers to continuously develop their skills and different types of roles and responsibilities for teachers to progress their career advancement. It is essential to develop career pathways that provide a clear mechanism to capture the leadership and instructional capacities of teachers. By working with teachers to develop and implement school teacher career pathway, the Ministry of Education, Youth and Sport will be demonstrating its commitment to enable all teachers to achieve their fullest potential, which in turn increases levels of personal satisfaction and improve job performance with new positions associated with specific tasks and roles in addition to classroom teaching in respond to positive impact on student learning achievement.

As teachers progress throughout their careers, they must grow and transform to remain effective. Human resource management strategy in education has been increasingly changed to focus on establishing career management structures and incentives support system. As a result, the development of career pathway for teacher progression may make the teaching profession more attract, motivate, and retain the qualified individuals in the classroom and an education system.

The constitution of the kingdom of Cambodian Act of 1993 addressing in Chapter 11, Article 65 states that “the state shall protect and promote the right of the citizen to a quality education at all levels and shall take every measure to progressively make this education available to all the citizens”. In accordance with the constitution of the Kingdom of Cambodia, the Royal Government of Cambodia (RGoC) (2018) has issued and implemented Rectangular Strategy-Phase IV for growth, employment, equity and efficiency focusing on human resource development based on improvement of the quality of education, science and technology. The Royal Government of Cambodia has the ambition to transition from a lower-middle income status country to being an upper-middle income status country by 2030 and developed country by 2050 based on building a society with peace, political stability, social order, democracy, rule of law, human right and dignity, sustainable development, knowledge society, and living with harmony (RGoC, 2018). Meanwhile, RGoC has recognized the importance of the

education sector in leveraging the socio-economic potential of the country and increasing its collaboration and competitiveness within the ASEAN economic environment community and the world.

As can be seen from Cambodian Education Law Act of 2007 addressing in chapter5, article 21 states that “the state shall promote the quality of education to satisfy the basic education and professional needs for the careers of the learners to better improve their capacity and to enable the learners to efficiently participate in the development of the country” (Education Law, 2007). Regarding the aforementioned context, the Ministry of Education, Youth and Sport (MoEYS) has paid more attention to achieve a long-term vision, aiming “to establish and develop human resources of the highest quality and standards of morality to develop a knowledge-based society in Cambodia” through education reform which has heavily focused on the key role of teachers in an education system.

In 2018-2019, 77% of the total number of 12,1680 Ministry of Education, Youth and Sport staff is teaching staff. There are currently 93,703 teachers in the system including 5.43% teaches in pre-schools, 49% teaches in primary schools, 30.70% teaches in lower secondary school teachers, and 14.87% teaches in upper secondary schools (MoEYS, 2019). One of the fundamental problems with teaching supply is turnover rate that the number of educational personnel who leave their teaching profession in education system is more than 2,000 per year. At the same time, the total number of new teachers recruited and trained is around 5,000 annually. Particularly at the upper secondary level where the attrition rates continue to increase, which leads the major supply problems and lower quality education. Moreover, the utilization of teachers including deployment and pupil-teacher ratio is not appropriately implemented compared to the principles sets.

According to education statistics & indicators public and private education institutions 2015-2019 and the annual congress report 2020 of Ministry of Education, Youth and Sport, Cambodia, it was shown that total number of teachers was 93,703,

and turnover of educational personnel was 1,631 due to retirement and transfer to other system. 3,600 teachers need to be recruited in 2020. It was low rate of attracting the best individuals into teaching profession in Cambodia (Tandon & Fukao, 2015a). The most common reasons of teacher attrition rates are the limitation of professional career pathways for teachers' career progression opportunities in their teaching profession and single salary structure. After several years in their teaching experiences, teachers expect to be at a higher level with new opportunities to serve in new professional roles as well as increased professional development and compensation. In other words, highly qualified teachers who do not wish to leave the classroom are not recognized and motivated with appropriate rewards for their excellence in teaching performance in the classroom. To get higher promotions, the excellent teachers must move from classroom teachers to become a vice-principal or to take on administrative roles. Moreover, the single salary structure mostly based on seniority of teaching experiences in which teachers' pay increases yearly, irrespective of teaching quality. The only other factors considered in calculating pay are additional qualifications, and promotions to administrative positions only. Problems with this structure includes a lack of correlation between the factors used for promotion associated with certificates and experience and teacher effectiveness; a lack of accountability for quality of teaching; the demotivating effect on colleagues of less-dedicated teachers receiving automatic promotion; a flat salary structure that makes the profession less attractive. The most important factor in those schools is how to get excellent teachers into those schools in the first place and get them to stay there longer until retirement.

In 2015, Teacher Policy Action Plan (TPAP) was formulated aiming at providing clear direction for systematic reform and implementation of teacher policy, including concrete programs, activities, timelines, expected outcomes, and projected budget allocation for implementation from 2015 to 2020. In the meanwhile, MoEYS has upgraded the teacher education program from Teacher Training Centers (TTCs) to Teacher Education Colleges (TECs), aiming at strengthening the teacher education system. MoEYS also developed the Teacher Education Provider Standards (TEPS) to set

out the national standards of teacher education in 2016, expecting the upgrading and expansion of teacher education providers in the near future. However, school teacher shortage and lack of motivation for teachers' fulfillment and growth in line of their teaching profession are the main problems in educational development. Thus, MoEYS (2018) has recently approved the teacher career pathway framework to meet Teacher Policy Action Plan and to recognize the stages of teacher's career progression in promoting differentiated roles for teachers.

Like many other countries, Cambodia has been facing the lack of career opportunities for teacher careers' progression, to be promoted higher position, teachers have to move from classroom teachers to become school administrators or provincial or ministerial levels so that it affects teacher morale and causes negative impacts on teacher retention in the classroom. In this respect, Ministry of Education, Youth and Sport has initiated to formulate the teacher policy action plan (TPAP) in 2015 to foster their better performance by influencing educational policies on teacher career pathway framework, so that teachers would feel more and believe that their career growth and avenues are concerned, and that they would be able to reach individual career goals while fulfilling the organizational goals. In this career pathway, it is possible for teachers to advance while staying in the classroom, and to perform as leaders in various capacities as they are advancing. Regarding to the improvement of quality of teaching, teachers' capacities may be continuously developed in line with the increasing quality of student achievement (Darling-Hammond & Falk, 1997).

In response to goals of education, students have been achieving when they acquire the knowledge, skills, and attitudes that they are able to apply in daily lives and become a good citizen in society. The student achievement has become a main topic in education today, especially with increased accountability for classroom teachers. The ultimate goal for any teacher is to improve the ability level and prepare students with all aspects of development.

The findings of various studies examining the benefits and forms of organizational career management have been questionable yet, however, a study of career management in China by Kong, Cheung, and Song (2012) indicated superior results with employees' career satisfaction while a study by Osei (2008) indicated little or no significant effect. Although much work has been done to date, more studies need to be conducted to ascertain the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

It is hoped that the research finding will not only inform policy makers in initiating policy of teacher attraction and retention in an educational system, especially retaining excellent teachers in the classroom, but also provide career guidance for teachers' career progression in an education system.

1.2 Research Questions

This study is designed to answer to three main research questions addressing as follows:

- 1) What is the conceptual framework of school teacher career pathway and authentic student achievement?
- 2) What are the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement?
- 3) How will be school teacher career pathway in Cambodia based on the concept of authentic student achievement developed?

1.3 Research Objectives

- 1) To examine the conceptual framework of school teacher career pathway and authentic student achievement.
- 2) To explore the desirable states of school teacher pathway in Cambodia based on authentic student achievement.
- 3) To develop school teacher career pathway in Cambodia based on the concept of authentic student achievement.

1.4 Definition of Terms

The key terms used in this study are specifically defined and contextualized only as follows:

1.4.1 Teacher Career Pathway refers to vertical career progression structured hierarchy of school teachers for their work lifespan extending from entry level to advanced levels in their teaching profession.

1.4.2 Teacher Position refers to three school teacher classifications consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers.

1.4.3 Career Pathway refers to sequence of five professional titles for school teacher career advancement including 1) novice teacher, 2) teacher, 3) senior teacher, 4) distinguished teacher, and 5) master teacher.

1.4.4 Authentic Student Achievement refers to the achievement of student development in intellectual and behavior through teaching and learning process based on assessment standard of authentic student achievement including 1) construction of knowledge, 2) disciplined inquiry, and 3) value beyond school.

1.4.5 Development of Teacher career pathway refers to a process of school teacher career pathway development in 5 phases including 1) emphasize school teacher career pathway and authentic student achievement, 2) define the conceptual framework of research, 3) ideate a wide variety of possible solutions through generating diverse, 4) prototype the school teacher career pathway in Cambodia based on authentic student achievement through survey of desirable states for development of school teacher career pathway, and 5) test the prototype of school teacher career pathway based on authentic student achievement.

1.5 Scope of the Study

The purposes of this research study are to examine the conceptual framework of school teacher career pathway and authentic student achievement, to explore the desirable states of school teacher pathway in Cambodia based on the concept of

authentic student achievement, and to develop school teacher career pathway based on authentic student achievement in Cambodia. The expected research results would correspond to teacher policy action plan (TPAP) in order to attract best candidates into the teaching profession, motivate and retain highly qualified teachers in the classroom to enhance authentic student achievement.

1.5.1 Scope and Limitation of Content

This research study will be conducted with school teachers at pre-school and primary schools, lower and upper secondary schools under the supervision of Ministry of Education, Youth and Sport (MoEYS), Kingdom of Cambodia. In 2013, the MoEYS launched Teacher Policies Action Program (TPAP), aimed at improving the quality of education in Cambodia. As a result, many aspects of establishing school teacher career pathway have been prioritized. This research study will be conducted to examine the conceptual framework of school teacher career pathway and authentic student achievement, to explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, and then to develop school teacher career pathway in Cambodia based authentic student achievement.

1.5.2 Scope and Limitation of Informants

The informants of this study were 491 informants consisting of 40 school administrators and 451 teachers of pre-school and primary schools, lower secondary schools, and upper secondary schools under the supervision of Ministry of Education, Youth and Sport, Kingdom of Cambodia. The purposive sampling technique was used in this study. The informants are school administrators and teachers who are working in the best practice model schools in the academic year 2019-2020 in the kingdom of Cambodia.

1.5.2.3 Scope and Limitation of Time Frame

The research study will have been conducted over a period of August 2018 to August 2020.

1.6 Conceptual Framework

In this study, the concepts and research related to school teacher career pathway, components of career pathway, authentic student achievement, and development of school teacher career pathway have been reviewed as the main idea of the study. Therefore, researcher employs the following steps to define the conceptual framework of the research. Firstly, the documentary has been reviewed to define the mini-structured interview form. Secondly, the mini-in structured interview has been conducted with 30 informants consisting of teachers, school administrators, policy makers, and experts of teacher professional training and human resource management in education. Thirdly, the combination of documentary and results of interview have been analyzed and synthesized to develop the draft of conceptual framework. Finally, the conceptual framework of research has been evaluated by five experts of educational policy makers, human resource management in education, and teacher professional development.

As the results, the conceptual framework of research comprises three main components consisting of 1) school teacher career pathway, 2) authentic student achievement, and 3) development of school teacher career pathway process that describe in detail as follow:

1.6.1 School Teacher Career Pathway

In this study, school teacher career pathway includes five sub components, namely, 1) teacher position consisting of (1) pre-school and primary teachers, (2) lower secondary school teachers, and (3) upper secondary school teachers, 2) career pathway of each position consisting of (1) novice teacher, (2) teacher, (3) senior teacher, (4) distinguished teacher, and (5) master teacher, 3) qualification consisting of (1) educational degree, and (2) teaching license, 4) critical developmental experiences consting of (1) teaching experiences, (2) teacher leadership experiences, (3) research and sharing experiences, and (4) teacher achievement, and 5) competencies consisting of (1) professional knowledge, (2) professional practice, (3) professional development, and (4) professional ethics.

1.6.2 Authentic Student Achievement

In this study, the authentic student achievement defined by Newmann (1996) referring to authentic achievement of student development in intellectual and behavior through teaching and learning process. The authentic student achievement refers to the achievement of student development in intellectual and behavior through teaching and learning process based on assessment standard of authentic student achievement in terms of 1) construction of knowledge consisting of (1) organization and analysis and (2) consideration of alternatives, 2) disciplined inquiry consisting of (1) disciplinary content and concepts, (2) disciplinary process, and (3) elaborated communication, and 3) value beyond school consisting of (1) problem connected to the world beyond the classroom, and (2) audience beyond the school.

1.6.3 Development of School Teacher Career Pathway Process

In this study, the design thinking process has been conducted by Plattner (2010) to design a career pathway consisting of 5 phases including 1) emphasize school teacher career pathway and authentic student achievement, 2) define the conceptual framework of research, 3) ideate a wide variety of possible solutions through generating diverse, 4) prototype the school teacher career pathway in Cambodia based on authentic student achievement through survey of desirable states for development of school teacher career pathway, and 5) test the prototype of school teacher career pathway based on authentic student achievement.

1) Empathize

The first step in the design process is to build up empathy and understanding of stakeholders and the situation of the problem or challenge. The goal is to get a clue of relations between the problem and its context, and to find out hidden needs. The empathy is the competence of recognizing feelings, thoughts, intentions and characteristics of others. The researcher has to fully understand the experience of the users through observation, interaction, interview, and immersing in their experiences.

2) Define

In order to solve a problem and generate meaningful ideas, one has to define the problem and its context. As seen in the phase of understanding, there are different perspectives on one particular problem and a lot of information is generated to describe the problem. The researcher synthesizes the findings from users' point of view and then to define the problem statement through defining the conceptual framework of the research.

3) Ideate

Ideation means opening up the mind, being imaginative and generating lots of ideas for solving the problem. Brainstorming in the team helps to build on the ideas of others and collaboratively transforming the knowledge about the problem and its origins into actionable problem-solving ideas. The researcher explores a wide variety of possible solutions through studying the desirable school teacher career pathway and authentic student achievement and then analyze to define the priority.

4) Prototype

The prototype phase is all about experimentation to bring ideas alive, to make them tangible, actionable, testable. The goal of prototyping is to be able to share ideas with others, to specify your abstract imaginations and to get the mental concept of an idea into the physical world. The researcher makes a conclusion and transforms the ideas into a prototype as the first draft of school teacher career pathway based on authentic student achievement.

5) Test

Testing means bringing the idea, the solution generated through the design process into action in order to get feedback on which to build on. Feedback from stakeholders involved in the problem context. Through testing a lot of information is gathered. However, this information is focused on the solution, and shows how well the problem has been understood. It is important to be able to communicate the idea we want to get feedback on, and to capture and interpret that feedback in order to refine

your idea. Finally, the school teacher career pathway will be tested and evaluated to refine better prototype and best solutions.



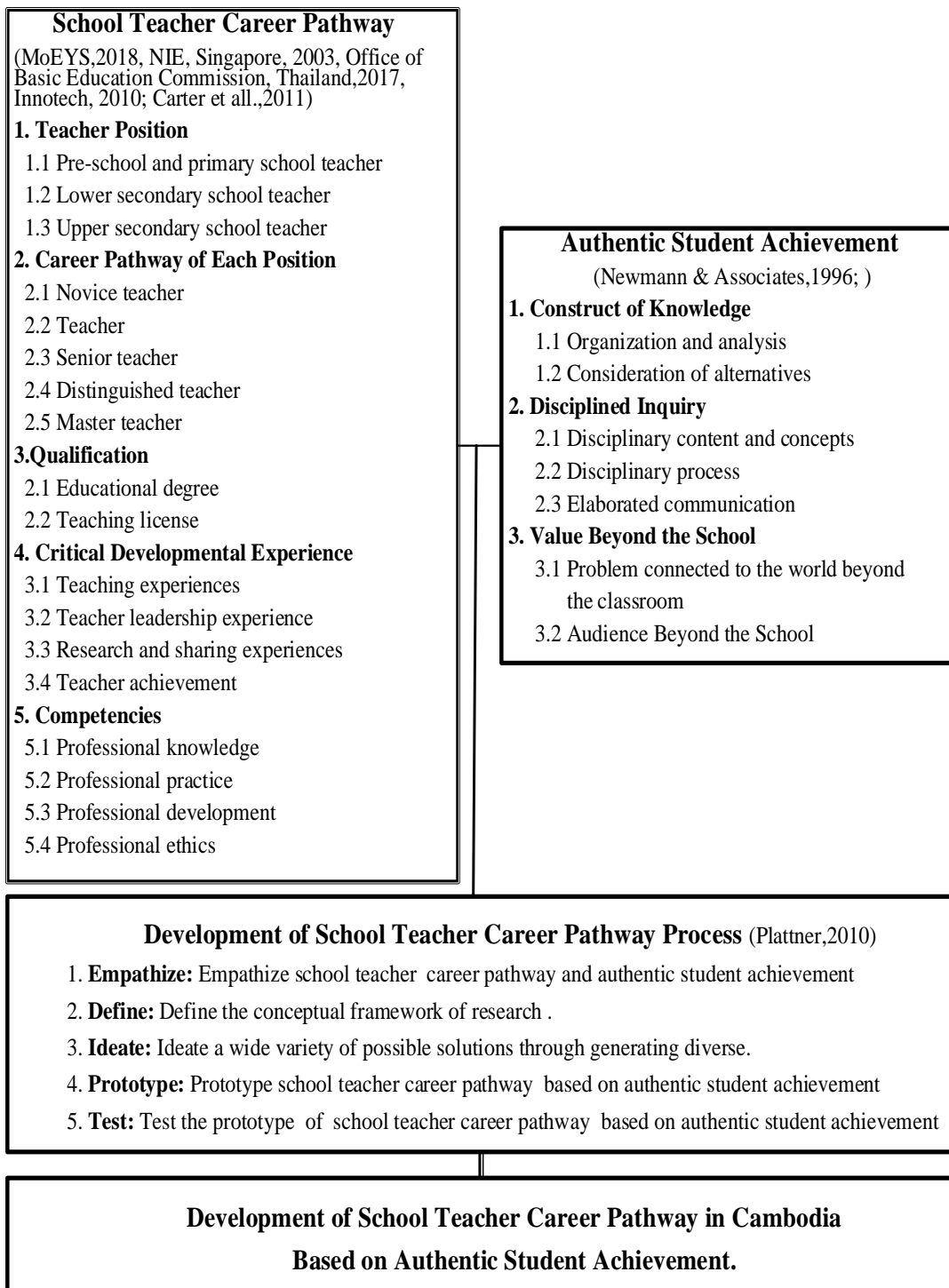


Figure 1 Conceptual Framework of Research

1.7 Significance of the Study

This study aims at developing school teacher career pathway in Cambodia based on the concept of authentic student achievement through examining the concepts and theories concerning about conceptual framework related to school teacher career pathway and authentic student achievement and exploring the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement. The findings of this study will make a few contributions to policy level, organizational level, individual level, and academic level in order to take a part of national development through increasing teacher productivity and quality education enhancement.

Policy Level: It is hoped that the research will inform policymakers and stakeholders on teacher attraction, motivation and retention policy in an education system and also offer valuable guidelines of career advancement for teachers linked to authentic student achievement.

Organizational Level: The educational institutions will be able to retain highly qualified teachers and have adequate teachers in the classrooms, foster a positive teaching and learning environment, align educational personnel efforts with organizational needs throughout providing career advancement opportunities with additional roles and responsibilities, and motivate them to engage their organizations.

Individual Level: The effective teachers will be recognized, motivated, and provided with career advancement opportunities, continuous professional development, and compensation with additional roles and responsibilities in their teaching profession to enhance the authentic student achievement. In addition, teachers may advance their professional career without leaving the classroom for administrative roles.

Academic Level: The result of this research would be academic sources for other researchers, scholars, and educational administrators to take further studies on teacher motivation, development, and retention in an education system.

CHAPTER 2

LITERATURE REVIEW

The literature review is a crucial part to emphasize the conceptual framework of school teacher career pathway and authentic student achievement and to construct research instruments for this study. This may ensure that the expected results of the study would be suitable for attracting talent candidates into their teaching profession, motivating, supporting, and retaining highly qualified teachers in every classroom to enhance the quality of authentic student achievement in Cambodia. This literature review falls into four parts: 1) concepts of teacher career pathway, 2) concepts of authentic student achievement, 3) development of career pathway, and 4) relevant research studies.

2.1 The Concepts of Career Pathway

The concepts of career pathway have been discussed for many years, and has been referred to as workplace career progression for employees overseen by the organization (Walker, 1980). For the last several years, the career pathway has become well-known in the discussion of the broader context of workforce and economic development sectors (Sheely & Board, 2014). This recent popularity is the result of the government's advocacy to design career pathway frameworks requiring collaboration between the colleagues and retaining their talent employees in the organizations. Seeing the significance of career pathway, the organizations have designed career pathway as vertical career progression structured hierarchy of jobs consisting of a series of increasingly related duties and responsibilities within a general occupational area, often with some accompanying "benchmarked timing" (i.e., a well-developed career stage and duration at each position) tied to each rung on the ladder. This career development within an organization would continue until the individual left the organizations for another opportunity, reached a level at which no further promotional opportunities existed, or chose to decline subsequent promotional opportunities, and then retired or was

terminated. Nowadays, career paths encompass varied forms of career movement, including the traditional vertical career ladders, dual career ladders (e.g., technical, and managerial), horizontal career lattices, career progression outside the organization, and encore careers. Although the career pathways framework has had a minor role in organizations over the last decade, a career pathway program makes sense for organizations as a way to support activities like succession planning for specific positions or a group of positions, talent acquisition and retention, and skills attainment and maintenance for staff.

2.1.1 Definition of Career Pathways

There are a variety of definitions of career pathway presented in the research literature and in books in different ways of various perspectives or purposes of users. Here are some definitions of career pathway that are commonly defined as follows:

A career pathway is a sequence of work positions or roles along which a staff may be promoted within an organization as an individual progress in one's career (Walker, 1980). It is a planned logical progression of jobs that may include lateral and vertical movement through a workplace.

Likewise, teacher career pathway is a development of jobs consisting of a series of more complex duties and responsibilities within a general occupational area. It is referred to the vertical movement growth of a school teacher in the teaching position. It is fundamentally referred to the various positions that teacher moves on one by one as he/she can grow. A teacher may move vertically most of the time; however, he/she also moves laterally or cross functionally to move a different type of job tracks (Goldhaber, Gross, & Player, 2011).

Thus, teacher career pathway refers to a systematic, coordinated strategy to recognizing and developing great teachers as they progress through stages. These stages are developed to celebrate excellent teachers and are accompanied by increasing their

competencies, compensation, recognition, and chances for professional growth. (Walter & Pellock, 2004).

Additionally, teacher career pathway refers to the routes that individuals take from their first foray into the teaching profession through their final position before retirement. In general, career pathway starts with the most junior position and end with the most senior position. It can influence the opportunities for the future. Training and development can play a vital role in the opportunities open to people and therefore the way they can carve out their career path, need to be promoted internally to remain with them in the long run (VanVoorhis, Levinson, Ohler, & Hohenshil, 2012).

A teacher career pathway is referred to a set of professional activities for the development of skills and capacities of teachers to enhance and maximize professional growth and promotion in the service (DECS Service Manual, 2000). Thus, school teacher career pathway is a formal process of teacher career advancement within an organization that allows school teachers to advance their current teaching position to higher levels of teaching position with increasing responsibility, authority, and compensation. Once teachers meet certain criteria requirement, they are eligible to move into higher level roles. Generally, teacher career pathway involves understanding what knowledge, skills, personal characteristics, and experiences required for teachers to progress their teaching position careers vertically or through access promotion in an ascending order of complexity, responsibilities, and rewards. In this sense, teacher career path, teacher career pathway, and teacher career ladder are sometimes used interchangeably in the literature.

In conclusion, school teacher career pathway refers to vertical career progression structured hierarchy of school teachers for their work lifespan extending from entry level to advanced levels in their teaching profession that can be categorized into three teacher positions consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers with five career pathway professional titles including novice teacher, teacher, senior teacher, distinguished teacher, and master teacher.

2.1.2 Types of Career Pathway or Career ladder

The goal of career pathways is to structure teachers' work to promote teaching effectiveness and to promote teachers' continuous professional growth. The National Association of State Boards of Education in the United States published a policy update on state-wide teacher career structures in 2002, and suggested that most career ladder initiatives could be placed in one of three categories (as reported by Plucker, Zapf, and McNabb, 2005):

Performance-based ladders: Performance-based ladders are used to structure teachers' work and promote the teaching effectiveness. Teachers progress while they demonstrate their progressed competencies or more complex levels of work. This rewards teachers differentially for perceived differences in their teaching performance at each stage. Among its shortcomings include: 1) it depends entirely on the teacher evaluation process, it is very complicated to design an evaluation process that is sufficiently reliable and credible to work effectively and this makes it unpopular with teachers; 2) it fails to use teacher expertise to make contributions beyond the classroom teaching; 3) it discourages teachers from assisting their co-workers to become more effective as there is some level of competition; (iv) may motivate focus on teaching to the test.

Job-enlargement ladders. Teacher progression in their career is considered as a link to performance to the extent that a teacher has to demonstrate teaching proficiency based on set standards. Promotion takes into consideration on background, skills, and knowledge for developing career pathways. These promote professional growth, provides great opportunities for teachers to advance up in responsibility and compensation while also allowing them to make significant contribution beyond the classroom without having to give up teaching in the classroom. Therefore, outside classroom activities could include curriculum development, supervision, mentoring new teachers or serving as a lead teacher. This creates differentiated roles and responsibilities both inside and outside the classroom for teacher promotion, ensuring

that accomplished teachers can assume positions and responsibilities where they have much to share their profession to school, community, and society.

Professional development ladders. Teachers advance based on more knowledge or skills through credit, teacher professional development activities, advanced degrees, or certification. As teachers advance on their career pathways, they may be required to provide support/mentoring to less experienced teachers. This puts less pressure on the evaluation process, and it is easier to get agreement about the positive correlation between staff development and teaching performance. This however has limited utility for improving teacher talent in instructional practices. It tends to promote incentives for teachers to acquire more academic qualifications, but at the neglect of their teaching duties.

Table 1 Types Career Pathway

Types of Career pathways	Definition	Advantages	Disadvantages
Performance-based features	Career pathways with this feature include some kind of teacher evaluation, on which promotion or salary progression is based.	Links performance to pay, which can be motivating for good teachers and attract people to the profession.	- It can be a struggle to get this implemented if teachers are on an existing contract that guarantees regular pay rises. - If designed badly, this feature can lead to controlled motivation and bad feeling among staff.
Professional development features	Career pathways with this feature require staff to undertake certain training or professional development in order to be promoted.	This ensures staff are continually learning throughout their career, and allows the system to require certain knowledge or skills for certain roles	- The usefulness of this approach depends on the quality of the training, and whether the learning is evaluated. - Without follow up,

Types of Career pathways	Definition	Advantages	Disadvantages
			teachers can see attendance as a box-ticking exercise. - Training by itself is not enough to ensure quality. Some courses predict higher student results, some have no effect.
Job enlargement features	Career pathways with this feature attach new roles or responsibilities to teachers' promotions, such as mentoring less experienced teachers or leading a planning team.	This encourages better teachers to take responsibility for the improvement of weaker teachers, or for the improvement of the school.	Depending on the type of responsibilities given, there might not be enough of these roles available for all the teachers that have met the criteria for promotion.

A combination of the above three types of career pathways can also be used in order to provide a more comprehensive framework. This would incorporate the strong features of all the other three types. For example, a career pathways plan could allow for advancement to higher levels by demonstrating increasingly higher levels of performance (performance based approach), providing leadership inside and or outside their classrooms as mentors (job-enlargement), coaches, and professional development trainers (professional development). This would optimize the best features of each while avoiding the negatives associated with reliance on a single approach. This option also has an advantage in that it would reward excellent teaching; may be more acceptable to teachers if differential pay is for different responsibilities rather than for different performance of the same responsibilities; provides opportunities for teacher to contribute beyond the classroom without giving up teaching.

These three basic career pathways types can also be classified according to the career tracks they open up. Classroom teacher focused career pathways aim to establish as fairly enclosed progression system that rewards and retains teachers in the classroom by offering rewards and promotions. This type does not usually preclude transfer to other tracks such as school administration.

Multi-track education career pathways usually cover the education sector as a whole and allow movement and progression within teaching as well as opportunities to transfer to school administrative ranks and related positions within the broader education sector. A two-track career pathways provides options for movement from classroom teaching to school administration with the latter as the goal of professional progression.

2.1.3 Characteristics and Components of Career Pathway

2.1.3.1 The Characteristics of Career Pathway

The defining characteristic of career pathways and their use in organizations are a clear focus movement of individuals over time. [Carter, Cook, and Dorsey \(2011\)](#) determined the characteristics of career path as five career path qualities including movement, mobility, formality, expertise, and connectivity.

Movement (Vertical-Horizontal). The level to which movement within a career path is characterized by vertical or horizontal moves (e.g., linear, wheel patterns).

Mobility (Mobile-Embedded). The level to which a path naturally promotes job or position change.

Formality (Formal-Informal). The degree to which career paths are made explicit.

Expertise (Broad-Narrow): The degree to which specialized expertise is needed; variance in terms of breadth versus depth of expertise.

Connectivity (Isolated-connected): The degree to which a career path intersects with closely related paths or occupations. Moreover, [Carter et al. \(2011\)](#), added career path pattern to explore the movement among career path and how these attributes describe career paths, consider the following generic career path patterns, which we label the specialist, generalist, and entrepreneur.

Special Pattern: The specialist pattern is representative of careers involving connection to a particular occupational field, often involving specialized education, knowledge and skills, and/or credentials that tie an individual to the field paths following this model might be characterized by relatively vertical moves.

Generalist Pattern: The generalist career path pattern might be characterized by a large number of back-and-forth horizontal moves, allowing the individual to build a basic foundation of knowledge, skills, and expertise. Think of a salesperson selling various products in various organizations, trying to find the “right” opportunity.

Entrepreneur Pattern: The entrepreneur might be denoted by frequent movement, diverse expertise depending on the domain of their own interest.

Similarly, [Burack and Mathys \(1980\)](#) showed that three career pathway may be found in modern organizations: (1) traditional career pathways, (2) cluster career pathways, and (3) Career lattice/Network career pathways.

Traditional Career pathways: The traditional career pathways is based on a hierarchy of specialized career within functional departments of an organization. Based on historical paths of job progression, job holders progress upward in their functional department.

Cluster Career pathways: The cluster career pathways is similar to traditional career pathways, but the career progression paths are based on jobs hierarchal ordered within a job family. The job family approach to career progression allows people to

progress across functional departments but limits their career paths to jobs within a job family.

Career lattice or Network Career pathways: the career lattice or network career pathways can be an extension of the traditional and cluster career pathway and based on the idea that some abilities and skills required by jobs within one job family may be transferable a job in other job families. By identifying the ability and skill requirements relevant to a number of job families.

2.1.3.2 The Components of Career Pathway

Carter et al. (2011) examined the components of career paths consisting of five fundamental components:

Sequential List of Positions or Roles: Frequently, the sequence of positions is shown in a boxes and arrows format, but a variety of visual formats can be used. Generally, a brief description of each position or role is also provided.

Qualifications: The education, training, experience, licensure, and certification requirements which is required at each career stage.

Critical Developmental Experiences: These experiences related to each node or each career stage along the path and may include formal training courses or specific stretch assignments to prepare a person for the next position, and on-the-job experiences.

Competencies: The competencies are required at each node, at each career stage, or through each critical developmental experience. Different competencies are important at different career stages, and different levels of the same competency are required at different career stages.

Career Success Factor: Information about the sponsoring organization's perspective on, and management of, career success factors that are viewed as being of key significance. This may include, for example, the vitality of depth versus breadth of expertise to career success, the importance of international assignments, the level of

mobility that is desirable for the individual in a specific career and for the organization, and the type and patterns of movement that tend to lead to long - term career success (e.g., whether horizontal moves tend to lead to more promotion opportunities in the long run).

2.1.5 Teacher Policies in Some Countries

The policies in high-performing countries show the diverse approaches to teacher leadership roles and career paths. It is remarkable that some systems have more defined career pathways, such as Singapore, Shanghai, and Australia. In others, there are less defined career ladders as these countries/provinces seek to engage all teachers in more universally embedded systems of teacher collaboration, action research and sharing of practice (Finland, Canada, and Japan). What appears to be universal in all these countries is that teachers generally come from the top of their graduation cohort and that the teaching profession is conferred with high status and often high pay. Therefore, many countries set the policies on attracting the “best and the brightest” into teaching as a national priority.

In Singapore

Recruitment and training: Teachers in Singapore are recruited from the top outstanding third of high school graduates, with only one of eight applicants accepted for admission to the only teacher training institute in Singapore (the National Institute of Education (NIE), located in the Nanyang Technological University, one of the most prestigious institutions of higher education.

Career advancement: A teaching career can take the following teaching tracks: the teaching track which can lead to becoming Principal Master Teachers in teaching pathway, the leadership track leading to a formal leadership position in the school in leadership pathway (the highest being Director-General of Education), and the specialist track focused on research and teaching policy (Chief Specialist). Singapore has alternative choices with new performance management system with a clearly defined,

comprehensive teacher competency model designed to attain work-related goals, meet teachers to a career pathway, and determine the high annual bonuses for teachers.

In Shanghai

Recruitment and training: Teacher recruitments are not standardized across China; some areas have different policies but is often competitive in urban areas. Teachers may be educated in special upper secondary schools (for pre-school and primary positions), normal colleges (equivalent to junior colleges), and normal universities in a four-year bachelor's degree program that offers to candidates to becoming teachers. It is necessary for teachers must pass the National Mandarin Language Test, and those who do not graduate from a university must also pass four examinations in the areas of pedagogy, psychology, teaching methods and teaching ability. The requirement for primary school teachers in Shanghai must hold post-secondary subject degree diplomas; secondary school teachers must hold a bachelor's degree plus a professional certificate.

Career advancement: There are multiple levels of leadership, including the principal and party secretary, three directors, and teaching and research groups. These include teachers of the same subject and grade level who are led by master teachers. These groups have meeting together for up to two hours each week to plan lessons and examine student progress. Professional learning community for teaching and research groups is led by senior or master teachers and is designed to support junior teachers and improve overall instruction in the schools.

In Finland

Recruitment and training: Teaching is regarded as Finland's most respected profession. The Finnish teacher education programs which offers in Finland are extremely selective, admitting only one of every ten students who apply. Upgrading the quality education, all teachers must now hold a master's degree.

Career advancement: It was remarkable that Finland does not have specific leadership roles for teachers; rather, teachers are provided with significant autonomy with respect to how they approach curriculum design and instruction. This professional autonomy and high degree of trust makes teaching a very attractive job, with 90% of trained teachers remaining in the profession for the duration of their careers. The effective way for teacher appraisal, there are no formal teacher evaluations with the focus instead on self-evaluation. There is neither performance pay nor bonuses.

In South Korea

Recruitment and training: It is widely recognized that professional teaching is a highly respected career with good working conditions (a high degree of collaboration among teachers), including competitive pay and job stability. It is highly regulated at the elementary level, with the country's 11 teachers' colleges being relatively selective. At the secondary level, there can be multiple pathways to certification including attendance at a comprehensive university, with selection occurring at the hiring phase. As a result, there would be a shortage of elementary teachers and only 30% of secondary candidates can find jobs. All teachers must pass an employment test administered by the Metropolitan and Provisional Offices of Education to be hired.

Career advancement: South Korea piloted the program to institutionalize a master teacher system in 2008. Master teachers must have 10-15 years of experience. They retain in a teaching role in the classroom but are expected to participate in sharing their expertise with less experienced colleagues within schools as well as develop curriculum, instructional practices, and evaluation systems. They receive a small monthly stipend for these roles.

In Canada

Recruitment and training: The recruitment of candidates is from high quality students into teaching, with the majority drawn from the top 30% of their college cohorts. Ontario requires a minimum three-year postsecondary degree from an acceptable post-secondary institution plus one year of teacher education before one can teach. Teachers must apply to the Ontario College of Teaching (OCT), an autonomous licensing body for the province of Ontario. Currently, there is an oversupply of teachers in Ontario, enabling districts to be selective in hiring.

Career advancement: Teachers apply for “additional qualification” in order to allow the career teacher to pursue different career options and specialist positions, including supervisory or leadership positions. The OCT recently implemented a professional designation for teachers called the “Ontario Certified Teacher.” Designed as a symbol of respect for the role of teachers versus other educational roles, it is available for all teachers in good standing.

In Japan

Recruitment and training: Teaching profession in Japan is a highly respected profession, and the system is highly selective at both the admission and hiring stages. Only 14% of applicants are accepted into preparation programs, and only 30-40% are hired in public schools. Teachers must pass a National Entrance Examination to be admitted to an undergraduate program. A teacher's certification depends on the amount of education a teacher has when graduating. Most teachers hold a bachelor's degree. Teachers undergo a one-year induction program before becoming a full-teacher.

Career Advancement: The movement of teachers in Japan may move from teacher in the classroom to head teacher and then to school principal. There are multiple salary grades within based on performance and experience. Japan is known for its “lesson study” system in which groups of teachers meet to learn informally from their

colleagues and exercise significant professional autonomy over the delivery of instruction.

In Australia

Recruitment and training: Each state or territory has jurisdiction on how teachers are recruited, trained, and certified, although all require a bachelor's degree. Recruiting and retaining highly qualified teachers is a priority of the Department of Education, Employment and Workplace Relations (DEEWR), as a result of concerns over teacher shortages.

Career Advancement: Although there are no specified career paths in Australia, teachers typically have access to a career structure that involves two to four stages, with annual salary increments associated with each stage. These stages range from beginning teachers to experienced teacher, lead teacher, or learning area/grade-level co-ordinator. By the "lead teacher stage," teachers are expected to demonstrate exemplary teaching, educational leadership, and the ability to initiate and manage change.

In Thailand

Recruitment and training: As the Ministry of Education reform in 2003, teaching profession has become a high-valued profession. Ever since, teaching profession has more career path advancement and earned high-rated salary which make teaching profession has more popular in Thai society. As a result, many students in various fields of studies are keen for being teachers. While regulations and procedures of teacher recruitment have given a great opportunity for those who graduated from particular fields of studies that met all qualifications of recruitment procedure which based on three factors including new public management, ministry of education policies, and implementation. Recruitment procedure of being teachers in Thailand, applicants must pass one of two recruitment procedures, qualifying examination, and selection. With current policies on teacher professional development, a teacher is offered 10,000 baths to develop their professions for a year.

Career Advancement: Teachers can move from entry level to the highest level through six stages including assistant teacher, teacher, professional teacher, senior professional teacher, expert teacher, and senior expert teacher based on their performance in three aspects of 1) teaching pedagogy, 2) classroom management, and 3) self-development and professional development.

In Cambodia

Recruitment and Training: Teachers in the kingdom of Cambodia are recruited from high school in grade 12 graduates for kindergarten, primary and lower secondary school teachers, and graduates from university with bachelor's degree for upper secondary teachers. The applicants who pass the writing examination will take courses of teaching pedagogies and specific subject matters for two years at teacher training center to become kindergarten, primary and lower secondary school teachers. Otherwise, the applicants with bachelor's degree who pass the writing examination will take courses of teaching pedagogies and specific subject matters for a year at the national institute of education to become upper secondary school teachers. With professional development, teacher training department of ministry of education, youth and sport, is responsible for organizing the program design for teacher training in the job training and off the job training.

Career Advancement: In recently, Ministry of Education, Youth and Sport has just approved to launch the teacher career pathways. Teachers can move from entry level to the highest level through five stages including new teacher, teacher, senior teacher, leading teacher, and master teacher.

2.1.6 Teacher Career Pathway in Some Countries

In response to the development of teacher career pathway in Cambodia, the researcher will review the career pathway for teachers in three countries including Singapore, Thailand, and Cambodia.

Teacher Career Pathway in Singapore

Teacher status is reasonably high in Singapore. An indicator of the social status of teachers in Singapore is reflected in the results of a survey by Adecco (2012) that revealed that children held being a teacher to be their top career choice, followed by becoming a doctor, pilot or flight attendant. A significant majority (88%) of teachers in Singapore are satisfied with their career as teachers while almost 70% of teachers believe that the teaching profession is valued in Singapore (OECD, 2014).

Teachers are recruited from the top third of high school graduates, with only one of eight applicants accepted for admission to the only teacher training institute in Singapore (the National Institute of Education [NIE], located in the Nanyang Technological University, one of the most prestigious institutions of higher education). In 2001, to help teachers reach their fullest potential, Singapore designed and launched the Education Service Professional Development and Career Plan (Edu-Pac), a career and recognition system which consists of three components: 1) a career pathway or framework for career advancement; 2) a recognition and financial compensation system; and 3) and an appraisal system.

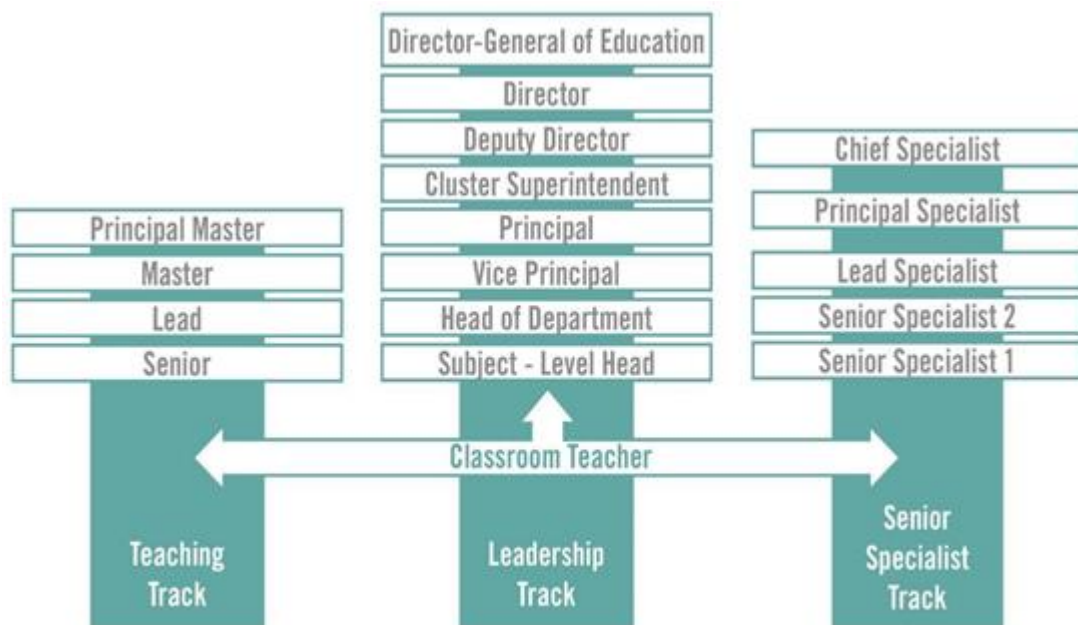
1. Career advancement structure

The Ministry of Education Singapore has three career tracks or fields of excellence for teachers (Ministry of Education Singapore, 2014e) as follows:

Teaching Track: The teaching track is designed for teachers who aspire to become expert teachers and remain within classrooms. Teachers are provided with professional development and advancement opportunities. This track for teachers supports teachers who want to continue to develop their pedagogical capability. The pinnacle position for this track is the Principal Master Teacher.

Leadership Track: Teachers who wish to serve in leadership roles to support the education system are given opportunities to take on leadership positions in schools or leadership roles in the Ministry of Education.

Senior Specialist Track: Teachers who wish to develop deep knowledge and skills in specific disciplines, which can bring them to Ministry level leadership positions focused on curriculum development and evaluation could join this track.



Source: National Institute of Education, 2009

Figure 2 Teacher career pathway in Singapore

2. The Expected Competency Levels of Teacher Professional Growth

Each level has a range of coordinated experiences and training to prepare future leaders for roles with greater responsibility. Moreover, teachers can move between tracks, so long as they meet the requisite requirements. With career advancement, a teaching career can take the following tracks which can lead to becoming Principal Master Teachers. Teachers with more expertise mentor those with less expertise, or Senior, Lead, and Master Teachers mentor all new teachers. The highest levels within the Teaching Track serve to groom a core group of experts who then further develop the profession's capacity:

Senior Teachers: Senior Teachers serve as role models to raise the professional excellence and expertise within schools.

Lead Teachers: Lead Teachers support a culture of teaching excellence and collaborative professionalism through their rich subject knowledge and pedagogical skills. In partnership with school leaders, they build capacity of Senior Teachers and Teachers in content, pedagogy, and assessment, and develop their schools into strong Professional Learning Communities; they also share their subject expertise with teachers in other schools within their cluster to strengthen the teaching profession.

Master Teachers: Master Teachers are “teachers of teachers” who mentor other teachers so they reach professional excellence and are highly effective; they drive new pedagogies to improve instructional practice school-wide, champion their subject discipline, and lead curriculum innovation. Though much of their work is attached to the Ministry, their responsibilities include teaching master classes, leading professional development, driving curricular innovation, and engaging in pedagogical research.

Principal Master Teachers: Principal Master Teachers are the chief pedagogical experts for their subjects—at the national level—and lead the drive toward teaching excellence across the education system similar to Master Teachers, Principals Master Teachers are responsible for teaching master-classes, leading their colleagues’ professional development, driving curricular innovation, and leading pedagogical research and innovation.

3. The Appraisal and Development System

Teachers are regularly assessed, and advancement from one level to the next requires a teacher or school leader to demonstrate competency at that level and potential for the next, since forward movement along each track requires deepening levels of expertise and experience within specific domains. During summative evaluations, teachers meet with their school leader to discuss whether they met their annual goals and their “current estimated potential” (CEP), which influences movement along the career ladder.

Teacher performance is measured by the Enhanced Performance Management System (EPMS), and teachers are not automatically promoted to the next level on the career track. A part of Edu-Pac, EPMS is a tool used by the government to support teachers, and helps teachers chart their development along the different leadership tracks and set measurable benchmarks levels. It is a holistic appraisal system that supports self-evaluation, coaching and mentorship, and performance-linked recognition through formative and summative evaluations. It also specifies what professional competencies teachers will be evaluated on through three Key Result Areas (KRAs), which are used to set targets and review progress and achievements:

- 1) Holistic student development (quality learning of students, character development of students, and co-curricular activities);
- 2) Professional development (development of self, and coaching and development of others); and
- 3) Organizational outcomes (contributions to school, committee work, and nation; and collaboration with parents).

The knowledge and skills expected of a teacher complements the KRAs and they are:

Knowledge:

Teaching Area: The content and curriculum knowledge that teachers must know to teach in the classroom
 o Psychology – the knowledge of child development that teachers must know to maximize pupil potential.

Developments in the field of education: The knowledge in other areas of education that mold a complete educator
 o Education Policies – the rationale and the philosophy that sets the direction and focus for teachers to carry out their tasks.

Skills:

Teaching Pedagogy: the pedagogic techniques and approaches that teachers must practice to teach in the classroom. Teachers are assessed based on their competencies which capture the “how” of performance. There are 4 points on the rating scale, ranging from ‘Not Observed’, ‘Developing’ to ‘Competent’ and ‘Exceeding’. According to the EPMS Dictionary, competencies are “the underlying characteristics that are proven to drive outstanding performance in a specific job and are the personal attributes and behaviors that lead to longer-term achievement and success”.

There is a set of 13 competencies in the Teaching Competency Model which teachers can use to identify their strengths and weaknesses as areas of continuous learning and professional growth. Teachers are assessed on 9 of the 13 competencies – Nurturing the Whole Child and the competencies related to Cultivating Knowledge, Winning Hearts and Minds and Working with Others. The remaining 4 competencies related to ‘Knowing Self and Others’ are not used for assessment purposes but are considered as emotional intelligence competencies important for self-development.

Behavioral indicators provide clarity on what competencies should be observed to achieve the KRAs. In addition to determining performance, evaluation results help determine teachers' choice of career track, professional development needs, promotion, and bonus compensation.

The EPMS process involves performance planning, performance coaching, and performance evaluation. Various platforms and programs exist at the school, cluster, and zonal level to help experienced teachers continue to develop. For example, Senior, Lead, and Master Teachers attend the Teacher Leaders Program, an integrated series of three programs designed to strengthen teacher leadership and professional ethos,

deepen skills and knowledge, and reflect expected scope of influence—providing supports that are specific to their career stage and which help them progress forward in their career.

The Ministry of Education also continues to grow professional networks so master teacher, lead teacher, and senior teachers can work with specialists from the Ministry and the National Institute of Education (NIE) to deepen the curriculum knowledge and pedagogical skills of teachers, as well as to provide opportunities for teachers to share, collaborate, and co-create more effective ways of teaching. These professional networks include subject chapters, professional networks, professional focus groups, and professional learning communities (PLC). Moreover, the Academy of Singapore Teachers (AST), re-conceptualized in 2009 from the Teacher's Network, leads the professional development of teachers and champions teacher capacity-building. The mission of AST is “building a teacher-led culture of professional excellence centered on the holistic development of the child” (AST, 2012).

Programs and initiatives supporting teacher development aim to help teachers achieve the five desired Teacher Outcomes of the Teacher Growth Model (TGM). Developed as a learning framework to support professional development planning, the TGM Learning Continuum is a comprehensive and coherent approach highlighting the core learning areas of holistic professional growth and development for teachers, while also assisting teachers to take ownership of their growth and help students develop 21st century competencies. Five Teacher Outcomes comprise the TGM Learning Continuum: the Ethical Educator, the Competent Professional, the Collaborative Learner, the Transformational Leader, and the Community Builder. The skills and competencies are described for each of the five Teacher Outcomes so teachers can benchmark and plan for their growth, as they aim to achieve these Outcomes

4. The Compensation and Recognition System

Salary increases, additional training, and mentorship opportunities occur at every level on the career ladder. Teachers receive annual raises for the first three years of teaching, but after the third year, raises are based on advancing forward along the career track. Performance grades on the annual appraisal is linked to financial compensation (e.g., salary adjustments) and non-monetary means (e.g., recognition and awards). Teachers rated “A” get a bonus of up to 3.25 months’ salary, whereas “C” rated teachers receive roughly 1.5-month salary and “E” rated teachers are put on a performance review for 6-9 months.

The TEACH Framework represents the commitment from the Ministry to support teachers as they develop throughout their career and reward teachers with greater career options, professional development, and more flexibility in managing their careers. Launched by the Ministry of Education, the GROW 2.0 package for the professional and personal Growth of Education Officers, through better Recognition, Opportunities, and seeing to their Well-being (GROW) aims to develop teachers holistically and comprehensively professionally and personally. In addition, the CONNECT Plan (CONtiNuity, Experience and Commitment in Teaching), an aspect of GROW, encourages teachers to remain in service until retirement through financial incentives.

The standards for forward movement

The Teaching Competency Model helps teachers identify their strengths and weaknesses so they perform consistently, and of its 13 competencies, 9 performance-related competencies are used to assess teachers (the Core competency and all of those under Cultivating Knowledge, Winning Hearts & minds, and Working with others).

Competencies listed under Knowing Self and others are not used for assessment purposes, but rather to nurture self-reflection amongst teachers, given the importance placed on self-development and emotional intelligence. For each competency, there are five levels (levels 1 to 5) with corresponding behavior indicators, and each level represents increasing degrees of expertise, knowledge, and sphere of influence. Teachers at higher stages in their career are expected to perform at high levels (e.g., Master teachers are expected to perform at levels 4 or 5). Teachers are rated on a 4 point scale, from “not observed” to “developing,” “competent,” and “exceeding” on the competencies. Afterward, they review their progress and discuss their future goals with their direct supervisors.

An important core competency in the teaching track is the ability of teachers to ‘nurture the whole child’. Teachers are rated on increasing levels of ability to nurture their students holistically as shown below.

Level 1: Shares values Shares values with the child through advice, feedback, and discussions, with the intent to nurture the whole child.

Level 2: Takes actions to see the possibilities in each child and takes appropriate actions to convince him of values and improve his self-confidence.

Level 3: Strives for the best possible provision (Senior Teacher) Acts consistently in the interest of the child and persists in working for the best possible outcomes.

Level 4: Encourages others to act in the best interest of the child (Master Teacher). Teachers encourages others in the school community to participate in the educational process to realize the child’s full potential.

Level 5: Influence policies, program, and procedures (Master Teacher level 2) Takes an active role in initiatives that influence policies, program and procedures in line with Nurturing the Whole Child.

Teachers at higher stages of their career are expected to perform at higher levels, for example, a master teacher is expected to perform at levels 4 or 5 whereas a senior teacher is expected to perform at level 3. This shows behavioral indicators for a senior teacher and a master teacher for the core competency of nurturing the whole child.

Level 1: Has knowledge in subject area and awareness of educational issues (Classroom Teacher GEO1/2) Shows keen interest in own subject area and related educational issues within subject area.

Level 2: Keeps abreast with trends and developments in own subject area (Classroom Teacher GEO) Takes initiative to stay current and expand content knowledge in own subject area.

Level 3: Strives for the best possible provision (Senior Teachers) Acts consistently in the interest of the child and persists in working for the best possible outcomes.

Behavior Indicators: Seeks out opportunities to stretch the students' abilities and maximize their potential willing to do what is necessary to help students overcome challenges. Working in partnership with parents, relevant individual or authorities in the interest of students.

Level 4: Encourages others to act in the best interest of the child (Master Teacher level 1) Encourages others in the school community to participate in the educational process to realize the child's full potential.

Behavior Indicators: Gathers support of colleagues to support student to achieve potential Conducts workshops or sharing sessions with stakeholders to inspire further development of students Conducts studies to determine students' interests and abilities and seeks to implement practices that benefit students' development. Leads others in the planning and implementation of projects that will benefit the students holistically.

Subject Mastery is one competency under 'Cultivating Knowledge' and is defined as "the drive to find out more and stay abreast of developments in one's field of excellence". The levels and behavior indicators for subject mastery are:

Level 3: Applies knowledge of trends and developments into lessons (Senior Teacher) Uses knowledge of trends and developments in own subject area in lessons. Makes systematic effort over a period of time to obtain needed feedback or data to ensure effectiveness and relevance.

Level 4: Develops innovative approaches (Master Teacher level 1) Demonstrates deep understanding of current or new approaches to the future needs of the education system. Develops approaches that could impact the education system.

Behavior Indicators: Uses tested approaches and strategies in subject area and introduces them to other colleagues at school/cluster level, develops new and creative strategies to deliver Lessons, designs an integrated curriculum and/or initiates a pedagogical approach to meet the future needs of education

Level 5: Provides thought leadership (Master Teacher level 2) Explores and pushes the horizon in the one's subject area/teaching field.

Teacher career pathway in Thailand

1. The Career Advancement Structure

Government teacher and educational personnel Act, 2004 stated in Article 39 of chapter 3 that government teachers and educational personnel were accredited as four academic standing positions: 1) professional position, 2) senior professional position, 3) expert position, and 4) senior expert position for teachers, administrators of educational institution, educational administrators, and educational supervisors.

Teachers: Teachers were accredited as four academic standing positions: 1) professional teacher, 2) senior professional teacher, 3) expert teacher, and 4) senior expert teachers.

Administrators of Educational Institution: Administrators of Educational Institution were accredited as 1) Professional Deputy Director; 2) Senior Professional Deputy Director; 3) Expert Deputy Director; 4) Professional Director; 5) Senior Professional Director; 6) Expert Director; and 7) Senior Expert Director.

Educational Administrators: Educational administrators were accredited as 1) Senior Professional Deputy Director of the Office of Education service area; 2) Expert Deputy Director of the Office of Education service area; 3) Expert Director of the Office of Education service area; and 4) Senior Director of the Office of Education service area.

Educational Supervisors: Educational supervisors were accredited as 1) Professional Educational Supervisors; 2) Senior Professional Educational Supervisors;

3) Expert Educational Supervisors; and 4) Senior Expert Educational Supervisors (Tamronglak, 2013).

2. Expected Competency levels of Teacher Professional Growth

In the past, teaching profession was not popular in well-educated and knowledgeable people, as in their perceptions; it was a difficult, high responsibility, and low-paid job. However, as the ministry of education reform in 2003, teaching profession has become a high-valued profession, which has been reserved for persons who attain a teaching license. Even since, teaching profession has more career path advancement and earned high-rated salary which make teaching profession and higher education in the field of education has become more popular in Thai society. In the government teacher and educational personnel Act, 2004, teachers were accredited as four academic standing positions: 1) professional teacher, 2) senior professional teacher, 3) expert teacher, and 4) senior expert teacher, in which the competencies and responsibilities of teachers have been increasing from one level to higher level.

A teacher with academic standing position has to have comprehensive understanding and skills of three domains including instructional management, classroom management, and self- development and professional development.

1. Instructional Management Domain

Instructional management refers to manipulate and or develop curriculum for learner development in all respects - morality, wisdom, happiness, and potentiality for further education and livelihood accordance with learning standard, indicators, key competencies, and desired characteristics following the instructional curriculum with various activities, approaches, models, and appropriate to student center based on active learning.

1.1 Curriculum Construction and /Development: Curriculum construction and or development refers to construct and or develop curriculum by subject that a teacher is responsible, with analyzing learning standard and indicators for managing subject description, learning unit, and evaluating the responsiveness of learning standards and indicators or learning outcome.

1.2 Learning management: Learning management refers to organizing activities for learner development in aspects of knowledge, skills, characteristics accordance with learning standards, indicators, key competencies, and desired characteristics of learners based on active learning, motivating learners enable to develop their fullest potentials regarding the variety of individuals.

1.2.1 Learning unit design: Learning unit design refers to organizing and or unit development in responsive to subject description, nature of subject matter appropriate with learner, school and local contexts, based on active learning, selecting learning activities approaches, teaching materials, innovation, technologies, learning resources, and measure and evaluation for student fullest potential learning improvement in line with learning standards, and learning unit evaluation.

1.2.2 Learning unit plan/ Individualized Education Program (IEP)/

Individualized Implementation Plan (IIP)/ Experience plan: Learning unit plan refers to identifying guidance for learning management by learning unit, preparing teaching plan or organizing systematic and written learning activities in advance. Individualized education program refers to analyzing special education need or rehabilitating individuals inclusive parents, teachers, administrators, and multi-occupations to identify guidance for learning management in responsive to individualized learner special education need, teaching materials, facilities, services, and systematic and written special education help beyond. Individualized implementation plan refers to identifying guidance for learning management or rehabilitation, teaching preparation, or organizing learning activities or systematic and written rehabilitation in advance according to various individuals. Experience management plan: Experience

management plan refers to identifying experience guidance for promoting balanced development in four aspects of physical, emotional, mind, social, and intelligence passed by funny learning activities that are appreciated with ages and various individuals.

1.2.3 Learning management strategy: Learning management strategy refers to methods of smart learning management using tools, models, techniques, and variety of variously effective methods in line with learning standards.

1.2.4 Quality of learner: Quality of learning refers to results of learning activities management that enables learners construct knowledge, skills, attitude, learning standards, and indicators of each subject with key competency and desired characteristics in responsive to curriculum standard.

1.3 Producing and developing educational technology, teaching material, and media innovation and learning resources. It refers to select, seek, implement, construct, and develop teaching media, innovation, educational technology, and learning resources for implementing learning management that matches to learner and learning standard contents, indicators, and the purposes of learning.

1.4 Learning measure and Evaluation: Learning measure and evaluation refers to the process of informational communication sources in the results of learning management for adapting, developing, judging the results of learning, advancement, and development of learners that reflects to quality of learners using variety of methods, evaluation instruments, appropriation and response to learning standards, indicators, and the purposes of learning.

1.5 Research for learning development: It refers to process of problem solving or systematic learning management development that has impact on quality of learners' full potential development.

2. Classroom Management Domain: Classroom management refers to activities management facilitating, learning atmosphere, and environment that promote, support, and help learners articulate the learning process with happiness and motivators,

guidance for learners to inquiry knowledge, critical thinking, implement, and search answers by themselves.

2.1 Classroom management: Classroom management refers to managing learning environment and classroom environment that promotes and facilitates learning, fosters learners to interest in self-learning, discipline, systematic thinking process, life skills, working skills, morality, ethics, desired characteristics, good valued, and instilling democratic constitutional monarchy, inspiring learners to confidence in self-directed learning and develop their fullest potentials with safety and happiness.

2.2 Learner care system management: Learner care system management refers to the process of system to take care of learners systematically through gathering data to analysis, synthesis, implement, and use learners' information, make project and creative activities with various methods to promote, protect, and individualized learner's issues.

2.3 Information data base and classroom or subject files: It refers to process of gathering data of learners in all aspects through data analysis, systematically synthesis, accurate and update data to promote and develop learners in the classroom or responsible subject matter.

3. Self-Development and Professional Development: Self-development and professional development refers to the process of teacher competencies and professional development, self-assessment plan and make process of self-development systematically accordance with need assessment of state of teacher performance, new body of knowledge, policy, strategic plan of institutional units or under supervision that they can share with learning at institutional levels or network level or national level, and play a role of professional learning community (PLC) in friendship relation, envision, values, shared goals and mission that effects to the quality of learners for organizational culture and professional learning community innovation.

3.1 Self-development: Self-development refers to the process of individualized teacher competency development, self-development plan and systematically and

continuously process by plan, matching to the state of their performance and need, new body of knowledge or following policy or strategic plan of institutional unit or under supervision offices, bring these knowledge, competencies and skills to develop themselves and develop for innovation to the quality of learners.

3.2 Professional development: Professional development refers to the process of teacher professional development, participating sharing knowledge at institutional level or network level, or national level, and play a role of professional learning community (PLC) in friendship relation, envision, values, shared goals and mission for organizational culture and professional learning community innovation, and bring those knowledge, competencies, and skills to develop their learning management innovation.

Professional Teacher: A professional teacher is able to analysis and prepare curriculum, assess instructional process, use teaching materials, media, and innovation, take the result finding of the instructional issues to solve or develop better.

Senior Professional Teachers: A senior professional teacher is able to analysis and prepare curriculum, assess instructional process, use teaching materials, media, and innovation, adjust and apply, and share learning with others, take the result finding of the instructional issues to solve or develop better, and serve as a mentor.

Expert Teacher: An expert teacher is able to analysis and prepare curriculum, assess instructional process, use teaching materials, media, and innovation, use research process, take the result finding of the instructional issues to solve or develop better, and serve as a mentor, consultant, and good model.

Senior Expert Teacher: A senior expert teacher is able to analysis and prepare curriculum, assess instructional process, use teaching materials, media, and innovation, research and develop new body of knowledge, take the result finding of the instructional issues to solve or develop better, and serve as a mentor, consultant, good model, and educational leader.

3. The Appraisal and Development System

The assessment of academic standing promotion for government teachers and educational personnel was first introduced in 2004. The Teacher and Educational Personnel Act of 2004 was later amended in 2008 has authorized the Office of the Teacher Civil Service and Educational Personnel Commission (OTEPC) to design the academic standing promotional assessment framework for Thai government teachers and educational personnel. Teacher can submit request to be assessed for the academic promotion into higher academic standing as stated in Section 39 of the 2004 Act. For the past year, a number of changes and improvements have been done in the Act by various circular notices or letters issued by OTEPC. The first significant change was spelled out in the circular letter by OTEPC on December 29, 2005, letter no. SorTor 0206.3/Vor25. It has been implemented for five years; minor changes have been amended for several times until three year ago.

In 2009, another circular letter has been issued by OTEPC on September 30, 2009, letter no. SorTor 0206.4/Vor17 to revise the assessment framework. There were three dimensions or areas to be evaluated by the assessing committee: 1) Professional Code of Ethics, 2) The quality of teacher performance, and 3) Research work or performance from job responsibility.

In 2017, the criteria and procedure of assessment framework for teachers' academic standing promotion were revised in responsive to enhance the quality of education for students and to promote teachers to increase their teaching performance, professional learning community (PLC) and continuous professional development.

The qualification and criteria for academic standing promotion

The qualification and criteria in partial fulfillment of the requirements for the teacher academic standing promotion were covered with five components as follows:

1) Number of years for applicant's eligibility to academic standing promotion: To be eligible for academic standing position, a teacher must have five years of teaching

experiences at schools. A teacher must have at least five years of satisfactory performance at current academic standing teacher position in order to advance to the next stage and final stage by completing the criteria requirement.

2) Number of hours for teachers' workload performance in current academic standing position at last five years: A teacher must teach following the teaching schedule at least 6 hours for preschool teacher and 12 hours for primary and secondary school teachers (800 hours for professional teacher and senior professional teacher-900 hours for expert teacher and senior expert teacher for five years) including PLC (100 hours for five years).

3) Discipline, Moral, Ethics, and Code of Professional Conduct in Teaching Profession: An applicant must not be subjected to disciplinary action during last 5 years starting from the proposed date. In case, the applicant who has not announced the verdict is considered as the fulfillment of qualification required to apply for academic standing position.

4) Professional Development Course Approved by Office of the Teacher Civil Service and Educational Personnel Commission (OTEPC): A teacher must take courses of continuous professional development approved by OTEPC for 12-20 hours per years (100 hours cumulative hours for last five-consecutive years), and professional learning community (PLC) for 100 hours for five years. The teacher professional development is the development in terms of knowledge, skills, and teacher's professionalism based on the standard of academic standing criteria promotion.

5) Last Five-Consecutive Year Teacher Performance: 1) A teacher must have taught for last five- consecutive years, 2) They must have passed 3 domains, consisting of 13 indicators, at least 3 years among 5 academic years, 3) Academic research at least 2 items (classroom action research at least 1 items for expert teacher, and instructional research at least 1 item for senior expert).

Teacher career pathway in Cambodia

In accordance with educational reform in Cambodia, teachers are broadly recognized as the key elements of enhancing the quality of education. Recently, Ministry of Education, Youth and Sport have approved to launch the teacher career pathway framework in order to set clear standards and raise the bar for instructional excellence within or across the network, to retain talented teachers through recognition and reward, to reinforce the value places in teaching profession.

1. Career advancement structure

The teacher career pathway has been categorized into three pathways: 1) Teacher Career Pathway, 2) Administrator Career Pathway, and 3) Specialist Career Pathway.

Teacher Career Pathway: Teacher career pathway is organized for an individual who has talent in teaching profession as they progress in their teaching career with three professional title position including 1) lead teacher, 2) model teacher, and 3) master teacher.

Administrator Career Pathway: Administrator career pathway is organized for an individual who has talent in educational administration as they progress with three professional title position including 1) lead school administrator, 2) model school administrator, and 3) master school administrator.

Specialist Career Pathway: Specialist career pathway is organized for an individual who has talent in educational research, curriculum design and development, textbooks, book writers, policy makers as they progress with three professional title position including 1) lead specialist, 2) model specialist, and 3) master specialists.

2. Expected Competency levels of Teacher Professional Growth

Lead teachers: Lead teachers have effectiveness of teacher performance to better improvement of curriculum implementation, instruction, assessment, and student learning outcome at school level.

Model teachers: Lead teachers have effectiveness of teacher performance to better improvement of curriculum implementation, instruction, assessment, and student learning outcome at school, district, or provincial level.

Master teachers: Lead teachers have effectiveness of teacher performance to better improvement of curriculum implementation, instruction, assessment, and student learning outcome and raising school effectiveness at national level.

3. Criteria for teacher professional title promotion

Educational personnel who are primary teachers, lower secondary teacher, and upper secondary teachers serving in public schools have aptitude for criteria requirement fulfillment to apply for teaching professional title promotion. There are required criteria and selective criteria for teachers to apply for teaching professional title positions such as lead teachers, model teachers, and master teachers.

- 1) **Qualification:** Qualification refers to the highest certificate that a candidate obtained from higher education.
- 2) **Teaching experiences:** Teaching experience refers to a number of years that an applicant has successfully completed.
- 3) **Academic or research article publication:** Academic article or research publication refers to the articles that have been evaluated and published
- 4) **Instructional materials:** Instructional materials refer to reading materials or other materials produced to use for more effective teaching and learning and response to learners' need.
- 5) **Books:** Books refer to books written by oneself or co-authors which were published by publication with license for teaching and learning or references for educational policy formulation or interaction of quantity and educational quality.
- 6) **Visual Media:** Visual Media refers to products of video clip or sound clip that have generally been used for teaching and learning by social media such as websites, YouTube, Facebook, and so on.

- 7) Standard test: Standard test refers to the questions for assessing student learning outcome by grade and subject areas, conducted by the authorized organization, Ministry of Education, Youth and Sport, Cambodia in order to measure students' knowledge, skills, and attitudes in response to national curriculum standard by grade and subject areas.
- 8) Languages: Languages refer to educational level of foreign language using in research for better effectiveness.
- 9) Information technology literacy: Information technology literacy refers to skills in using information technology for teaching, learning, and research.
- 10) Continuous professional development: Continuous professional development refers to a number of professional development program in terms of knowledge, skills, and attitude through attending the trainings, workshops, conference, or co-reach with colleagues.
- 11) Special experiences: Special experiences refer to a number of working experiences in instruction, management, and research and development for school effectiveness in remote area or disadvantage area that were defined by ministry of education, youth and sport.
- 12) Code of conduct credential professional: Code of conduct credentials professional refers to the morality and ethics assessment certificate that is evaluated by colleagues, school administrators, and stakeholders.
- 13) Reward Achievement: Reward achievement refers to rewards that teachers received for effectiveness of their excellence in instruction, management, and research toward enhancing the quantity and quality of education.

In Cambodia, education system which was almost completely ruined in genocide regime has been restored and developed. However, education has now progressed to a higher level that was once expected. New schools have been built and teachers at all levels have been trained to ensure student learning quality in a network throughout the nation. For a combination of historical, geographic, and socio-economic reasons, teachers have trained in many different formulas such as since the early 1980s,

the period required to complete state-run teacher training has steadily increased: 4 months, 7 months, 3+1, 4+1, 5+3, 7+1, 8+1, 7+3, 10+3, 10+4, 11+1, 12+1, 12 + 2 up to BA+1. The teacher training system has trained a total of 111 batches or approximately 102,000 teachers. By 2020, the MoEYS' ambition is to ensure as many basic education teachers as possible reach the new standard of BA+1 and MA +1 for senior level teachers. Currently, it is estimated that more than 75,000 teachers have qualifications below BA equivalency (MoEYS, 2013). Currently the increase of BA holders in the teaching profession is slightly more than 2% annually meaning that without a bold policy intervention the number of teachers with BA qualifications by 2020 will reach only 28%. Thus, one of the most urgent tasks for pre-service and in-service provision is to ensure opportunities for as many teachers as possible to reach the new BA equivalency.

2.1.7 Concepts of Career Stages/ Career Advancement

Career development is a continuous lifelong process of developmental experiences that focuses on seeking, obtaining, and processing information about self, occupational and educational alternatives, lifestyles and role options (Super, 1953; Hansen, 1976). Thus, career development focuses on the developmental tasks confronting the individual at each stage or period in life, and the changes in the way individuals perceive themselves, the world of work, and their roles in it.

Today's works, making career choice decision is one of the most important factors that can determine how an individual identifies his or her career success during one's work life. Based on staffing needs, organizations establish career paths and career pathways for employees whom the organization wants to develop or whom it deems qualified to fill the vacant job. For example, managerial trainees typically rotate laterally among functional departments, and specialists are providing work experiences in the various activities that are performed within their function. When higher-level jobs open up, qualified employees get promoted into those jobs. Promotion paths generally parallel the organizations' structure and consistent with the job and pay hierarchies establish for compensational purposes. Occupational psychologists concur that

occupational choice reflects the individual's implementation of his or her self-concept as an adult and that most satisfactory occupational choices are those that match the individual's abilities, interests, values, goals, and personality. While, career development theory has been used to explain the proper reasons why people make the choices they do and develop their potentials. More understanding what draws a person's attention to a particular job and makes success is an important tool for organizations to help every employee plan the careers that they have found their satisfaction and gratification. A number of career development theories have been considered to emerge over the years to use widespread today.

Career stages are typically defined as evolutionary phases of working life. The concept of career stage evolved as psychoanalysts (Christiansen & Palkovitz, 1998), developmental psychologists (Wrobel & Raskin, 2003), and sociologists (Form, Miller) separately examined stages of life and work (Super, 1980). Developmentalists concentrated on stages of psychological development while sociologists determined periods of individuals' working lives, and by combining these two career stages first emerge in the literature. For example, the Exploratory Stage defined by (Super, 1969), a German development list, and the Initial Work Period classified by sociologists Form and Miller (1949) both describe the experience of adolescents' exploration of work. As a developmental stage, the Exploratory Stage represents the time period in which adolescents define their adult identities through spousal, social, and career choices, while the Initial Work Period describes the first jobs adolescents take to explore the world of work. In this way, the contributions of both psychologists and sociologists created a framework for understanding careers using the concept of career stage. However, while these early models of career stage provide a useful structure to conceptualize career development, many of the early theorists assumed career stages to be linear and stable. Current researchers (Hall and Schein) have updated the concept of career stage to encompass modern, varied patterns of career development. These patterns tend to be more fluid and dynamic.

Four distinct stages in the career of a professional have been identified by Dalton, Thompson, and Price (1977), includes apprentice, independent contributor, mentor, and director. In similar way, professional in human resource development seem to perform these functions in the same way that other professions do. Dalton and Thompson (1986) summarize the main focal point of each stage; namely stage1: the individuals work under the direction of others as apprentices, helping and learning from one or more mentors; stage2: they show their competence as independent contributors; stage3: they extend and act as a mentor for others; stage4: those in stage 4 gives direction for the organization.

Following his overview of studies on career stages, Huberman (1989) formed seven career stages and created possible tracks taken by teachers during their years of work:

- 1) **Survival and/or discovery:** At this stage of career entry, many teachers undergo a reality shock and are preoccupied with teaching and class management demands. Others are enthusiastic about managing their pupils, teaching materials.
- 2) **Stabilization:** After a few years of teaching, teachers feel greater instructional mastery and comfort and are committed to the teaching profession.
- 3) **Experimentation or activism:** There is no agreement regarding this career stage. Some studies find that after about 10 years in the profession, teachers experience with materials and practice and seek new stimulation, while others find that teachers seek to increase their impact in their school by taking new responsibilities and roles and by trying to introduce changes;
- 4) **"Taking stock" or self-doubts:** Experimentation gives way to a "mid-career crisis." In this stage many teachers experience a sense of monotony and may even consider leaving the profession. Others may reassess themselves and go through a renewal phase in which they are again active.

5) Serenity or bitterness: After about 20 years in their profession, many teachers experience a loss of energy and enthusiasm but also a sense of confidence and self-acceptance. They disinvest in relational closeness with their pupils. Others feel bitter towards their school and profession.

6) Conservatism: Studies find teachers, being serene or bitter, engage in conservative behavior in their last 10 years of teaching. They resist innovations and feel nostalgia for the past; and

7) Disengagement: Towards the end of the career, teachers gradually disengage from their roles and withdraw to personal and reflective pursuits. They may leave the profession feeling satisfied and serene or bitter and worn out.

Likewise, Fessler and Christensen (1992) define eight stages: (1) pre-service, (2) induction, (3) competency building, (4) enthusiasm and growth, (5) career frustration, (6) career stability, (7) career wind-down, (8) career exit. Another group of researchers relates to teaching as a life-long learning-to-teach process (Feinman-Nemser, 1983). In this sense, the stages depict a perpetual increase in various skills and abilities. The teachers develop according to their ability, their qualities, their desires, and their influence on their surroundings, and therefore, not all of the teachers reach the "high" stages.

For instance, [Asaf, Shachar, Tohar, and Kainan \(2008\)](#) identify the career stages of outstanding teachers by collecting testimonies and case studies. These careers are described as a sequence of successes:

1) Novice: During their pre-service years, teachers learn teaching practices and skills while following the example of experienced teachers.

2) Apprentice: This phase begins when teachers are in full control of their instruction and pupils. During the first years of teaching teachers are enthusiastic, active, and devote themselves to their pupils.

3) Professional: Teachers in this stage feel personally and professionally confident as they receive positive feedback from their pupils. They consult and work with their colleagues.

4) Expert: Teachers in this stage meet the expectations required for national certification. They are skillful practitioners and align instruction to pupil responses and needs. They are respected by pupils and parents. They constantly reflect on their practices and innovate. Some are members in local or national organizations.

5) Distinguished: Only few gifted teachers reach this career stage. They usually leave their schools and influence education-related decisions at local and national levels; and

6) Emeritus: After retirement, some teachers continue to serve the profession as tutors, substitute teachers, and mentors.

Individual employees go through a series of career stage as they progress through their work life. Within each of these stages, the employee has different needs that the organization must meet so the relationship between the two can remain stable and the worker will continue to be motivated to produce for the organization. Organization must respond successfully to the individual employee based on the employee's current career ladder (Lussier & Hendon, 2016). The identified stages of career development were first identified by Donald Super and Douglas Hall as follows:

1) Exploration: The first career development stage, called the *exploration* stage, is the period of time during which the individual is identifying the personal needs that will be satisfied by a particular type of work, the types of jobs that interest them, and the skill sets necessary to be able to accomplish those types of jobs. This stage is usually identified as being between the ages 15 and 24.

2) Establishment: The second stage, called *Establishment*, is the period when the individual has entered into a career and becomes concerned with building a skill set, developing work relationships, and advancing and stabilizing their career. In the establishment phase, we see the individual being to make significant personal contribution to their career in the organization and being to create relationships or alliances with coworkers that allow them to become more secure within the organization. This stage is usually identified as covering approximately age 25 through the mid-40s

3) Maintenance: This is the third stage of career development. The maintenance stage covers the period from the mid-40s to age 60 years old or older. In the maintenance stage, the individual typically continues to advance but being to seek personal satisfaction in the job that they perform for the organization. This is the phase where we see individual employee being to act as mentors or trainers to their young coworkers and to act to improve the organization and its processes and policies because they see a need to do so.

4) Disengagement: Finally, the fourth stage is identified as the *disengagement* stage. This stage typically shows lower levels of output and productivity as the individual prepares for life after work. During this stage, because of the desire to balance non-work with work activities, the individual may choose to work only on efforts their feelings are necessary or worthy of their attention. They may continue to mentor or sponsor other individual in the organization as those other progress point at which the individual finally completely disengages from the organization through retirement.

2.1.8 Roles and Responsibilities of Teachers

Teachers are now expected to have much broader roles, taking into account the individual development of children and young people, the management of learning processes in the classroom, the development of the entire school as a “learning community” and connections with the local community and the wider world. Some examples of areas of broadened teacher responsibility are as follows.

At the individual student level

- Initiating and managing learning processes
- Responding effectively to the learning needs of individual learners
- Integrating formative and summative assessment

At the classroom level

- Teaching in multi-cultural classrooms
- New cross-curricular emphases
- Integrating students with special needs

At the school level

- Working and planning in teams
- Evaluation and systematic improvement planning
- ICT use in teaching and administration
- Management and shared leadership

At the level of parents and the wider community

- Providing professional advice to parents
- Building community partnerships for learning

As a teacher, one of the main roles is to motivate students to develop their ability and aspiration to learn. The role of teacher is not just about teaching the subject matter or preparing students for assessment, but also inspiring students to change and develop their personal, social and professional skills to the best of their ability. In this respect, Teachers' ultimate aim is to enable students to understand how to take responsibility for their own development, so that teachers have to do this by planning and preparing teaching and learning activities that take account of the needs and well-being of individual learners as well as groups of learners.

In order to carry out their duties effectively, teachers should also have a good, stable, and mature personality (Mulyasa, 2007). Teachers should have a good role and

involvement in their surrounding by actively joining the social organization. In addition, teacher should also be able to make decisions related to their professional work.

2.1.9 Teacher Competency

In the generally accepted terminology, the term competency is derived from the English language competence is the same as being competent and competent equally with having ability, power, authority, skill, knowledge, attitude, etc. According to Fullan in Uno (2012: 62): "Competence is broad capacities as fully human attribute. Competence is supposed to include all qualities of personal effectiveness that are required in the workplace", it is Certain that we have here a very diverse set a qualities indeed: attitude, motives, interests, personal attunements of all kinds, perceptiveness, receptivity, openness, creativity, social skills Generally, interpersonal maturity, kinds of personal identifications, etc.-as well as knowledge, understanding, action and skill Uno (2012: 62) Competence is the ability and skill. A person who is declared competent in certain subject is the one who controls the work skills or expertise in tune with the demands of field work is concerned.

According to Deakin Crick (2008) in the article Zlatko Bukvić entitled "Teachers Competency for Inclusive Education" states competence as a "complex combination of different knowledge, skills, understanding, values, attitudes and desire which leads to effective, embodied human action in the world, in a particular domain". According to Vijay Kumar (2013: case 2278-8719) in his article, entitled "The Influence of Teacher's professional competence on Students' Achievement" regarding competence are: "competency standards are concerned with the application of professional knowledge and skills within the workplace and are underpinned by teachers' professional values Competence is usually associated with highly professional performance and there is a direct link in the field of education between a teacher's professional competence and pupil performance.

According Westera (2001) in the article Vijay Kumar (2013: case 2278-8719) entitled "The Influence of Teacher's Professional Competence on Students' Achievement state "Apparently, when thinking about competences, concepts such as performance and effectiveness are directly involved because competence is linked with effective performance in complex situations as it is thought to serve as a causal factor for success Because "competent performance presumes competence".

According to Law No. 14, 2005 about Teachers and Lecturers, competence is a set of knowledge, skills and behaviors that must be owned, lived and ruled by teacher or lecturer in performing the duties of professionalism. Things According Hamalik (2008: 27), professional teachers are people who have been through the teacher education program and has a master's level and has got a diploma of state and have experience in teaching in large classes. According to Gutek, G. L. In his book Philosophical and ideological (2004) regarding the competence of teachers, namely: "Moreover, a competent teacher is one who Engages student in dialogue and manages through dialogue to Achieve genuine learning because when student and teachers are engaged in a shared critical dialogue, they mutually create and construct knowledge instead of passively transmitting it, since they can share Reviews their experiences, reflect upon them and finally the make critical evaluations regarding the way they Themselves have Obtained that knowledge and Reviews those experiences ".

According to Law No.14 in 2005 on Teachers and Lecturers and PP 74 in 2008, the government has formulated four types of teacher competence as listed in the explanation of government regulation No.19 of 2005 on national education standards, namely: Pedagogical Competence, Personality, Professional and Social. Teachers are assessed according to the following competencies: 1) pedagogic competencies (e.g., understanding learning styles, understanding learner's background, developing curricula); 2) personal competence (e.g., ability to act as a person with exemplary character, maturity, ability to evaluate one's own performance); 3) professional competence (e.g., ability to master subject matter and have empathy with colleagues and

students); and 4) social competence (e.g. ability to communicate effectively; ability to contribute to the development of school and community education; ability to apply ICT, to communicate and to have personal development).

Pedagogical Competence

Statement of Ryegard (2008) Michael Olalekan Olatunji stated that "Pedagogical competence implies that the teacher from definite goals and frameworks, through continuous development of teaching and personal professional development, support and facilitates the learning of the students in the best way. This pedagogical competence Also Reflects the teacher's competence in regard to collaboration, understanding view, and contribution to the development of pedagogy for higher education." According to the National Education Standards Agency (BSNP) in Musfah (2012: 30) is a pedagogical competencies are: The ability in the management of learners that includes (a) understanding of insight or educational foundation; (b) an understanding of learners; (c) the development of the curriculum / syllabus; (d) the design instructional; (e) the implementation of learning that educates and dialogue; (f) evaluation of learning outcomes; and (g) the development of learners to apply various potentials.

According Mulyasa (2009: 26), states that the pedagogical competence is the ability of teachers in the management of education of students who at least include: 1) The ability to manage learning, 2) Understanding of the learners. 3) Design of learning. 4) Execution of educational learning and dialogue. 5) Utilization of Technology Education, 6) Evaluation of Learning Outcomes and 7) Development of learners.

Personal Competence

According to Bhargava & Pathy (2011) concerning the competence of personality in his article Morallo entitled Personal and Professional Competencies of Senior Teacher Education Students stated that the "Teacher's personal competencies include knowledge of the subject matter, effective communication skills, punctuality, being a disciplinarian and understanding the nature of child psychology. The conclusion

of this statement is the personal competence of teachers include knowledge of the subject matter, effective communication skills, punctual, disciplined and understand the character of psychology children.

According Mulyasa (2009: 121) states that there are some personal competence that must be possessed by a teacher namely: 1) personality steady, Stable and Adults, 2) Discipline, wise, and charismatic, 3) Being a role model For Students, and 4) Noble. Indicators of personal competence in this study based on the opinion of Mulyasa (2009: 121) and the development of questionnaires by researchers from higher education (higher education), which shows a mature person and by example, work ethic, high responsibility and pride a teacher, discipline, wise and authoritative, a role model for students and noble.

Professional Competence

According Wibowo and Hamrin (2012: 118), the professional competence of teachers is mastery over the subject matter is broad and deep. According to the Wina Sanjaya in Wibowo and Hamrin (2012: 118), Professional competence is the competence or skills related to the completion of the tasks of education. Professional competence has mastered the characteristics of teaching materials are broad and deep, and master the structures and methods science field of study is taught. The material is controlled not just a teaching material that is taught in school or in accordance with a flyer in the school curriculum, but also the material overriding. Professional competence is a mastery of the subject matter is broad and deep that include mastery of curriculum subjects at school and substance of knowledge that overshadow the material, as well as mastery of structure and methodology of science.

Some indicators that can demonstrate professional competence of teachers are: (1) Mastering the substance of science related to the field of study, has the indicators to be essential to understand the teaching materials in the curriculum of the school, understand the structure, concepts and methodology of science that houses the teaching material, understand the concept of inter related subjects, and apply the

concepts of science in everyday life, (2) mastering the structure and the scientific method, have an essential indicator: mastering the steps of research and theoretical studies to deepen the knowledge or study material.

Social Competence

According to S. Reitz (2012: 8) in the article Genute Gedviliene et. al entitled "The social competence concept development in higher education" who stated that "Social competence is the sum of knowledge and skills of a person that determines the quality of socially competent behavior". According Mulyasa (2009: 173), social competence that is: 1) get along and communication effectively, 2) relationship between the school and the community, 3) the role of teachers in the community, and 4) the teacher as an agent of social change.

Based on some of the above understanding can be concluded that social competence is the competence of teachers with regard to the relationship between teachers and the environment or the public, that society is in school or out of school, communicate and interact with both the students and have the values and manners and etiquette in the mix and adhere to the values and norms that apply in school and society. Indicators of social competence in this research refers to the opinion of the Mulyasa (2009: 173) and the development of a questionnaire higher education (Higher Education), which contains about communicate and interact effectively, to act as per the norm, religion, law, social and culture Indonesian national, be inclusive, objective, and not discriminative, and communication among teachers, education personnel, parents of students, and the community.

Similarly, Innotech (2010) conducted a study on teaching competency standards in in Southeast Asian Countries. The results were found that teaching competency standards for Southeast Asia has five domains, namely:

Professional knowledge: Professional knowledge refers to the mastery of content and methodology for teaching.

Professional skills: Professional skills refers to pedagogies, classroom management, and learner assessment.

Personal characteristics: Professional characteristics refers to personal traits such as being responsible, punctual, etc.

Professional/Personal ethical standards and values: Professional /Personal ethical standards and values refers to sound and ethical standards of ethics and morality resulting in teachers being good role models in the school and the community

Professional development and lifelong learning: Professional development and lifelong learning refers to the professional development and lifelong learning undertaken by teachers such as participation in professional teacher organizations and activities, and other elements that demonstrate a desire to enhance the teaching profession, etc.

In Australia, the Australian Professional Standards for Teachers comprise seven Standards which outline what teachers should know and be able to do. The Standards are interconnected, interdependent and overlapping. The Standards are grouped into three domains of teaching: Professional Knowledge, Professional Practice and Professional Engagement. In practice, teaching draws on aspects of all three domains. Within each Standard focus areas provide further illustration of teaching knowledge, practice, and professional engagement. These are then separated into Descriptors at four professional career stages: graduate, proficient, highly accomplished and lead teacher.

Table 2: The Australian Professional Standards for Teachers

Domain	Standard	Focus Areas and Descriptors
Professional Knowledge	1. Know students and how they learn 2. Know the content and how to teach it	Refer to the Standard at each career stage
Professional Practice	1. Know students and how they learn 2. Know the content and how to teach it	Refer to the Standard at each career stage
Professional Engagement	6. Engage in professional learning 7. Engage professionally with colleagues, parents/carers and the community	Refer to the Standard at each career stage

The seven Standards identify what is expected of teachers within three domains of teaching. Teachers' demonstration of the Standards will occur within their specific teaching context at their stage of expertise and reflect the learning requirements of the students they teach.

Domains of Teaching Professional Knowledge Teachers draw on a body of professional knowledge and research to respond to the needs of their students within their educational contexts. Teachers know their students well, including their diverse linguistic, cultural and religious backgrounds. They know how the experiences that students bring to their classroom affect their continued learning. They know how to structure their lessons to meet the physical, social and intellectual development and characteristics of their students. Teachers know the content of their subjects and curriculum. They know and understand the fundamental concepts, structure and enquiry processes relevant to programs they teach. Teachers understand what constitutes effective, developmentally appropriate strategies in their learning and teaching programs and use this knowledge to make the content meaningful to students. Through their teaching practice, teachers develop students' literacy and numeracy within their

subject areas. They are also able to use Information and Communication Technology to contextualize and expand their students' modes and breadth of learning. Professional Practice Teachers are able to make learning engaging and valued. They are able to create and maintain safe, inclusive and challenging learning environments and implement fair and equitable behavior management plans. They use sophisticated communication techniques. Teachers have a repertoire of effective teaching strategies and use them to implement well-designed teaching programs and lessons. They regularly evaluate all aspects of their teaching practice to ensure they are meeting the learning needs of their students. They interpret and use student assessment data to diagnose barriers to learning and to challenge students to improve their performance. They operate effectively at all stages of the teaching and learning cycle, including planning for learning and assessment, developing learning programs, teaching, assessing, providing feedback on student learning and reporting to parents/careers.

Professional Engagement Teachers model effective learning. They identify their own learning needs and analyze, evaluate, and expand their professional learning both collegially and individually. Teachers demonstrate respect and professionalism in all their interactions with students, colleagues, parents/carers and the community. They are sensitive to the needs of parents/carers and can communicate effectively with them about their children's learning. Teachers value opportunities to engage with their school communities within and beyond the classroom to enrich the educational context for students. They understand the links between school, home and community in the social and intellectual development of their students.

Professional Capability at Four Career Stages

The four career stages in the Standards provide benchmarks to recognize the professional growth of teachers throughout their careers. The descriptors across the four career stages represent increasing levels of knowledge, practice and professional engagement for teachers. Progression through the stages describes a growing

understanding, applied with increasing sophistication across a broader and more complex range of situations.

1) Graduate Teachers

Graduate teachers have completed a qualification that meets the requirements of a nationally accredited program of initial teacher education. The award of this qualification means that they have met the Graduate Standards. On successful completion of their initial teacher education, graduate teachers possess the requisite knowledge and skills to plan for and manage learning programs for students. They demonstrate knowledge and understanding of the implications for learning of students' physical, cultural, social, linguistic, and intellectual characteristics. They understand principles of inclusion and strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities. Graduate teachers understand their subject/s, curriculum content and teaching strategies. They are able to design lessons that meet the requirements of curriculum, assessment, and reporting. They demonstrate the capacity to interpret student assessment data to evaluate student learning and modify teaching practice. They know how to select and apply timely and appropriate types of feedback to improve students' learning. Graduate teachers demonstrate knowledge of practical strategies to create rapport with students and managing student behavior. They know how to support students' wellbeing and safety working within school and system curriculum and legislative requirements. They understand the importance of working ethically, collaborating with colleagues, external professional, and community representatives, and contributing to the life of the school. Teachers understand strategies for working effectively, sensitively, and confidentially with parents/carers and recognize their role in their children's education.

2) Proficient Teachers

Proficient teachers meet the requirements for full registration or accreditation through demonstrating achievement of all of the Standard Descriptors at this level.

These teachers create effective teaching and learning experiences for their students. They know the unique backgrounds of their students and adjust their teaching to meet their individual needs and diverse cultural, social, and linguistic characteristics. They develop safe, positive, and productive learning environments where all students are encouraged to participate. They design and implement engaging teaching programs that meet curriculum, assessment, and reporting requirements. They use feedback and assessment to analyze and support their students' knowledge and understanding. Proficient teachers use a range of sources, including student results, to evaluate their teaching and to adjust their programs to better meet student needs. Proficient teachers are active participants in their profession and with advice from colleagues identify, plan, and evaluate their own professional learning needs. Proficient teachers are team members. They work collaboratively with colleagues; they seek out and are responsive to advice about educational issues affecting their teaching practice. They communicate effectively with their students, colleagues, parents/carers and community members. They behave professionally and ethically in all forums.

3) Highly Accomplished

Teachers Highly Accomplished teachers are recognized as highly effective, skilled classroom practitioners and routinely work independently and collaboratively to improve their own practice and the practice of colleagues. They are knowledgeable and active members of the school. Highly Accomplished teachers contribute to their colleagues' learning. They may also take on roles that guide, advice or lead others. They regularly initiate and engage in discussions about effective teaching to improve the educational outcomes for their students. They maximize learning opportunities for their students by understanding their backgrounds and individual characteristics and the impact of those factors on their learning. They provide colleagues, including preservice teachers, with support and strategies to create positive and productive learning environments. Highly Accomplished teachers have in-depth knowledge of subjects and curriculum content within their sphere of responsibility. They model sound teaching

practices in their teaching areas. They work with colleagues to plan, evaluate and modify teaching programs to improve student learning. They keep abreast of the latest developments in their specialist content area or across a range of content areas. Highly Accomplished teachers are skilled in analyzing student assessment data and use it to improve teaching and learning. They are active in establishing an environment which maximizes professional learning and practice opportunities for colleagues. They monitor their own professional learning needs and align them to the learning needs of students. They behave ethically at all times. Their interpersonal and presentation skills are highly developed. They communicate effectively and respectfully with students, colleagues, parents/carers and community members.

4) Lead Teachers

Lead teachers are recognized and respected by colleagues, parents/carers and the community as exemplary teachers. They have demonstrated consistent and innovative teaching practice over time. Inside and outside the school they initiate and lead activities that focus on improving educational opportunities for all students. They establish inclusive learning environments that meet the needs of students from different linguistic cultural, religious and socio-economic backgrounds. They seek to improve their own practice and to share their experience with colleagues. They are skilled in mentoring teachers and preservice teachers, using activities that develop knowledge, practice, and professional engagement in others. They promote creative, innovative thinking among colleagues. They apply skills and in-depth knowledge and understanding to deliver effective lessons and learning opportunities and share this information with colleagues and preservice teachers. They describe the relationship between highly effective teaching and learning in ways that inspire colleagues to improve their own professional practice. They lead processes to improve student performance by evaluating and revising programs, analyzing student assessment data and taking account of feedback from parents/carers. This is combined with a synthesis of current research on effective teaching and learning. They represent the school and

the teaching profession in the community. They are professional, ethical, and respected individuals inside and outside the school.

In Cambodia, the national teaching competency standards are used to check teachers' performance not only in terms of knowledge but also in terms of ability to comply with ethical standards. Experts from relevant departments of the Ministry of Education, Youth, and Sports (MoEYS) such as the Teacher Training Department, the Department of Primary and Secondary Education, the Pedagogic Research Department, and the Inspectorate Office conduct school visits to monitor and evaluate teachers' performance, especially in terms of their teaching-learning strengths, weaknesses, opportunities, and constraints. These representatives also provide advice to teachers and school administrators if they face difficulties that they cannot resolve on their own. Teachers are assessed according to: 1) professional knowledge, 2) professional practice, 3) professional study, and 4) professional ethics.

In summary, teacher competency of the 21st Century should include five components: 1) professional characteristics, 2) professional knowledge, 3) professional practice, 4) professional development and lifelong learning, and 5) professional ethics and values.

2.2 The Concepts of Authentic Student Achievement

Application of the theory of learning is very necessary for educational management today. There are a wide variety of learning theories include behaviorism, cognitivism, humanism, constructivism, and so forth. Students are required to form or construct knowledge of the subjects that they had learned in cooperative learning situations and learn to connect with a systematic way of finding out the world, so that learning achievement not only mastery of knowledge in the form of a collection of facts, concepts, or principles, but also a process of discovery in order to establish in all aspects of the knowledge, skills, and attitude connecting to the world.

In response to goals of education, students have been achieving when they acquire the knowledge, skills, and attitudes that they are able to apply in daily lives and become a good citizen in society. Basic skills in language arts and math are critically important, especially for elementary students, but are not sufficient. They are moving to other higher order dimensions of achievement. Student achievement has become a main topic in education today, especially with increased accountability for classroom teachers. The ultimate goal for any teacher is to improve the ability level and prepare students for adulthood. Defining student achievement and factors that impact progress is very critical to becoming a successful teacher.

In general, student achievement measures the amount of academic content a student learns in a determined amount of time. Each grade level has learning goals or instructional standards that educators are required to teach and teacher can use to guide their instruction. Student achievement will increase when quality of instruction is used to teach instructional standards. In today's education, the test scores measured is not only for national standard but also international standard such as Program for International Assessment (PISA).

In this study, authentic student achievement is presented in this section falling into three parts: 1) Definition of authentic student achievement, 2) Variables affecting student achievement, and 3) Assessment of authentic student achievement.

2.2.1 Definition of Authentic Student Achievement

In general, student achievement represents student learning achievement performance that indicates the extent to which a student has accomplished specific goals, the results of educational management that indicate the development of areas of cognitive, affective, and psychomotor of students and also show the quality of school, curriculum, instruction, and management. On the other hand, authentic student achievement used in this research refers to authentic achievement of students which would be determined in development of school teacher career pathway in Cambodia.

The term *authentic* commonly refers to something that is real, genuine, or true rather than artificial, fake, or misleading. It is not easy to define quantify and measure authentic student achievement. The most common indicator of achievement generally refers to a student's performance in academic areas such as reading, language arts, math, science and history as measured by achievement tests. There are a variety of definitions of authentic achievement presented in the research literature and in books and other materials used to their instruction connected to the real-world. While most authors speak of authentic achievement in the context of application outside the classroom, some do not emphasize other aspects of assessments that determine their authenticity. Many advocates emphasize the role of the student in the process or the complexity of the task. However, many educational scholars give the definitions of authentic student achievement in different ways in various perspectives or purposes. The authentic student achievement is commonly defined as follows:

Phaisal Wangphannith (1983) stated that the characteristics and abilities of individuals from teaching and learning process, changing behaviors and experiences from training or teaching is called student academic achievement. The assessment of achievement is the controlling of levels of individual accomplishment after they had learned, how well and what kinds of competencies they have developed.

Sumwang Phithyanuwat (1994) stated that student academic achievement is the results from teaching or process that changes their behaviors focusing on three domains including cognitive, affective, and psychomotor.

Nunravee Nantasen (2000) stated that student achievement refers to student's knowledge and skills development after training and instruction, regarding student achievement as the important outcome from instruction. Student achievement assessment is the main activities of teachers' process of instruction.

Kannika Phirumrat (2011) stated that knowledge and abilities from student learning via learning process and practice that can be assessed by the achievement contributed to student achievement.

Sirichai Kanchanakwasri (2009) stated that the results of student learning through learning management plan, teaching and learning activities in a determined amount of time defined as student achievement. It can be assessed by checking form or not such as teacher performance appraisal, etc.

The learning achievement must have three aspects items, namely cognitive affective and psychomotor. The learning achievement is the outcome of a person in the mastery of knowledge and skills developed in the lesson, usually indicated resources by the test numerical value assigned by the teacher (Asmara, 2009).

Meanwhile, according to Tu'u Sincere (2004) student learning achievement is the receiving of knowledge or skills that are created by subject matter usually guided by the test scores or numerical value that is assigned by teacher. Based on the understanding that it can be concluded that student learning achievement is the success rate of students in schools that are expressed in the form of a numerical value.

According to [Ekalia \(2017\)](#) student learning achievement is the level of students' success in learning the subject matter in university or school which is expressed in the form of scores received from the result of tests on a particular subject matter.

According to Coldwell (2017) the definition of student achievement was defined as three primary dimensions as follow:

Personal: Students achieving are managed to lead lives in which they are content and filled with a sense of wellbeing. They are confident in themselves and feel enthusiastic about the careers and vocations which they are motivated to.

Social: Students achieving are prepared to be members who can contribute to society. They collectively form an informed electorate, upholding our country's core values of liberty, justice, and equality. They show respect and tolerance for others, stand up for those who are vulnerable, and reject violence and crime.

Economic: Students achieving have the skills to sustain themselves in financially viable careers, and to contribute to a thriving national economy characterized by high levels of innovation and entrepreneurship.

The knowledge, skills, and attitudes necessary for these dimensions of achievement are broad and varied. Partially this includes skills in core disciplines like language arts, math, science, social studies, and art. But this also includes what are sometimes called 21st century skills, non-cognitive skills, higher cognitive skills, and social-emotional skills which, more concretely, means skills like problem solving, collaboration, creativity, and persistence.

On the other hands, like learning, student achievement must be personalized as a full definition of achievement for a given student will involve accepting differences with respect to:

Areas of Focus: Students have varying interests and natural talents, and so will pursue varying pathways in their lives. This will mean, especially in high school, that particular students will often spend more time on some subject or project will branch off and achieve excellence in their own personalized sets of “standards” in one or two areas of focus.

Abilities and Aptitudes: Achievement is improvement (or “growth”) in what students know and are able to do relative to where they started and relative to their full potential, not relative to a fixed, grade based benchmark. Students should be supported and nurtured in areas where they struggle and be pushed to reach mastery in areas where they are strong.

Values: Students and families have different values, different ideas about what elements of character are important to develop. Character education is an important part of achievement. As this discussion of student achievement makes clear, the measures or assessments of achievement must also be rethought, broadened. But that is beyond the scope of this memo.

Authentic student achievement refers to intellectual accomplishments that is worthwhile, significant, and meaningful such as those produced by successful adults in today's workforce (Askew, 2013).

After tracing the above description, it is understandable that student learning achievement is the result or level of knowledge, skills, ability, and attitude that has been achieved by students after attending a teaching-learning process within a certain time in the form of changes in behavior, skills and knowledge and will then be measured and assessed and then realized in numbers or statement.

In conclusion, authentic student achievement refers to the achievement of student development in intellectual and behavior through teaching and learning process based on assessment standard of authentic student achievement including 1) construction of knowledge, 2) disciplined inquiry, and 3) value beyond school.

2.2.2 Variables Affecting Student Achievement

In Human Characteristics and School Learning, Bloom (1976) determined the basic tenets of his theory. He believed that the history of any learner is defined in terms of cognitive entry behaviors (CEB) and affective entry characteristics (AEC). These two aspects of the learner's history then interact with four elements that determine the quality of instruction (QI): cues, participation, reinforcement, and feedback/correctives. His model of mastery learning explains variation in student learning in terms of three alterable variables.

1) Student's cognitive entry behaviors is the prerequisite learning needed for a particular set of learning tasks. According to Bloom, this variable may explain 50% of the variation in school learning.

2) Affective entry characteristics influence the student's motivation to learn the new learning tasks: 25% of variation in school learning may be explained by this variable.

3) Quality of instruction involves the use of cues, participation" of students in instruction, reinforcement, and feedback/correctives. This also may explain 25% of the

variation in school learning. When students' entry characteristics and quality of instruction are favorable, all the learning outcomes should be at a high level and there should be little variation in measurements of learning outcomes.

2.2.3 Assessment of Student Achievement

Assessment is process of collecting information on student achievement and performance that includes a variety of assessment tasks designed to monitor and improve student learning.

Authentic Student Achievement Assessment

The earliest reference to authentic tests made by Archbald and Newman in 1988, in a book called *Critical of Standardized Testing*, that sought to promote assessment centered on meaningful real-world problems or tasks is important for this assessment of student achievement. Assessment is authentic when it measures products or performances that “have meaning or value beyond success in school” (Newman, Brandt & Wiggins, 1998, p.19). According to Newman, assessments that ask questions and poses problems that have “real world” meaning to students meet one criterion for being authentic intellectual work, but there are two others related to disciplined inquiry that are not related to the realism of the assessment tasks. Wiggins was also an early proponent for the use of the term authentic to describe assessment with real world application (1989). The authentic refers to the situational or contextual realism of the proposed tasks (Newman, Brandt & Wiggins, 1998).

Criteria of Authentic Achievement Assessment

Newman, King, and Carmichael (2007) conducted a study on authentic student achievement and articulated three broad criteria for authentic intellectual work including 1) student construction of knowledge, 2) disciplined inquiry, and 3) value beyond school.

1) Construction of Knowledge: Construction of knowledge is known as using or manipulating knowledge as in analysis, interpretation, synthesis, and evaluation,

rather than only reproducing knowledge in previously stated forms. Skilled adults in diverse occupations and participating in civic life, facing the challenge of applying skills and knowledge to complex problems that are often new or unique. To reach an adequate solution to new problems, the competent adult has to “construct” knowledge because these problems cannot be solved by routine use of information or skills previously learned. Such construction of knowledge involves organizing, interpreting, evaluating, or synthesizing prior knowledge to solve new problems. Teachers often think of these operations as higher order thinking skills. We contend, however, that successful construction of knowledge is best learned via different forms of experiences experiences that call for this kind of cognitive work with important content, not by explicitly teaching discrete “thinking skills.”

2) Disciplined Inquiry: Disciplined inquiry is defined as gaining in-depth understanding of limited topics, rather than superficial acquaintance with many, and using elaborated forms of communication to learn and to express one's assumptions. Constructing knowledge alone is inadequate. The only fact that someone has constructed, rather than reproduced, a solution to a problem has no guarantee that the solution is adequate or valid. Authentic adult intellectual accomplishments require that construction of knowledge be guided by disciplined inquiry. By this we mean that learners (1) use a prior knowledge base, (2) strive for in-depth understanding rather than superficial awareness, and (3) develop and express their ideas and findings through elaborated communication.

(1) Use a prior knowledge base: Significant intellectual accomplishments build on prior knowledge accumulated in an academic or applied discipline. Students must acquire a knowledge base of facts, vocabularies, concepts, theories, and other conventions necessary to conduct rigorous inquiry. Transmitting a knowledge base, along with basic skills, is usually the central focus of direct instruction in the content areas.

(2) In-depth understanding: A knowledge base that is of value to students involves more than familiarity with a broad survey of topics. To be most powerful, students must have a deeper understanding of that knowledge that helps them grapple with the complexities of specific problems. Such understanding develops as one seeks, proposes, and tests relationships among key facts, events, concepts, and claims in order to clarify a specific problem or issue. Lessons and assignments that satisfy this criterion have students sustain a focus on a significant topic or issue, and demonstrate their understanding by arriving at a reasoned, well-supported conclusion or explaining how they solved a relatively complex problem.

(3) Elaborated communication. Accomplished adults in a range of fields rely upon complex forms of communication both to conduct their work and to present its results. The tools they use-verbal, symbolic, graphic, and visual- provide qualifications, nuances, details, and analogies woven into extended narratives, explanations, justifications, and dialogue. Elaborated communication may be most often evident in essays or research papers, but debates, simulations, and facilitated public issues discussions could also involve elaborated communication.

Value Beyond School: Value Beyond School is the production of discourse, products, and performances that have personal, aesthetic, or social significance beyond demonstration of success to a teacher. Finally, meaningful intellectual accomplishments have utilitarian, aesthetic, or personal value. When adults write letters, news articles, organizational memos, or technical reports; when they speak a foreign language; when they design a house, negotiate an agreement, or devise a budget; when they create a painting or a piece of music-in all of these they try to communicate ideas that have an impact on others.

In contrast, most school assignments, such as quizzes, questions on a reading, or typical final exams are designed only to document the competence of the learner. They lack meaning or significance beyond the certification of success in school. The call for “relevant” or “student centered” curriculum is, in many cases, a less precise

expression of the view that student intellectual accomplishments should have value beyond simply indicating school success. While some people may regard the term “authentic” as equivalent to education that is “relevant,” “student-centered,” or “hands-on,” we do not. Value beyond school is only one component of authentic intellectual work. Activity and topics should not just be interesting to students, they should involve particular intellectual challenges that when successfully met would have meaning to students beyond complying with teachers’ requirements. These tasks have students explore the connections between academic knowledge and situations outside the classroom in ways that create meaning and significance for that knowledge. The three criteria- construction of knowledge, through disciplined inquiry, to produce discourse, products, and performances that have meaning beyond success in school- provide a foundation for the more complex intellectual work necessary for success in contemporary society. All three criteria are important. For example, students might be asked to write a letter to the editor about a proposed social welfare policy. One student might say she vigorously opposes the policy, but offer no arguments indicating that she understands relevant economic and moral issues. This activity may meet the criteria of constructing knowledge to produce discourse with value beyond school, but it would fall short on the criterion of disciplined inquiry, and thereby represent only superficial awareness, not deep understanding, of the issue. Or students might be asked to interview family members about experiences during wartime or to conduct a survey of peer opinion on local economic or environmental conditions. These activities would connect schoolwork to students’ lives beyond school, but if students only reported what the respondents said, without summary or analysis or drawing connections to disciplinary content, there would be virtually no construction of knowledge or disciplined inquiry. Judgments about the extent to which schoolwork is “authentic” should be made on a continuum, from less to more, depending on how fully all three criteria are met.

Authentic Student Achievement Standard

The authentic intellectual work standard has been developed into seven standards for assessment tasks that reflect the three criteria for authentic student achievement. The three main components with seven standards including construction of knowledge (2 standards), disciplined inquiry (3 standards), and value beyond school (2 standards) (Newmann, 1996).

Construction of Knowledge

Standard 1: Organization of Information. The task requires students to organize, synthesize, interpret, elaborate, or evaluate complex information in addressing a concept, problem, or issue.

Standard 2: Consideration of Alternatives. The task asks students to consider different solutions, strategies, perspectives, or points of view as they address a concept, problem, or issue.

Disciplined Inquiry

Standard 3: Disciplinary Content. The task asks students to demonstrate understanding and/or use of ideas, theories, or perspectives considered central to an academic or professional discipline.

Standard 4: Disciplinary Process. The task asks students to utilize methods of inquiry, research, or communication characteristic of an academic or professional discipline.

Standard 5: Elaborated Written Communication. The task asks students to elaborate their understanding, explanations, or conclusions through extended writing.

Value Beyond School

Standard 6: Problem Connected to the World. The task asks students to address a concept, problem, or issue that is similar to one that they have encountered or are likely to encounter in life beyond the classroom.

Standard 7: Audience Beyond the School. The task asks students to communicate their knowledge, present a product or performance, or take some action for an audience beyond the teacher, classroom, and school building.

2.3 The Concepts of Development of Career Pathway

Brandt (1990) stated that career pathways were developed to provide an opportunity for experienced teachers to earn additional pay and greater recognition without leaving the classroom to move into administration, as well as a way to recognize and reward better teachers. T. N. E. D. Council (2013) demonstrated that the process of designing career paths for the organization: 1) gathering, 2) evaluate, 3) analyze, 4) link, 5) review, and 6) adjust.

1) Gathering: In this step, you will gather information on the positions within your company. If there are updated job descriptions, these will be valuable resources. It is also possible you have the information needed residing in your brain. You need to know the responsibilities and tasks for each position, an understanding of the reporting lines, decision-making latitude, and the impact of the position on others – suppliers, customers, and other employees.

2) Evaluating: For each position, identify the knowledge, attitude, skills, habits and/or competencies needed to meet the expectations for the position's assigned responsibilities and tasks. The more specific you can be in your evaluation, the easier it will be to complete the remaining steps. Also begin to identify levels. Entry level positions are generally those jobs which do not require company or industry experience. Typically, in a distributor the warehouse position is a good example of an entry position. Divide the remaining positions into levels: generally, from 3-7. Levels will be distinguished by salaries, experience needed and informal ranking.

3) Analyzing: Now, look for overlap. If you are designing a career pathway, look for overlaps between a position in one stage and a position in the next stage. If you

are designing a career lattice, look for overlaps for positions on the same and the next level. For example, a counter sales position may require basic product knowledge with the ability to name the product and share its most common applications. An inside sales associate may require intermediate product knowledge with the ability to name the product, share its most common applications, identify related products, identify other product options, and solve basic problems. In addition, the inside sales associate would be able to share products based on an application. These two positions share a product knowledge overlap. Assuming the counter and inside sales positions are on different levels, it is possible for a counter sales employee to build on the product knowledge needed to meet performance expectations in his current position in order to move to the inside sales position. These overlaps increase the potential for successful career paths and reduce the development time for employees to prepare for moves along the paths. You will also want to look for habits or attitudes which may challenge the overlap. For example, a human resource position may need an employee who enjoys frequent and varied interaction with people. A position which focuses on data entry may need an employee who enjoys focusing on independent work tasks with limited interaction with people. Although these requirements may not preclude an individual from moving from one position to the other, they surely need to be analyzed and noted.

4) Linking: It is time to begin drawing the paths. Frequently, this is when you begin drawing boxes and lines.

5) Reviewing: Now it is time to review your work. Do the career paths you have designed reflect the objectives you identified? Do the paths reflect the design decisions you made? Consider history. Have individuals moved successfully along the paths you created? Have there been any patterns of failures when individuals moved along the paths you designed?

6) Adjusting: Using the information, make the necessary adjustments to the career path design.

Cao and Thomas (2013) showed that the steps of designing a career path consists of 1) develop a career roadmap, 2) build position profiles, 3) identify core competencies and expected behaviors, 4) incorporate training and development, and 5) create accountability.

Step 1: Create a Career Roadmap

Career maps are used to show what a prototypical career looks like in terms of sequential positions, roles, and stages. They outline common avenues for moving within and across jobs in ways that facilitate growth and career advancement. Career maps are typically displayed in a diagram, making it easy to visualize each position or role as a stage in a path. Organizations may use existing competency grades or job bands to define vertical and horizontal hierarchies, and they can also do so by compiling organizational knowledge to create a general framework. Some companies choose to provide additional information such as common moves when changing careers, number of employees in a particular job role and the growth across those populations, and different job categories in particular business units. This information is particularly useful as employees become more versatile and move across job roles in different parts of the business to increase their expertise.

Step 2: Build Position Profiles:

Position profiles make distinctions among job roles in career paths by outlining their core responsibilities, skills, and requirements. To do this, organizations consult subject-matter experts, interview functional leaders, and conduct external industry benchmarking. It is also important to determine the qualifications and expertise associated with different career positions, roles, and stages. This might include the recommended or required education, skills, technical training, licenses, and certifications for successful performance at each stage.

Step 3: Identify Core Competencies and Expected Behaviors

Competencies should specify differentiating behavior that is exhibited by outstanding performers, and also serve as performance standards that define expected results in different functions. In this way, competencies will drive on-the-job performance and connect business strategy and change initiatives to the workforce through behavioral standards. Additionally, in an effort to vertically align career path design with the strategic talent management process, companies have introduced the concept of “vertically integrated” competencies. These competencies tend to be the same from one career stage to the next, but what differs between stages is the expected scope and impact at which the competencies are expressed.

Step 4: Incorporate Training and Development

Organizations can connect career paths to employee development by prioritizing position profile characteristics and identifying key experiences that employees should acquire as they move along the career path. Developmental opportunities may include, for example, leadership training courses, stretch assignments, cross-functional teams, profit and loss responsibility, or international exposure. These experiences provide the opportunity to develop competencies that are important for the next career level.

Outlining critical development experiences allows managers and employees to have more meaningful career discussions and helps determine realistic career moves.

Step 5: Establish Accountability

With a lot of resources invested in the career pathing process, organizations should create mechanisms to ensure its effectiveness. These mechanisms should create accountability for the process by defining the roles and responsibilities of individuals who support it, ensuring it can adapt to changing business conditions.

Carter et al. (2011) suggested how to construct career paths using the sources of information and methods, and then construct career paths. The information emphasizes on what has worked in the past, the current reality, and the vision of the future.

1) Gathering Information: The sources of information and methods for development career paths emphasis on what has worked in the past, the current reality in the present, and the vision of the future.

2) Describing Five Initial Steps: 1) Identify the stakeholders, 2) Ask the right questions, 3) Identify the target jobs, 4) Develop a project plan, and 5) Develop a communication plan.

3) Study the sequential list of positions or roles: The qualification, critical developmental experiences, competencies that are accrued, strengthened, or required, career success factors, explicit focus on movement, promoting alignment, and assessment of personal attributes and career paths.

Design thinking is used in different contexts, including the growing technology industry, industrial design firms, and even education, in order to help build user-focused designs. B. D. Council (2005) developed design thinking to double diamond design process models are divided into four distinct phases, 1) discover, 2) define, 3) develop and 4) deliver, it maps the divergent and convergent stages of the design process, showing the different modes of thinking that designers apply.

1) Discover: This begins with an initial idea or inspiration to understand the problem and challenge to insight into that problem and clearly articulate the problem that we want to deal with.

2) Define: The area to focus on, interpret and align the needs to objectives. Brainstorm and come up with many creative potential solutions as possible, choose and create the solution.

3) Develop: Design a prototype or series of prototypes, test all or part of the solution, iterate, improve, and refine the possible potential solution.

4) Deliver: Share a prototype with users for feedback, finalize, and launch to put into effect.

Design thinking is a methodology of design to apply and nurture creativity, originally described as a method for architects and city planner in “Design thinking” (Rowe, 1987). And it was introduced into the business domain by David Kelly, a founder of IDEO which is a design firm in the USA. Nowadays, methodology and values that have been regarded as general knowledge can no longer be applied to the development of new businesses and services due to the rapid changes in the social environment resulting from the progress of technology. Richard Buchanan defined these problems as “wicked problem”, and design thinking is an approach to solve them through design (Buchanan, 1992).

Human-centered design is one of the concepts important for solving complex problems, and design thinking can be carried out in compliance with the approach of human-centered design. Tim Brown depicts design thinking as follows: “Design thinking can be described as a discipline that utilizes the designer’s sensibility and methods to match people’s needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity. (Brown, 2009)”

Currently, application of design thinking is done in various forms, but this time we will analyze the 5-step process proposed by Stanford d. school which David Kelly, one of IDEO founder, founded as an educational institution. In the 5 steps process, there are the following: empathize, define, ideate, prototype, and test (Plattner, 2010).

1) Emphasize: The initial phase of design thinking process is the empathy that is the step of finding empathic understanding by observing pain points in the living context around the user's problem. In order to use the process of Human Centered Design, it is necessary to set up certain users and sympathize. There are three major modes: Observe,

involve, immerse. In observation, they observe the behavior in the user's living environment. In involvement, they interview with users interactively. In immerse, they experience what you are experiencing. In this phase, observer can get discovery about user's living context around their problem that lead to find user's insight.

2) Define: Next, in this phase, it aims to define the problem along the extracted insight and the unique approach and design goal with originality to the solution. Establishing an approach is to set the scope for doing ideation, and in order to create a challenge, each team members needs to be aware of themselves and their characteristics and strengths and quality in communication within the team is required in the communication.

From the viewpoint of creative systems theory, it is thought that this step is an act of forming an auto poietic system with elements of discovery about problem awareness. The idea for solving the problem requires the chain of "discovery", which depends on individual creative system (Iba, 2010). This step seems to play a vital part to determine what problem they eager to solve.

In order to occur the reproduction of discovery in this phase, observer need to focus not only users' action but observe their living environment, and speculative potential needs they may have. They conduct an in-depth interview to access the feelings accompanying the facts and the values hidden behind it through the empathy with the target user, not aiming to gain the surface needs but to find the desire in depth psychology, what is called the insight. In the interview, it is necessary to conduct open question, not closed question. In order to deepen the "personality" is promoted by accumulating question-related questions about that person.

Although insight is for users because problem exists around their environment, design goal should be defined in this phase are those of practitioners who solve the problem, and it is necessary to have originality. Strong originality of individual sometimes can be a bias that will stick to own idea and narrow horizons, but in collaboration of teams, it is possible to switch to ideas with collaborating with others

values. The type of discovery they can generate in this phase is how they want to approach the user's problem solving so that problem awareness will be polished. As a result, this attitude always has the attitude to get discovered, high quality communication leads to high quality challenge and assignment setting.

3) Ideate: Next, in this phase, it aims to define the problem along the extracted insight and the unique approach and design goal with originality to the solution. Establishing an approach is to set the scope for doing ideation, and in order to create a challenge, each team members needs to be aware of themselves and their characteristics and strengths and quality in communication within the team is required in the communication.

In this step, they aim to embody the approach which broke the bias with concreting ideas for problems created with POV syntax, and methods have been created for alternative design creation that designers have conceived so far. Typically, the method of idea generation is divided into two steps: divergence and convergence. Divergence is a phase that carries out approaches to break the mental block and bias that a person unconsciously sees as common sense. It emphasizes the quantity rather than the quality to promote the creation of a large variety of ideas. In convergence, they integrate the ideas created and evaluate and decide based on the axes such as appropriateness and originality in problem solving. And it should be supported by discoveries reproduction that is about ideal but concrete solution.

When divergence and convergence are carried out, it is necessary to recognize the characteristics possessed to use them appropriately. This is because there is a concern that high quality output cannot be obtained due to inability to switch between divergence and convergence. The ideation begins with brainstorming (Osborne, 1957) and brain lighting, and then a co-creation session such as KJ method and dynamic framing is held to share and integrate the ideas issued.

In convergence, developer categorize and evaluate ideas with finding common points and differences in order to narrow them down. Main ideas will be refined by

focusing on evaluation axes that developer will provide being based on the project's terms they have been handled so far. Because of the axes, developer can cause continuous discoveries directing the creation to embodiment that make idea optimize.

In this phase, thinking process is not clear and pros or cons are unclear that make developer confused. However, when every factors, divergence, convergence, and essence of problem, are united and one suitable answer comes out, developer find the way to promote the idea to embody and solve user's problem in reality. Since this process support the process itself as a media of discovery, ideas can be associated, and it can lead to effects.

4) Prototype: The prototype creates a common recognition within the team to the idea by materializing the idea formed as an image. Transfer the ideas into a physical form and interact with them. By quickly making, you can find the deviation of recognition and improvement points of detail, make it quickly and change it, use simple materials such as post-it, Lego and role playing which cost less money than normal prototype. Being iterative makes you learn rapidly, which enables to investigate many different possibilities. Prototypes are most effective when others, including teams and users, get experiences from them and give feedback. At the same time, the developer can move his hand to reconsider the ideas by himself and give feedback instantly. Additionally, he can realize more realistically and infer how the user behaves, thinks, and feels through the real interaction with the output.

In the development process of Wii released by Nintendo, countless prototypes were repeated. The ideas that the developers thought of were prototyped using styrene foams and clays, aiming at "a design not to be disliked by anyone". While creating various things such as super lightweight materials and single-button design, the idea went to create a controller that can be used with one hand like a remote control, when a controller for both hands were commonly used. Thereafter, the design of the present

controller emerged as the result of repeated prototyping for the number, the position, and the shape of the button.

The process of learning by themselves while making prototypes can be regarded as the activation of the psychic system of the individual. By separating the invisible thoughts and concepts from themselves by giving a form to them as the prototypes, it is possible to obtain metacognitive overview so that the instant feedback can be given. Besides, by giving a material form, individual sensory differences arising from the ambiguity of the concept are removed and concrete expression can be made. Hence, it is possible to prevent occurrence of discrepancy and disagreement within the team, and to rapidly renew ideas from the learning and discovery obtained. In this process, the discoveries are made from communication mediated by the substance, prototype, and rapidly assemble it to the next discovery as a chain.

The process of learning by themselves while building prototypes can be regarded as the activation of the mental system of the individual. By separating from themselves by giving a prototype form to real thoughts and concepts, it is possible to obtain real-time feedback in order to overlook metacognition. By giving a material form, sensory individual differences emerging from the ambiguity of the concept are taken away and concrete expression can be made. Thus, it is possible to prevent occurrence of disagreement and discrepancy within the team, and to quickly add ideas from the learning and discovery obtained. On this process, we can get discovered from communication mediated by a substance called prototype and quickly assemble it to chain it to the next discovery.

5) Test: Lastly, test is iterative process that provides evaluation and feedback. This process can be determined to be most critical in design thinking in terms of human-centered design because the developers cannot see whether their ideas and designs or targets are appropriate without feedback on the idea from the end users. It is a necessary element for creativity to receive evaluation from others who would become users. In creative systems theory, it is essential that existence of others is indispensable as an

object of communication, not only to activate the reproducing networks of discoveries; however, as an existence giving evaluation and feedback to improve the quality of the discoverer.

In the user test of Spotify and Sound Cloud, the music streaming service, the usability of each function was compared and verified from the viewpoint of seven items regarding some operation to "create a playlist". It is sure that the developers are designing their services with confidence. That is why users can test them in their living environment and make relative evaluation with other companies to make their outputs more refined. The makers may not have the bird's-eye view of the communication that happens in the system that they are configuring, but by putting a third person who gives a bird's-eye view of those and can give the evaluation, they can give attention to the blind spot.

Via this stage, practitioners can get user's feedback that what is effective and what is not valid for the ideas. Based on the learning, they can go back any phases and make modifications to the idea. Consequently, testing make it possible to generate the reproduction of discoveries to refine ideas by conducting the process of design thinking again after reflecting practice based on user's feedback.

Conclusion

Design thinking is a technique to create ideas by making use of the sensibility of designers and to cultivate creativity based on the idea of human-centered design. In this research, we mainly interpreted five processes in design thinking from the viewpoint of creative system theory, not the value in the output created by it. Thereby clarified the functions of each process. In Empathy, communication with the user by observation and interview becomes a stimulus for the psychic system, and it is possible to create "creative communication" which interlinks the discovery interactively by the attitude of empathy. To set users' problems as Define, it can be realized when each team member communicates being aware of their characters to select the unique solution to approach with. Ideation allows them to put the concept into a concrete idea by separately using

divergence and convergence modes. Obtaining metacognitive overview by making it visible leads to the linkage of creation, gaining the discoveries again. In prototype, the idea is transformed from image to material, brushing it up in the process, and test gets evaluation of the output from the user. New external stimuli and discoveries are created by overlooking and evaluating ideas and designs.

As mentioned above, although the framework including design thinking is effective for problem solving, it will give you the better effect by practicing with understanding the important constituent elements in the process like discoveries. As our future work, we aim to maximize the effect of the practice, deepening the recognition of the functions in each process and to adopt a more concrete and feasible framework utilization method.

2.4 Relevant Research Studies

In this part of the literature review, some previous research studies relevant to school teacher career pathway and authentic student achievement have been reviewed to select and include some criteria and competencies requirement that are appropriate for development of school teacher career pathway in Cambodia. Below are the relevant research studies.

[United Nations Educational \(2016\)](#) conducted a study focused on the types of career pathways currently available for teachers in the nine countries in the Asia-Pacific region; Uzbekistan, Mongolia, Republic of Korea, Samoa, Fiji, Pakistan, Sri Lanka, Indonesia and Philippines. The categories were: (1) career pathways, (2) professional development, (3) career guidance, (4) incentives, (5) promotion, (6) school leadership, and (7) gender. It also investigated how professional development is linked to career progression, the context to which teachers receive career guidance, the incentives used to reward good practice and additional responsibilities, the types of promotion opportunities open to teachers, the support provided by principals to teachers in terms of their professional development and career advancement, and the extent to which the issue of gender affected career development. A key issue that emerged in many of the

country case studies was the lack of alternative professional pathways for teachers' career progression. Typically, promotion opportunities tend to be hierarchical and linear often leading out of the classroom to become a vice principal or principal, or move into administrative roles within the ministry of education or national level.

In some countries, however, teachers are able to follow alternative career paths, as in the Republic of Korea and in the Philippines, where there are two distinct pathways that teachers who wish to advance their careers can follow. The administrative path allows them to become a principal, while the master teacher path allows them to take on leadership responsibilities while remain actively involved in classroom teaching.

[Tekleselassie \(2005\)](#) conducted a study of teachers' career pathways policy in Ethiopia: an opportunity for professional growth found that in response to the ever-declining status of the teaching profession, and its adverse effects on the country's educational system, the Federal Ministry of Education in Ethiopia introduced a policy of the teachers' career pathways in 1994. While reformers believe that the introduction of the policy has improved the condition of the teaching profession, the net gains of the policy remain deceptive and even, in part, reduce some of the benefits teachers used to enjoy in the single salary scheme in the past. Among other things, central to the claims of the policy's advocates stands an improved salary scale for teachers. While this was admittedly true by the time the policy was introduced, the gain in salary raise has gradually been lost to the bureaucratic hurdles and watchdog structures erected to screen teachers' eligibility at each stage of the career pathways. After critically assessing the major aspects of the policy, along with the voices of Ethiopian teachers, the current study argues that the policy of the teachers' career pathways in Ethiopia is another prototypical case of a failed experiment both in terms of improving the lives of teachers and maintaining their professional rights.

[Lynn Gaddis \(2016\)](#), conducted a study of Teacher Career Advancement Initiatives: Lessons Learned from Eight Case Studies. The purpose of this report was to

describe what we learned from studying eight teacher career advancement initiatives implemented across a variety of contexts, including urban, suburban, and rural districts; high poverty and affluent districts; and in schools/districts both with and without strong union presence. The result of our work is the identification of key principles for developing successful, sustainable teacher career advancement initiatives. This report is the product of a three-year study conducted by the Center for Educator Learning and Effectiveness at Pearson and the National Network of State Teachers of the Year (NNSTOY) in partnership with the National Education Association and Public Impact and with assistance from the American Federation of Teachers. It represents the second phase of our research into how the teaching profession needs to evolve to meet 21st century career expectations for a new generation of teachers and learners. The first part of our research resulted in a published report, entitled *Creating Sustainable Teacher career pathway: A 21st Century Imperative*.

[Savickas \(2006\)](#) developed career construction theory which is one of many career theories that seek to explain occupational choice and work adjustment, each interrogating a different aspect of vocational behavior. Career theories that have risen to prominence have done so because they effectively address important questions. The model of vocational development emerged in the middle of the twentieth century to address the question of how to advance a career in one organization or profession. These theories of vocational personality types and vocational development tasks remain useful today when considering how to match workers to work and develop a career in an organization. However, the global economy of the twenty-first century poses new questions about career, especially the question of how individuals can negotiate a lifetime of job changes without losing their sense of self and social identity.

According to research on teacher career pathway impact on student achievement and teacher characteristics with the samples of 1040 teachers and 2260 students in grade 3, 4, and 5 for two years by [Fimbres \(1989\)](#), the results of this study indicate that a Career pathways Program in the course of one year or two years would not significantly

impact student achievement. However, the element of time is an important factor when looking at the potential for career pathways impact on student achievement. This factor should be considered in any quest for immediate versus long term success patterns of such plans.

Dumon (2007) conducted a study on Career pathways Program aiming at determining if teachers' perceptions of career pathways teachers from one Arizona school district are consistent with the district's Career pathways Program goals and objectives and additionally identifying differences in the perceptions of teachers based on the years of participation in the Career pathways Program, performance level in the program, gender and teaching level. The results of this study indicated that the degree of involvement in the Career pathways Program was in fact related to the different perceptions. However, the perceptions of teachers tend to become more favorable and fall into alignment with the program goals and objectives the longer they are in the Career pathways Program. These findings suggest that the longer teachers are in the program the more productive they perceive Career pathways to be, and the more aligned their perceptions are to the program's goals and objectives.

Dowling et al. (2007) have studied the effects of Arizona's Career Ladder Program on student achievement. Their study design compared student performance in participating districts with performance in a matched set of comparison districts over a two-year period. They found positive impacts on test scores in math, reading, and writing even over the short period they examined.

Murphy (1984) conducted a study of structure and impact of teacher career ladders in Britain. This study investigated the historical development, structure, and consequences on teacher behavior of the career ladder system used in the United Kingdom. The study was designed to gather information for policy makers who are considering and designing career ladders for teachers across the United States. It was found that a career ladder for teachers has been used in Great Britain for over 40 years.

The ladder contains five steps. Teachers progress up the ladder by competitive promotion. Teachers in career ladder positions have additional responsibilities in schools. Usually, there are instructional or curricular leadership responsibilities, but in some cases, they may be administrative. The higher the ladder step of the position, the more extensive the responsibilities. The career ladder cultivates instructional leadership and develops commitment to instructional quality and school improvement. It appears that a career ladder in Britain can have a positive impact on teaching quality. Providing career opportunities to teachers probably has contributed in significant ways to the improvement of education in the country. It was mentioned that a career ladder can improve teaching. There are many advantages to a career ladder program with differentiated responsibilities in America school as follows:

Teachers with proven ability can be placed in leadership positions.

These teachers can be models and mentors to less experienced teachers and can promote better teaching in general. They can be a significant force in developing good, workable curriculum that will enhance student learning.

The career ladder can be an effective leadership development device. Not only will there be a significant cadre of teachers in leadership position in each school, but principals and assistant principals will be well-prepared for their roles through experiences they will have received moving up the career ladder before becoming administrators.

Because of leadership function shared in school, more teachers have more better performance involved in school improvement activities and school improvement.

There is opportunity and incentive for teachers to grow, to develop new skills, to accept new challenges.

To extend that the career ladder can make teaching a more challenging and rewarding occupation, it can become a powerful incentive to attract and retain qualified people in the teaching profession.



CHAPTER 3

RESEARCH METHODOLOGY

3.1 Research Design

This research study is a multi-phase mixed method research design comprised of 1) to examine the conceptual framework of school teacher career pathway and authentic student achievement, 2) to explore the desirable state of school teacher career pathway, and 3) to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement.

3.2 Research Procedure

The research procedure will be designed into three phases based on the purposes of the study 1) to examine the conceptual framework of school teacher career pathway and authentic student achievement; 2) to explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, and 3) to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement.

3.2.1 Phase1: To Examine the Conceptual Framework of Career Pathway

The conceptual framework of school teacher career pathway and authentic student achievement will be examined through 1) to empathize school teacher career pathway and authentic student achievement, and 2) to: define the conceptual framework of research.

1) Empathize school career pathway and authentic student achievement.

This research aims at studying the concepts and previous research studies. The researcher has reviewed the concepts of school teacher career pathway models of three countries including Singapore, Thailand, and Cambodia in order to make the first draft of the research's conceptual framework and authentic student achievement.

2) Define the conceptual framework of research

The conceptual framework of the research will be defined by conducting the mini-structured interview with 30 informants including 07 policy makers, 06 expert of teacher professional development, 02 experts of school human resource management, 05 school administrators, and 10 school teachers. The conceptual framework of the research will be validated by 05 experts of human resource management in education, teacher professional development, and educational policy makers.

3.2.2 Phase2: To Explore the Desirable State of Teacher Career Pathway in Cambodia Based on the Concept of Authentic Student Achievement

To explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, the researcher will conduct a survey research to ideate a wide variety of possible solutions through generating diverse views.

1) Ideate a wide variety of possible solutions through generating diverse.

The researcher aims at exploring the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement in Cambodia. The questionnaires will be used to collect data from 491 informants including of 40 school administrators and 451 school teachers of pre-school, primary school, lower secondary schools, and upper secondary schools under the supervision of Ministry of Education, Youth and Sport, Kingdom of Cambodia. The study including informants, research instruments, data collection, and data analysis methods were described in detail as follows:

Informants

To obtain the data of desirable state of school teacher career pathway and authentic student achievement in Cambodia, the research questionnaires will be distributed to 491 informants consisting of 40 school administrators and 451 school teachers of public schools of pre-schools, primary schools, lower secondary schools,

and upper secondary schools undertaken the supervision of Ministry of Education, Youth and Sport, Kingdom of Cambodia.

Research Instrument

The research instruments used in this survey is the questionnaire which is drafted in English and then validated by the experts and informants mentioned earlier and approval by the dissertation advisors, the questionnaire will be translated into Khmer and then tested with 30 respondents excluding sample group of the research to confirm its reliability.

1) Questionnaire preparation process.

- (1) Set the purpose of questionnaires.
- (2) Design the questionnaires.
- (3) Key points in the questionnaire: The questionnaire will be divided into 3 parts.

Part 1: General information of the respondents using check list which includes the current status of respondents (school administrators, and school teachers), gender (male or female), age groups (under 30, 30-39 years old, 40-49 years old and older than 50 years old), highest educational qualification, and professional experience and working in education sector.

Part 2: The desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

Part 3: Other suggestions and recommendations, which are the open-ended questions.

Validity and reliability check of the questionnaires

1) Content validity:

1. The researcher will bring the questionnaires to request the advisors to check and give more comments about the content validity, correctness of language used and consistency with research objectives and the conceptual framework.

2. The researcher will adjust the questionnaires based on the advisors' comments.

3. The researcher will bring the revised questionnaires and survey forms to 5 experts in education to check the content validity and the appropriateness of the questionnaires.

4. The researcher will calculate the result of content validity checking to find out the value of Item Objective Congruence (IOC) by using Rovanelle and Hambleton's formula as follows:

Formula

$$IOC = \frac{\sum R}{n}$$

$\sum R$ refers to the total result of expert comments

n refers to the number of all experts

The Score principle

+1=Be sure that all questions in questionnaire are consistent with content to measure

0 =Not sure that all questions in questionnaire are consistent with content to measure

-1=Be sure that all questions in questionnaire are inconsistent with content to measure.

IOC value of the questionnaire from 0.5 or more than 0.5 considered as the good questionnaire that every question point are between 0.60 - 1.00 of IOC value.

2) **Reliability check:** The researcher will translate the questionnaires that already passed the content validity check into Khmer language by comparing the meaning with the questionnaires in English. Then the researcher will bring the translated questionnaires to try out with 30 respondents that are excluded from the research sample. The data obtained from questionnaires try out will be calculated to find the content reliability by using Cronbach' Alpha Coefficient formula as follow:

$$\text{Formula } \alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k s_i^2}{s_t^2} \right)$$

If α Stands for Reliability of coefficients of questionnaires

K stands for the number of questions in questionnaires

$\sum S_i^2$ stands for the sum result of the inconstancy of each questions

$\sum S_t^2$ stands for the sum result of the inconstancy of the whole questionnaire

If Alpha Coefficient values is 0.70 and more, it means that the questionnaires is reliable. So that researcher will be able to proceed to the next phase of data collection by using the questionnaires.

Content Validity

After the approval of the conceptual framework, the researcher proceeds to drafting the questionnaire. The questions in the questionnaire will be checked by five educational specialists for content validity. The content validity check will be employed to validate content comprehension, content accuracy, and content clarity by using IOC index in scoring the items. The IOC index of each items which are retained in development of school teacher career pathway in Cambodia based on the concept of authentic student achievement, should be higher than 0.50 (Sireci, 1998; Turner & Carlson, 2003). In the development of school teacher career pathway in Cambodia based on authentic student achievement, IOC index each item is ranged from 0.8 to 1.00. Hence, the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement is content validated by five experts of teacher professional development, human resource management in education, and educational policy makers. The results of IOC content validity index evaluated by five experts was 0.82 that indicated that it was high value.

Reliabilities

Reliability coefficients will be examined by a pilot study conducted with 30 respondents excluding sample group on the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement. The

adjusted items in the questionnaire depending on experts' recommendations will be tried out. In this process, the reliability coefficient will be examined by using Cronbach's Alpha Coefficients (Gliem & Gliem, 2003). The results of reliability Cronbach's Alpha Coefficients was 0.925 and Cronbach's Alpha Based on Standardized Items was 0.966 that indicated that it was high value to be used for research instrument to collect data.

1) **Questionnaire revision:** The researcher will bring the validity and reliability analysis results to discuss with thesis advisors and revise the questionnaires to become a final version.

Data Collection:

To collect data of desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement for this research study, two main steps are followed. First, the researcher will ask permission from the faculty of education of Chulalongkorn University and the MoEYS in Cambodia and then the researcher will communicate with the respondents in different places for data collection.

1) The researcher will request assistance from research team to proceed to data collection by using questionnaires and survey forms in the target institutions identified by the samples.

2) Researcher's assistant team will go to the target schools to distribute the questionnaires and collect all responded questionnaires back.

Collecting data for the research study will be conducted in the different ways and times to gather information about the appropriateness.

Data Analysis:

The obtained data in phase 2 will be analyzed using descriptive statistics to find out the frequency and percentage of desirable state of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

1) Analysis of data from the questionnaires

Part 1: To analyze the status of the respondents. The researcher will analyze the data using descriptive statistics for frequency and percentage.

Part 2: To analyze the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement using the SPSS for windows program for Descriptive Statistics; Frequency and Percentage.

Part 3: To analyze additional suggestions and comments from respondents, the researcher will use content analysis to define the main ideas from open-ended questions about the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement and also use the descriptive statistics to determine frequency and percentage.

2) Survey data analysis

To analyze general information of the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, descriptive statistics will be used to determine frequency and percentage.

In responsive to the third objective of research, to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement. There are two phases consisting for 1) prototype school teacher career pathway and 2) test the prototype of teacher career pathway in Cambodia based on authentic student achievement through focus group with 11 experts consisting of 4 experts of educational policy makers, 3 experts of school human research management, 3 experts of teacher professional development training and 1 school administrator to evaluate the suitability and feasibility of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

3.2.3 Phase3: To Develop the School Teacher Career Pathway in Cambodia Based on The Concept of Authentic Student Achievement

The development of school teacher career pathway in Cambodia based on the concept authentic student achievement will be constructed 1) to prototype the first draft of school teacher career pathway in Cambodia based on the concept of authentic student

achievement, and 2) to test the prototype of school teacher career pathway in Cambodia based on the concept of authentic student achievement through focus group with 11 experts.

1) Prototype the school teacher career pathway in Cambodia based on the concept of authentic student achievement.

Researcher will discuss the results of the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement and identify the each criteria of each stage of school career pathway with the thesis advisors to prototype the first draft of teacher career pathway in Cambodia based on authentic student achievement.

2) Test the prototype of school teacher career pathway in Cambodia based on the concept of authentic student achievement though focus group.

The researcher will conduct the focus group of 11 experts consisting of 4 experts of educational policy makers, 3 experts of school human resource management, 3 experts of teacher professional development training and 1 school administrator to evaluate the suitability and feasibility of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

Therefore, the opinions and suggestions of experts and stakeholders obtained from the focus group discussion will be synthesized and categorized using content analysis. Consequently, those valuable main ideas will be taken to consult with thesis advisors to define some significant main points for improvement and then finalize the last version of school teacher career pathway based on authentic student achievement.

The experts will be considered to invite to be experts of school human resource management and to validate the first draft of development of teacher career pathway based on student achievement in Cambodia. The experts should have the following criteria: (i) PhD degree; or (ii) Experiences of at least 5 years in relevant fields.

Table 3 Procedures of development of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

Phases of Research	Research Design			Expected results
	Research Method	Instrument Design	Data Analysis Design	
<p>1. To examine the conceptual framework of school teacher career pathway and authentic student achievement</p> <p>1.1 Empathize school teacher career pathway and authentic student achievement</p> <p>1.2 Define the conceptual framework of research</p>	1.1 Review the related document of concepts of teacher career pathway and authentic student achievement.	Form of Document analysis	Analyze and synthesize the contents related to the school teacher career pathway authentic student achievement.	First draft of the conceptual framework of school teacher career pathway and authentic student achievement
	1.2 Validate the conceptual framework by interviewing with 30 respondents including 7 policy makers, 2 experts in school HRM in education, 6 experts in teacher training, 5 school administrators, and 10 teachers	Mini-structured interview Questions.	Content analysis.	1.2.1 The evaluation of suitability of research Conceptual framework 1.2.2 The Conceptual framework of the research
<p>2. To explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement.</p> <p>2.1 Ideate a wide variety of possible solutions through generating diverse views</p>	2.1 Conduct the survey of the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement with 451 informants concluding 40 school administrators and 451 school teachers.	2.1 First draft of questionnaire 2.2 Evaluation Form of questionnaire to find the reliability 2.3 Research Questionnaire	2.1 Validity check of questionnaire 2.2 Reliability check of questionnaire 2.3 Descriptive statistic (Frequency and percentage)	2.1 Desirable states of school teacher career pathway in Cambodia Based on the concept of authentic student achievement in Cambodia.
<p>3. To develop school teacher career pathway based on the concept of authentic student achievement in Cambodia.</p> <p>3.1 Prototype the school teacher career pathway in Cambodia based on the concept of authentic student achievement.</p> <p>3.2 Test the prototype of school teacher career pathway in Cambodia based on the concept of authentic student achievement.</p>	3.1 Design the first draft of school teacher career pathway based on authentic student achievement.	Structure of school teacher career pathway based on authentic student achievement	Synthesize and design the first draft of school teacher career pathway on authentic student achievement	3.1 First draft of school teacher career pathway based on authentic student achievement.
	3.2 Conduct focus group of 11 experts concluding 4 policy makers, 3 experts of teacher professional development, 3 experts of SHRM, and 1 school administrator to evaluate the suitability and feasibility. 3.3 Revising and finalizing school teacher career pathway based on the concept of authentic student achievement.	3.2 Presentation of the draft of school teacher career pathway based on authentic student achievement and evaluation forms	Content analysis	3.2 The evaluation of suitability and feasibility of school teacher career pathway based on authentic student achievement. 3.3 The final version of school teacher career pathway based on the concept of authentic student achievement.

CHAPTER 4

RESULTS OF DATA ANALYSIS

This multi-phase mixed method research design was conducted to fulfil the three main objectives including 1) to examine the conceptual framework of school teacher career pathway and authentic student achievement, 2) to explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, and then 3) to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement. The results of data analysis in this research study fall into three main categories including 1) the conceptual framework of school teacher career pathway and authentic student achievement, and 2) the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, and 3) the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

4.1 The Conceptual Framework of School Teacher Career Pathway and Authentic Student Achievement.

In this study, the researcher employed the following three steps to develop the conceptual framework of school teacher career pathway and authentic student achievement: 1) synthesis of the conceptual framework draft on school teacher career pathway and authentic student achievement from literature review, 2) modification of mini-structured interview with 30 stakeholders in education, and 3) evaluation of the conceptual framework by 5 experts.

4.1.1. Synthesis of the conceptual framework draft on school teacher career pathway and authentic student achievement from literature review.

In this study, the researcher reviewed the concepts of teacher career pathways and authentic student achievement, he concluded that the career pathway is defined as

three areas consisting of teacher position, career pathway of each position, and components of career pathway.

The findings of this study showed that the conceptual framework of school teacher career pathway and authentic student achievement comprises 1) school teacher career pathway, 2) authentic student achievement, 3) development of school teacher career pathway process.

1) School Teacher Career Pathway

School teacher career pathway includes five sub components, namely, 1) teacher position consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers, 2) career pathway consisting of novice teacher, teacher, senior teacher, distinguished teacher, and master teacher, 3) qualification consisting of educational degree, and teaching license, 4) critical developmental experiences consisting of teaching experiences, teacher leadership experiences, research and sharing experiences, and teacher achievement, and 5) competencies consisting of professional knowledge, professional practice, professional development, and professional ethics.

2) Authentic Student Achievement

Authentic student achievement defined by Newmann (1996) referring to authentic achievement of student development in intellectual and behavior through teaching and learning process. The authentic student achievement refers to the achievement of student development in intellectual and behavior through teaching and learning process based on assessment standard of authentic student achievement in terms of 1) construction of knowledge consisting of (1) organization and analysis and (2) consideration of alternatives, 2) disciplined inquiry consisting of (1) disciplinary content and concepts, (2) disciplinary process, and (3) elaborated communication, and 3) value beyond school consisting of (1) problem connected to the world beyond the classroom, and (2) audience beyond the school.

3) Development of School Teacher Career Pathway Process

The design thinking process has been conducted by Plattner (2010) to design a career pathway consisting of 5 phases including 1) emphasize school teacher career pathway and authentic student achievement, 2) define the conceptual framework of research, 3) ideate a wide variety of possible solutions through generating diverse, 4) prototype the school teacher career pathway in Cambodia based on authentic student achievement through survey of desirable states for development of school teacher career pathway, and 5) test the prototype of school teacher career pathway based on authentic student achievement.

4.1.2. Modification of Conceptual Framework

In this study, the conceptual framework was modified by conducting the mini-structured interview with 30 stakeholders in education including 10 teachers, 05 school administrators, 06 experts in teacher training, 02 experts in human resource management, and 07 policy makers in education.

Table 4 Modification of conceptual framework by mini-structured interview

Teacher Career Pathway Components	N	Percent	Rank
1. Teacher position	27	90%	4
2. Career pathways of each teacher position	27	90%	4
3. Qualification	28	93.30%	2
4. Experiences	28	93.93%	2
5. Competencies	30	100%	1

The finding results found that 90% of respondents proposed the teacher career pathway framework should include 03 career positions (pre-school and primary secondary teacher, lower secondary school teacher, and upper secondary school teacher) and 05 professional titles for each career position (Novice teacher, teacher, senior teacher, distinguished teacher, and master teacher) because they thought that that is the first time for Cambodia to make it more simple and feasible for implementation

of teacher career pathway. Regarding the fast track of teacher career pathway for talent teachers, 83% of respondents stated that fast track of school teacher career pathway should be proposed for talent applicants with high potential. It enables to motivate and foster teacher to perform with their best efforts. However, teachers must have at least 3 to 5 years of teaching experience for the first professional title and then they have just fulfilled the criteria requirement of any professional title position. Thus, setting clear and specific criteria requirement for each professional title position should have two tracks 1) common criteria requirement for general applicants, and 2) special criteria requirement for any talent candidate who can fulfill the criteria, they will be promoted.

Particularly, the qualification for teacher career pathway is in the variety of levels such as primary education, lower secondary education, and upper secondary education. In Cambodia, teachers are classified into three categories including category A, category B, and category C.

- 1) Category A is for higher education teachers who work in upper secondary schools and higher education institutes. They graduated with bachelor's degree and studied one more year at National Institute of Education (NIE) (4+1).
- 2) Category B is for basic education teachers who work in lower secondary schools. They graduated in grade 12 and studied two more years at regional or municipal teacher training centers (12+2).
- 3) Category C is for primary education teachers and kindergarten education teachers. The primary education teachers graduated in grade 12 and studied two more years at provincial or municipal teacher training centers (12+2) and kindergarten education teachers graduated in grade 12 and studied two more years at Phnom Penh municipal kindergarten teacher training centers (12+2).

To develop the career pathway for school teachers, the educational qualification should be considered to divide by three categories for the two first titles position. The third title should be started from bachelor's degree plus performance achievement, the

fourth title position should be master's degree, and the last one should be master's degree plus performance achievement or doctoral's degree.

Concerning with teaching license, in Cambodia, it is the implementation of close organization for teacher recruitment. The candidates are selected for teacher training at teacher training institutions including Phnom Penh municipal kindergarten teacher training center, regional or municipal teacher training centers, and national institute of education. Thus, all graduated candidates from those institutes automatically get pedagogical certificates in which are equivalent to teaching license for permanent use of their teaching profession life. Ministry of Education, Youth and Sport has developed the system of teacher education provider standard (TEPS) to respond to open organization system in the future. In the respondents' opinion, 23 respondents (76.66%) proposed to have an open organization and renew teaching license system for every 5 or 10 years in order to respond to disruptive technology, updating knowledge and skills, checking the quality and gaps for development.

Regarding the credential letter for teacher to enter teacher career pathway, (90%) of respondents indicated that credential letter or referenced letter is very essential to show that applicants' behavior in workplace are good. The assessors should be an evaluation committee consisting of school administrators, peer colleagues, students' parents, and honorable community representatives. Additional recommendation from respondents, educational qualification should refer to only certificate holding of teachers and others should be defined as supplementary criterion.

Regarding the critical developmental experiences for teachers to enter teacher career pathway, 93.33% of respondents stated that teaching experiences are one of factors effecting to teaching effectiveness of teachers, thus teaching experiences should be included to the development of teacher career pathway. 66.66% respondents proposed that to apply for professional title position, teachers should have at least 3 to 5 years of teaching experiences. 100% of respondents proposed that professional development mainly need to link to the development of school teacher career pathway, at least 100

hours per each professional title position should be required to promote. 36.66% of respondents proposed that at least 75 hours per each professional title position should be required to be promoted. The concept of professional development for teachers to be promoted such as subject matter areas, teaching methodology, classroom management, leadership and management, educational technology, research methodology, and so on.

The organizational institutions of teacher professional development should be public institutes of teacher training such as national institute of Education, Royal university of Phnom Penh, Regional teacher training center etc.. 30% of respondents proposed that schools should be responsible to conduct school based professional development. The best suitable time to conduct professional development for in-service teachers is vacation because 3 months of vacation is a break time for teachers to prepare everything for their teaching and learning, especially for professional development. Other choice is weekend. The professional development training should be conducted not negative impact on time of instruction. The budget for professional development should be mainly supported by Ministry of Education, Youth and sport, and a part of budget is also responsibility of teachers to develop themselves.

The competencies that enable the increasing of authentic student achievement are in terms of construction of knowledge, disciplined inquiry, and value beyond the school. The findings showed that 100% of respondents totally agreed that the development of school teacher career pathway surely based on authentic student achievement. Additionally, development of school teacher career pathway should include teacher achievement in which deals with instruction and educational issues.

4.1.3. Evaluation of Teacher Career Pathway Conceptual Framework

The conceptual framework of teacher career pathway was individually evaluated by five experts of human resource management in education, teacher professional development and educational policy makers. The results of evaluation that validity check of the conceptual framework was at high suitability. However, the suggestions to improve the questionnaire were shown as follow:

1) Teacher position should be divided into 3 categories consisting of pre-school and primary school teacher, lower secondary school teacher, and upper secondary school teacher. Three categories are based on the system of civil servants in Cambodia for education.

2) Career pathway of each position should be promoted as professional titles and incentives support starting from senior teacher, distinguished teacher, and master teacher.

3) Educational qualification for teachers to be promoted should hold associate degree for pre-school teachers only, and others should start from bachelor's degree.

4.2 The Desirable States of School Teacher Career Pathway in Cambodia Based on the Concept of Authentic Student Achievement.

The results of the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement falls into four parts including 1) personal details of respondents, 2) sequence of teacher positions and career pathway titles, 3) components of career pathways as follow:

4.2.1 Personal details of respondents

Table 7 shows that there were 491 respondents divided into two main groups consisting of 40 school administrators (8%) and 451 teachers (92%). The first group comprises of 17 administrators at primary education, 14 administrators at lower secondary education, and 9 administrators at upper secondary education. The second group comprises of 183 teachers at primary education, 136 teachers at lower education, 132 teachers at upper secondary education. The respondents are 262 females (53%) and 229 males (47%). The biggest group of respondents is 161 people (33%) whose ages are between 30-39 years old, followed by 148 people (30%) whose ages are between 40-49 years old, and the smallest group of respondents is 63 people (13%) whose ages are over 50 years old. The most of respondents' educational degree is 325 people (66%) who hold

bachelor's degree, followed by 110 people (22%) who hold below bachelor's degree, and then 56 people (11%) who hold master's degree, and no one who holds doctoral degree at all. The biggest group of 154 respondents (31%) has served their current position for more than 20 years, followed by 113 people (23%) who have served for between 0-5 years, and then 85 people (17%) who have served for between 16-20 years, and 76 people (15%) who have served for between 6-10 years, and the smallest group of respondents is 63 people (13%) who have served for between 11-15 years.



Table 5 Number and Percentage of Respondents

Educational Level General Information	Primary Education				Lower Secondary Education				Upper Secondary Education				Sub Total		Grand Total			
	Administrator		Teacher		Administrator		Teacher		Administrator		Teacher		Administrator		Teacher			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%		
Sex																		
Male	12	6%	53	27%	10	7%	66	44%	8	6%	80	57%	30	6%	199	41%	229	47%
Female	5	3%	130	65%	4	3%	70	47%	1	1%	52	37%	10	2%	252	51%	262	53%
Sub Total	17	9%	183	92%	14	9%	136	91%	150	100%	132	94%	40	8%	451	92%	491	100%
Age																		
Below 30	0	0%	37	19%	1	1%	26	17%	27	18%	1	1%	54	38%	2	0%	117	24%
30-39	1	1%	54	27%	1	1%	47	31%	48	32%	5	4%	53	38%	7	1%	154	31%
40-49	10	5%	68	34%	5	3%	39	26%	44	29%	2	1%	24	17%	17	3%	131	27%
Over 50	6	3%	24	12%	7	5%	24	16%	31	21%	1	1%	1	1%	14	3%	49	10%
Sub Total	17	9%	183	92%	14	9%	136	91%	150	100%	9	6%	132	94%	40	8%	451	92%
Highest Level of Education																		
Below Bachelor Degree	3	2%	56	28%	4	3%	47	31%	51	34%	0	0%	0	0%	7	1%	103	21%
Bachelor Degree	10	5%	111	56%	9	6%	84	56%	93	62%	3	2%	108	77%	22	4%	303	62%
Master Degree	4	2%	16	8%	1	1%	5	3%	6	4%	6	4%	24	17%	11	2%	45	9%
Doctoral Degree	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Sub Total	17	9%	183	92%	200	100%	14	9%	136	91%	150	100%	9	6%	132	94%	40	8%
Length of Years in Current Position																		
0-5	3	2%	29	15%	2	1%	18	12%	20	13%	5	4%	56	40%	10	2%	103	21%
6-10	2	1%	20	10%	3	2%	23	15%	26	17%	1	1%	27	19%	6	1%	70	14%
11-15	0	0%	21	11%	4	3%	24	16%	28	19%	0	0%	14	10%	4	1%	59	12%
16-20	1	1%	37	19%	2	1%	22	15%	24	16%	2	1%	21	15%	5	1%	80	16%
Over 20	11	6%	76	38%	87	44%	3	2%	49	33%	1	1%	14	10%	15	3%	139	28%
Sub Total	17	9%	183	92%	200	100%	14	9%	136	91%	150	100%	9	6%	132	94%	40	8%

4.2.2 Sequence of teacher position and career pathway

In this study, the sequence of teacher position and career pathway titles are showed in the table 8 below:

Table 6 Table Teacher Position and Teacher Career Pathway titles

Categories	Teacher Position		Total	Career Pathway Titles		Total	
	Yes	No		Yes	No		
1.Primary Education							
School Administrator	N	16	1	17	17	0	17
	%	8.00%	0.50%	8.50%	8.50%	0.00%	8.50%
Kindergarten Teacher	N	49	0	49	48	1	49
	%	24.50%	0.00%	24.50%	24.00%	0.50%	24.50%
Primary Teacher	N	127	7	134	134	0	134
	%	63.50%	3.50%	67.00%	67.00%	0.00%	67.00%
Total	N	192	8	200	199	1	200
	%	96%	4.00%	100%	99.50%	0.50%	100%
2.lower Secondary Education							
School Administrator	N	14	0	14	13	1	14
	%	9.33%	0.00%	9.33%	8.67%	0.67%	9.33%
Teacher	N	135	1	136	131	5	136
	%	90.00%	0.67%	90.67%	87.33%	3.33%	90.67%
Total	N	149	1	150	144	6	150
	%	99%	1%	100%	96%	4%	100%
3.Upper Secondary Education							
School Administrator	N	8	1	9	9	0	9
	%	5.67%	0.71%	6.38%	6.38%	0.00%	6.38%
Teacher	N	127	5	132	130	2	132
	%	90.07%	3.55%	93.62%	92.20%	1.42%	93.62%
Total	N	135	6	141	139	2	141
	%	96%	4%	100%	99%	1%	100%
Grand total	N	476	15	491	482	9	491
Average %	%	97%	3%	100%	98%	2%	100%
Average %	%	97%	3%	100%	98%	2%	100%

Table 6 shows that most of respondents, 476 people (97%), agree on teacher position in which were categorized into three groups consisting of pre-school and primary education teacher, lower secondary education teacher, and upper secondary education teacher. As shown in table 6, it is described that the respondents of lower secondary education, 149 people (99%) out of 150 respondents, strongly agree, followed

by primary education, 192 people (96%) out of 150 respondents, and upper secondary education, 135 people (96%) of out 141 respondents.

In addition, the table 8 also shows that most of respondents, 482 people (98%) strongly agree on teacher career pathway titles in which were proposed five professional titles consisting of novice teacher, teacher, senior teacher, distinguished teacher and master teacher. As shown in table 6, it is described that the respondents of primary education teacher, 199 people (99.50%) out of 200 respondents, strongly agree on, followed by upper secondary education, 139 people (99%) out of 141 respondents, and then 144 people (96%) out of 150 respondents.

4.2.3 Components of Career Pathway

The components of school teacher career pathway in Cambodia falls into four parts including 1) qualification, 2) critical developmental experiences, and 3) competencies of teachers increasing authentic student achievement as follow:

4.2.3.1 Qualification

Educational qualification degree for entering career pathway in primary education, lower secondary education, and upper secondary education.

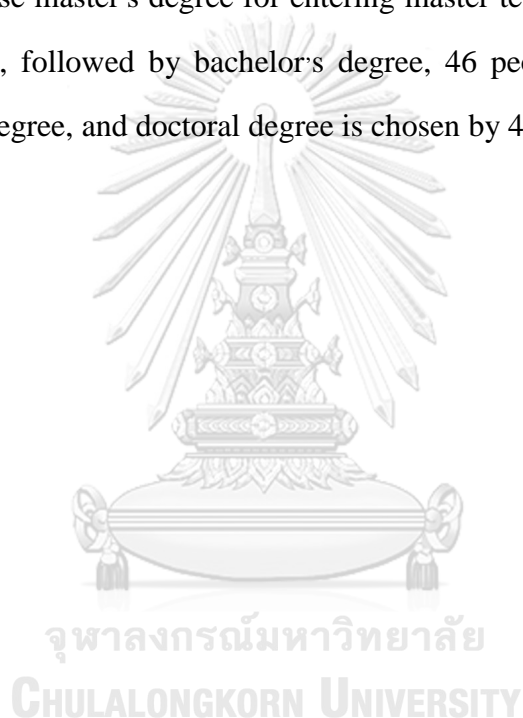
Primary Education

Table 7 Educational Qualification Degree for Entering Teacher Career Pathway in Primary Education

Qualification Career pathway	Associate Degree		Bachelor Degree		Master Degree		Doctoral Degree	
	N	%	N	%	N	%	N	%
Novice Teacher								
School Administrator	14	7%	3	2%	-	0%	-	0%
Kindergarten Teacher	26	13%	23	12%	-	0%	-	0%
Primary Teacher	80	40%	54	27%	-	0%	-	0%
Total	120	60%	80	40%	0	0%	0	0%
Teacher								
School Administrator	3	2%	14	7%	0	0%	0	0%
Kindergarten Teacher	4	2%	45	23%	0	0%	0	0%
Primary Teacher	13	7%	121	61%	0	0%	0	0%
Total	20	10%	180	90%	0	0%	0	0%
Senior Teacher								
School Administrator	0	0%	16	8%	1	1%	0	0%
Kindergarten Teacher	2	1%	43	22%	4	2%	0	0%
Primary Teacher	3	2%	123	62%	8	4%	0	0%
Total	5	3%	182	91%	13	7%	0	0%
Distinguished Teacher								
School Administrator	0	0%	8	4%	9	5%	0	0%
Kindergarten Teacher	1	1%	21	11%	27	14%	0	0%
Primary Teacher	2	1%	55	28%	77	39%	0	0%
Total	3	2%	84	42%	113	57%	0	0%
Master Teacher								
School Administrator	0	0%	4	2%	11	6%	2	1%
Kindergarten Teacher	1	1%	5	3%	43	22%	0	0%
Primary Teacher	2	1%	37	19%	93	47%	2	1%
Total	3	2%	46	23%	147	74%	4	2%

Table 7 shows that the biggest group of respondents, 120 people (60%), choose the associate degree for entering novice teacher of career pathway in primary education, followed by bachelor's degree, 80 respondents (40%), and others are not chosen. Table 7 also shows that the most of respondents, 180 people (90%), choose bachelor's degree for entering teacher of career pathway in primary education, followed by 20 people (10%) choose associate degree, and others are not chosen. For senior teacher, the biggest

group of respondents, 182 people (91%) choose bachelor's degree for entering senior teacher of career pathway in primary education, followed by associate degree, there are 5 people (3%), 13 people (7%) choose master's degree, and doctoral degree is not chosen. For distinguished teacher, the most of respondents, 113 people (57%), choose master's degree for entering distinguished teacher of career pathway in primary education, followed by bachelor's degree, 84 people (42%), 03 people (2%) choose associate degree, and doctoral degree is not chosen. For Master teacher, the most of respondents, 147 people (74%), choose master's degree for entering master teacher of career pathway in primary education, followed by bachelor's degree, 46 people (23%), 03 people (2%) choose associate degree, and doctoral degree is chosen by 4 people (2.3%).



Lower Secondary Education

Table 8 Educational Qualification Degree for Entering Teacher Career Pathway in Lower Secondary School teacher.

Teacher Position	Associate Degree		Bachelor's degree		Master's degree		Doctoral Degree	
	N	%	N	%	N	%	N	%
Novice Teacher								
School Administrator	4	3%	10	7%	0	0%	0	0%
Teacher	92	61%	44	29%	0	0%	0	0%
Total	96	64%	54	36%	0	0%	0	0%
Teacher								
School Administrator	0	0%	14	9%	0	0%	0	0%
Teacher	29	19%	106	71%	1	1%	0	0%
Total	29	19%	120	80%	1	1%	0	0%
Senior Teacher								
School Administrator	0	0%	7	5%	7	5%	0	0%
Teacher	8	5%	97	65%	31	21%	0	0%
Total	8	5%	104	69%	38	25%	0	0%
Distinguished Teacher								
School Administrator	0	0%	3	2%	11	7%	0	0%
Teacher	7	5%	50	33%	78	52%	1	1%
Total	7	5%	53	35%	89	59%	1	1%
Master Teacher								
School Administrator	1	1%	2	1%	4	3%	7	5%
Teacher	10	7%	26	17%	74	49%	26	17%
Total	11	7%	28	19%	78	52%	33	22%

Table 8 shows that the biggest group of respondents, 96 people (64%) choose the associate degree for entering novice teacher of career pathway in lower education, followed by bachelor's degree, 54 respondents (36%), and others are not chosen. Table 8 also shows that the most of respondents, 120 people (80%), choose bachelor's degree for entering teacher of career pathway in lower secondary education, followed by associate degree, 29 people (19%), 1 person (1%) chooses master's degree, and doctoral degree is not chosen. For senior teacher, the biggest group of respondents, 104 people (69%) choose bachelor's degree for entering senior teacher of career pathway in lower secondary education, followed by master's degree, 38 people (25%), 08 people (5%) choose associate degree, and doctoral degree is not chosen. For distinguished teacher,

the most of respondents, 89 people (59%), choose master's degree for entering distinguished teacher of career pathway in lower secondary education, followed by bachelor's degree, 53 people (35%), 07 people (5%) choose associate degree, and doctoral degree is chosen by 1 person (1%). For Master teacher, the most of respondents, 78 people (52%), choose master's degree for entering master teacher of career pathway in lower secondary education, followed by doctoral degree 33 people (22%), and then bachelor's degree, 28 people (19%), and 11 people (7%) choose associate degree.

Upper Secondary Education

Table 9 Educational Qualification Degree for Entering Teacher Career Pathway in Upper Secondary Education.

Teacher Position	Associate Degree		Bachelor Degree		Master Degree		Doctoral Degree	
	N	%	N	%	N	%	N	%
Novice Teacher								
School Administrator	0	0%	9	6%	0	0%	0	0%
Teacher	1	1%	130	92%	1	1%	0	0%
Total	1	1%	139	99%	1	1%	0	0%
Teacher								
School Administrator	0	0%	6	4%	3	2%	0	0%
Teacher	0	0%	119	84%	13	9%	0	0%
Total	0	0%	125	89%	16	11%	0	0%
Senior Teacher								
School Administrator	0	0%	2	2%	7	5%	0	0%
Teacher	0	0%	61	46%	70	53%	1	1%
Total	0	0%	63	48%	77	58%	1	1%
Distinguished Teacher								
School Administrator	0	0%	0	0%	8	6%	1	1%
Teacher	0	0%	32	23%	93	66%	7	5%
Total	0	0%	32	23%	101	72%	8	6%
Master Teacher								
School Administrator	0	0%	0	0%	5	4%	4	3%
Teacher	1	1%	21	15%	62	44%	48	34%
Total	1	1%	21	15%	67	48%	52	37%

Table 9 shows that the most of respondents, 139 people (99%), choose bachelor's degree for entering novice teacher of career pathway in upper secondary education,

followed by associate degree and master's degree, 1 person (1%), and doctoral degree not chosen. The table 9 also shows that the most of respondents, 125 people (89%), choose bachelor's degree for entering teacher of career pathway in upper secondary education, followed by master's degree, 16 people (11%), and others are not chosen. For senior teacher, the biggest group of respondents, 77 people (58%) choose master's degree for entering senior teacher of career pathway in upper secondary education, followed by bachelor's degree, 63 people (48%), and then 1 person (1%) choose doctoral degree, and associate degree is not chosen. For distinguished teacher, the most of respondents, 101 people (72%), choose master's degree for entering distinguished teacher of career pathway upper secondary education, followed by bachelor's degree, 32 people (23%), and then 08 people (6%) choose doctoral degree, and associate degree is not chosen. For Master teacher, the biggest group of respondents, 67 people (48%), choose master's degree for entering master teacher of career pathway in upper secondary education, followed by doctoral degree, 52 people (37%), and then bachelor's degree, 21 people (15%), and 01 person (1%) choose associate degree.



b. Teaching License for Entering Career Pathway

Table 10 Teaching License for Entering School Teacher Career Pathways

Teacher Position		Teaching License		Total
		Yes	No	
1.Primary Education				
School Administrator	N	15	2	17
	%	7.50%	1.00%	8.50%
Kindergarten Teacher	N	48	1	49
	%	24.00%	0.50%	24.50%
Primary Teacher	N	134	0	134
	%	67.00%	0.00%	67.00%
Total	N	197	3	200
	%	98.50%	1.50%	100%
2.lower Secondary Education				
School Administrator	N	14	0	14
	%	9.33%	0.00%	9.33%
Teacher	N	135	1	136
	%	90.00%	0.67%	90.67%
Total	N	149	1	150
	%	99%	1%	100%
3.Upper Secondary Education				
School Administrator	N	9	0	9
	%	6.38%	0.00%	6.38%
Teacher	N	131	1	132
	%	92.91%	0.71%	93.62%
Total	N	140	1	141
	%	99%	1%	100%
Grand total	N	486	5	491
Average %	%	99%	1%	100%

Table 10 shows that the most of respondents, 486 people (99%), strongly agree on teaching license for entering school teacher career pathways. As shown in table 10, it is described that the most of respondents of upper secondary education, 140 people (99%) out of 141 respondents and lower secondary education, 149 people (99%) out of 150 respondents, strongly agree, followed by primary education, 197 people (95.50%) out of 200 respondents.

c. Credential Letter for Entering Career Pathway

Table 11 Credential Letter for Entering School Teacher Career Pathways

Teacher Position		Credential Letter		Total	
		Yes	No		
1.Primary Education					
School Administrator	N	17	0	17	
	%	8.50%	0.00%	8.50%	
Kindergarten Teacher	N	48	1	49	
	%	24.00%	0.50%	24.50%	
Primary Teacher	N	134	0	134	
	%	67.00%	0.00%	67.00%	
Total	N	199	1	200	
	%	99.50%	0.50%	100%	
2.lower Secondary Education					
School Administrator	N	14	0	14	
	%	9.33%	0.00%	9.33%	
Teacher	N	135	1	136	
	%	90.00%	0.67%	90.67%	
Total	N	149	1	150	
	%	99%	1%	100%	
3.Upper Secondary Education					
School Administrator	N	9	0	9	
	%	6.38%	0.00%	6.38%	
Teacher	N	130	2	132	
	%	92.20%	1.42%	93.62%	
Total	N	139	2	141	
	%	99%	1%	100%	
Grand total		N	487	4	491
Average %		%	99%	1%	100%

Table 11 shows that the most of respondents, 487 people (99%), strongly agree on credential letter for entering school teacher career pathways. As shown in table 11, it is described that the most of respondents of primary education, 199 people (99.50%) out of 200 respondents, followed by lower secondary education, 149 people (99%) out of 150 respondents and upper secondary education, 487 people (99%) out of 141 respondents

4.2.3.2 Critical Developmental Experiences

1. Teaching Experience

Primary Education

Table 12 Teaching Experiences for Entering at Each Stage of School Teacher Career Pathway in Primary Education.

Teacher Position	0 Year		1-5 Years		6-10 Years		11-15 Years		16-20 Years		Over 20 Years	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	6	3%	10	5%	1	1%	0	0%	0	0%	0	0%
Kindergarten Teacher	26	13%	22	11%	1	1%	0	0%	0	0%	0	0%
Primary Teacher	46	23%	88	44%	0	0%	0	0%	0	0%	0	0%
Total	78	39%	120	60%	2	1%	0	0%	0	0%	0	0%
Teacher												
School Administrator	0	0%	13	7%	3	2%	1	1%	0	0%	0	0%
Kindergarten Teacher	1	1%	34	17%	13	7%	0	0%	1	1%	0	0%
Primary Teacher	4	2%	102	51%	26	13%	2	1%	0	0%	0	0%
Total	5	3%	149	75%	42	21%	3	2%	1	1%	0	0%
Senior Teacher												
School Administrator	0	0%	1	1%	13	7%	2	1%	1	1%	0	0%
Kindergarten Teacher	0	0%	14	7%	25	13%	9	5%	1	1%	0	0%
Primary Teacher	0	0%	29	15%	84	42%	20	10%	1	1%	0	0%
Total	0	0%	44	22%	122	61%	31	16%	3	2%	0	0%
Distinguished Teacher												
School Administrator	0	0%	1	1%	8	4%	7	4%	1	1%	0	0%
Kindergarten Teacher	0	0%	6	3%	18	9%	22	11%	3	2%	0	0%
Primary Teacher	0	0%	15	8%	60	30%	47	24%	11	6%	1	1%
Total	0	0%	22	11%	86	43%	76	38%	15	8%	1	1%
Master Teacher												
School Administrator	0	0%	1	1%	5	3%	5	3%	5	3%	1	1%
Kindergarten Teacher	0	0%	4	2%	10	5%	17	9%	17	9%	1	1%
Primary Teacher	0	0%	10	5%	44	22%	39	20%	34	17%	7	4%
Total	0	0%	15	8%	59	30%	61	31%	56	28%	9	5%

Table 12 shows that the most of respondents, 120 people (60%), choose between 1-5 years teaching experiences for entering novice teacher of career pathway in primary education, followed by 78 people (39%) choose 0 years in teaching experiences, and others are not chosen. The table 12 also shows that the most of respondents, 149 people

(75%), choose between 1-5 years teaching experiences for entering teacher of career pathway in primary education, followed by 42 people (21%) choose between 6-10 years in teaching experiences, and then 5 people (3%) choose 0 year in teaching experience, 3 people (2%) choose between 11-15 years in teaching experiences, 1 person chooses between 16-20 years in teaching experiences, and other is not chosen. According to the table 12, most of respondents, 122 people (61%), choose between 6-10 years in teaching experiences for entering senior teacher of career pathway in primary education, followed by 44 people (22%) choose between 1-5 years in teaching experiences, and then 31 people (16%) choose between 11-15 years in teaching experiences, 03 people (2%) choose between 16-20 years in teaching experiences, and others are not chosen. For distinguished teacher, most of respondents, 86 people (43%), choose between 6-10 years in teaching experiences for entering distinguished teacher of career pathway in primary education, followed by 76 people (38%) choose between 11-15 years in teaching experiences, and then 22 people (11%) choose between 1-5 years in teaching experiences, 15 people (8%) choose between 16-20 years in teaching experiences, 1 person (1%) chooses over 20 years in teaching experiences, and 0 years in teaching experience is not chosen. For master teacher, most of respondents, 61 people (31%), choose between 11-15 years in teaching experiences for entering master teacher of career pathway in primary education, followed by 56 people (28%) choose between 16-20 years in teaching experiences, and then 59 people (30%) choose between 1-5 years in teaching experiences, 15 people (8%) choose between 6-10 years in teaching experiences, 15 people (8%) chooses between 1-5 years in teaching experiences, and 9 people (5%) choose over 20 years in teaching experiences.

Lower Secondary Education

Table 13 Teaching Experiences for Entering at Each Stage of School Teacher Career Pathway in Lower Secondary Education

Teacher Position	0 Year		1-5 Years		6-10 Years		11-15 Years		16-20 Years		Over 20 Years	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	5	3%	9	6%	0	0%	0	0%	0	0%	0	0%
Teacher	61	41%	74	49%	1	1%	0	0%	0	0%	0	0%
Total	66	44%	83	55%	1	1%	0	0%	0	0%	0	0%
Teacher												
School Administrator	0	0%	12	8%	2	1%	0	0%	0	0%	0	0%
Teacher	8	5%	88	59%	38	25%	2	1%	0	0%	0	0%
Total	8	5%	100	67%	40	27%	2	1%	0	0%	0	0%
Senior Teacher												
School Administrator	0	0%	2	1%	10	7%	2	1%	0	0%	0	0%
Teacher	1	1%	27	18%	67	45%	37	25%	4	0%	0	0%
Total	1	1%	29	19%	77	51%	39	26%	4	0%	0	0%
Distinguished Teacher												
School Administrator	0	0%	2	1%	7	5%	2	1%	3	2%	0	0%
Teacher	1	1%	10	7%	44	29%	53	35%	24	16%	4	3%
Total	1	1%	12	8%	51	34%	55	37%	27	18%	4	3%
Master Teacher												
School Administrator	0	0%	2	1%	3	2%	3	2%	5	3%	1	1%
Teacher	1	1%	9	6%	30	20%	36	24%	42	28%	18	12%
Total	1	1%	11	7%	33	22%	39	26%	47	31%	19	13%

Table 13 shows that the most of respondents, 83 people (55%), choose between 1-5 years teaching experiences for entering novice teacher of career pathway in lower secondary education, followed by 66 people (44%) choose 0 year in teaching experiences, and then 01 person (1%) choose between 6-10 years in teaching experiences, and others are not chosen. The table 13 also shows that the most of respondents, 100 people (67%), choose between 1-5 years teaching experiences for entering teacher of career pathway in lower secondary education, followed by 40 people (27%) choose between 6-10 years in teaching experiences, and then 08 people (5%) choose 0 year in teaching experiences, 02 people (1%) choose between 11-15 years in teaching experiences, and others are not

chosen. In addition, table 13 shows that the most of respondents, 77 people (51%), choose between 6-10 years in teaching experiences for entering senior teacher of career pathway in lower secondary education, followed by 33 people (26%) choose between 11-15 years in teaching experiences, and then 29 people (19%) choose between 1-5 years in teaching experiences, 04 people (3%) choose between 16-20 years in teaching experiences, 01 person (1%) choose 0 year in teaching experiences, and other is not chosen. For distinguished teacher, the most of respondents, 55 people (37%) choose between 11-15 years in teaching experiences, followed by 51 people (34%) choose between 6-10 years in teaching experiences, and then 27 people (18%) choose between 16-20 years in teaching experiences, 04 people (3%) choose more than 20 years in teaching experiences, and other is chosen by 01 person (1%). Entering master teacher of career pathway in lower secondary education is choose by 47 people (31%) between 16-20 years in teaching experiences, 39 people (26%) between 11-15 years in teaching experiences, 33 people (22%) between 6-11 years in teaching experiences, 19 people (13%) more than 20 years, 11 people (7%) between 1-5 years in teaching experiences, and 01 person (1%) 0 year in teaching experiences.

Upper Secondary Education

Table 14 Teaching Experiences for Entering at Each Stage of School Teacher Career Pathway in Upper Secondary Education.

Teacher Position	0 Year		1-5 Years		6-10 Years		11-15 Years		16-20 Years		Over 20 Years	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	4	3%	5	4%	0	0%	0	0%	0	0%	0	0%
Teacher	80	57%	51	36%	1	1%	0	0%	0	0%	0	0%
Total	84	60%	56	40%	1	1%	0	0	0	0	0	0
Teacher												
School Administrator	1	1%	6	4%	2	1%	0	0%	0	0%	0	0%
Teacher	9	6%	107	76%	16	11%	0	0%	0	0%	0	0%
Total	10	7%	113	80%	18	13%	0	0	0	0	0	0
Senior Teacher												
School Administrator	0	0%	2	1%	5	4%	1	1%	1	1%		0%
Teacher	4	3%	43	30%	73	52%	11	8%	1	1%		0%
Total	4	3%	45	32%	78	55%	12	9%	2	1%	0	0
Distinguished Teacher												
School Administrator	0	0%	1	1%	1	1%	5	4%	2	1%	0	0%
Teacher	4	3%	18	13%	56	40%	47	33%	6	4%	1	1%
Total	4	3%	19	13%	57	40%	52	37%	8	6%	1	1%
Master Teacher												
School Administrator	0	0%	1	1%	1	1%	0	0%	5	4%	2	1%
Teacher	4	3%	13	9%	42	30%	32	23%	33	23%	8	6%
Total	4	3%	14	10%	43	30%	32	23%	38	27%	10	7%

Table 14 shows that the most of respondents, 84 people (60%), choose 0 year in teaching experiences for entering novice teacher of career pathway in upper secondary education, followed by 56 people (40%) choose between 1-5 years in teaching experiences, and then 01 person (1%) choose between 6-10 years teaching experiences, and others are not chosen. The table 14 also shows that the biggest group of respondents, 113 people (80%), choose between 1-5 years in teaching experiences for entering teacher of career pathway in upper secondary education, followed by 18 people (13%), choose between 6-10 years in teaching experiences, and then 10 people (7%), choose 0 year in teaching experiences, and others are not chosen. For senior teacher, most of

respondents, 78 people (55%), choose between 6-10 years in teaching experiences for entering senior teacher of career pathway in upper secondary education, followed by 45 people (32%) choose between 1-5 years in teaching experience, and then 12 people (9%) choose between 11-15 years in teaching experiences, 04 people (3%) choose 0 year in teaching experiences, 02 people (1%) choose between 16-20 years in teaching experiences, and other is not chosen. For distinguished teacher, most of respondents, 57 people (40%), choose between 6-10 years in teaching experiences for entering distinguished teacher in upper secondary education, followed by 52 people (37%) choose between 11-15 years in teaching experiences, and then 19 people (13%) choose between 1-5 years in teaching experiences, 08 people (6%) choose between 16-20 years in teaching experiences, 04 people (3%) choose 0 year in teaching experiences, and 01 person (1%) choose over 20 years in teaching experiences. For master teacher, the most of respondents, 43 people (30%), choose between 6-10 years in teaching experiences for entering master teacher in upper secondary education, followed by 38 people (27%) choose between 16-20 years in teaching experiences, and then 32 people (23%) choose between 11-15 years in teaching experiences, 10 people (7%) choose between over 20 years in teaching experiences, and 04 people (3%) choose 0 year in teaching experiences.

2. Teacher Leadership Experiences for Entering Career Pathway

Primary Education

Table 15 Teacher Leadership Experiences for Entering at Each Stage of School Teacher Career Pathway in Primary Education.

Educational Level	0 Year		1-5 Years		6-10 Years		11-15 Years		16-20 Years		Over 20 Years	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	6	3%	11	6%	0	0%	0	0%	0	0%	0	0%
Kindergarten Teacher	19	10%	28	14%	2	1%	0	0%	0	0%	0	0%
Primary Teacher	48	24%	82	41%	4	2%	0	0%	0	0%	0	0%
Total	73	37%	121	61%	6	3%	0	0%	0	0%	0	0%
Teacher												
School Administrator	0	0%	13	7%	4	2%	0	0%	0	0%	0	0%
Kindergarten Teacher	0	0%	31	16%	18	9%	0	0%	0	0%	0	0%
Primary Teacher	1	1%	96	48%	35	18%	2	1%	0	0%	0	0%
Total	1	1%	140	70%	57	29%	2	1%	0	0%	0	0%
Senior Teacher												
School Administrator	0	0%	0	0%	14	7%	3	2%	0	0%	0	0%
Kindergarten Teacher	0	0%	10	5%	30	15%	9	5%	0	0%	0	0%
Primary Teacher	0	0%	37	19%	69	35%	27	14%	1	1%	0	0%
Total	0	0%	47	24%	113	57%	39	20%	1	1%	0	0%
Distinguished Teacher												
School Administrator	0	0%	0	0%	10	5%	5	3%	2	1%	0	0%
Kindergarten Teacher	0	0%	4	2%	22	11%	20	10%	3	2%	0	0%
Primary Teacher	0	0%	23	12%	64	32%	35	18%	12	6%	0	0%
Total	0	0	27	14%	96	48%	60	30%	17	9%	0	0
Master Teacher												
School Administrator	0	0%	0	0%	7	4%	5	3%	4	2%	1	1%
Kindergarten Teacher	0	0%	1	1%	15	8%	17	9%	14	7%	2	1%
Primary Teacher	0	0%	20	10%	45	23%	39	20%	23	12%	7	4%
Total	0	0%	21	11%	67	34%	61	31%	41	21%	10	5%

Table 15 shows that the most of respondents, 121 people (61%), choose between 1-5 years in teacher leadership experiences for entering novice teacher of career pathway in primary education, followed by 73 people (37%) choose between 0 year in teacher leadership experiences, and then 06 people (3%) choose between 6-10 years teacher leadership experiences, and others are not chosen. The table 15 also shows that the

biggest group of respondents, 140 people (70%), choose between 1-5 years in teacher leadership experiences for entering teacher of career pathway in primary education, followed by 57 people (29%), choose between 6-10 years in teacher leadership experiences, and then 02 people (1%), choose between 11-15 years in teacher leadership experiences, only 01 person (1%) chooses 0 year in teacher leadership experiences and other is not chosen. For senior teacher, most of respondents, 113 people (57%), choose between 6-10 years in teacher leadership experiences for entering senior teacher of career pathway in primary education, followed by 47 people (24%) choose between 1-5 years in teacher leadership experience, and then 39 people (20%) choose between 11-15 years in teacher leadership experiences, only 01 person (1%) chooses between 16-20 years in teacher leadership experiences, and others are not chosen. For distinguished teacher, most of respondents, 96 people (48%), choose between 6-10 years in teacher leadership experiences for entering distinguished teacher in primary education, followed by 60 people (30%) choose between 11-15 years in teacher leadership experiences, and then 27 people (14%) choose between 1-5 years in teaching experiences, 17 people (9%) choose between 16-20 years in teacher leadership experiences, and others are not chosen. For master teacher, the most of respondents, 67 people (34%), choose between 6-10 years in teacher leadership experiences for entering master teacher in primary education, followed by 61 people (31%) choose between 11-15 years in teacher leadership experiences, and then 41 people (21%) choose between 16-20 years in teacher leadership experiences, 21 people (11%) choose between 1-5 years in teacher leadership experiences, 10 people (5%) choose over 20 years in teacher leadership experiences, and other is not chosen.

Lower Secondary Education

Table 16 Teacher Leadership Experiences for Entering at Each Stage of School Teacher Career Pathway in Lower Secondary Education.

Educational Level	0 Year		1-5 Years		6-10 Years		11-15 Years		16-20 Years		Over 20 Years	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	4	3%	10	7%	0	0%	0	0%	0	0%	0	0%
Primary Teacher	57	38%	78	52%	1	1%	0	0%	0	0%	0	0%
Total	61	41%	88	59%	1	1%	0	0%	0	0%	0	0%
Teacher												
School Administrator	1	1%	9	6%	4	3%	0	0%	0	0%	0	0%
Primary Teacher	5	3%	99	66%	32	21%	0	0%	0	0%	0	0%
Total	6	4%	108	72%	36	24%	0	0%	0	0%	0	0%
Senior Teacher												
School Administrator	0	0%	4	3%	7	5%	3	2%	0	0%	0	0%
Primary Teacher	0	0%	34	23%	75	50%	26	17%	1	1%	0	0%
Total	0	0%	38	25%	82	55%	29	19%	1	1%	0	0%
Distinguished Teacher												
School Administrator	0	0%	1	1%	9	6%	3	2%	1	1%	0	0%
Primary Teacher	0	0%	17	11%	44	29%	55	37%	20	13%	0	0%
Total	0	0%	18	12%	53	35%	58	39%	21	14%	0	0%
Master Teacher												
School Administrator	0	0%	1	1%	7	5%	2	1%	2	1%	2	1%
Primary Teacher	1	1%	12	8%	32	21%	41	27%	37	25%	13	9%
Total	1	1%	13	9%	39	26%	43	29%	39	26%	15	10%

Table 16 shows that the most of respondents, 88 people (59%), choose between 1-5 years in teacher leadership experiences for entering novice teacher of career pathway in lower secondary education, followed by 61 people (41%) choose 0 year in teacher leadership experiences, and then 01 person (1%) chooses between 6-10 years teacher leadership experiences, and others are not chosen. The table 16 also shows that the biggest group of respondents, 108 people (72%), choose between 1-5 years in teacher leadership experiences for entering teacher of career pathway in lower secondary education, followed by 36 people (24%), choose between 6-10 years in teacher leadership experiences, and then 06 people (4%), choose 0 year in teacher leadership experiences, and others are not chosen. For senior teacher, most of respondents, 82 people (55%),

choose between 6-10 years in teacher leadership experiences for entering senior teacher of career pathway in lower secondary education, followed by 38 people (25%) choose between 1-5 years in teacher leadership experience, and then 29 people (19%) choose between 11-15 years in teacher leadership experiences, 01 person (1%) chooses between 16-20 years in teacher leadership experiences, and others are not chosen. For distinguished teacher, most of respondents, 58 people (39%), choose between 6-10 years in teacher leadership experiences for entering distinguished teacher in lower secondary education, followed by 53 people (35%) choose between 6-10 years in teacher leadership experiences, and then 21 people (14%) choose between 16-20 years in teaching experiences, 18 people (12%) choose between 1-5 years in teacher leadership experiences, and others are not chosen. For master teacher, the most of respondents, 43 people (29%), choose between 11-15 years in teacher leadership experiences for entering master teacher in lower secondary education, followed by 39 people (26%) choose between 06-10 years and 16-20 years in teacher leadership experiences, and then 15 people (10%) choose over 20 years in teacher leadership experiences, 13 people (9%) choose between 1-5 years in teacher leadership experiences, and 01 person (1%) chooses 0 year in teacher leadership experiences.

Upper Secondary Education

Table 17 Teacher Leadership Experiences for Entering at Each Stage of School Teacher Career Pathway in Upper Secondary Education.

Educational Level	0 Year		1-5 Years		6-10 Years		11-15 Years		16-20 Years		Over 20 Years	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	3	2%	6	4%	0	0%	0	0%	0	0%	0	0%
Primary Teacher	66	47%	65	46%	1	1%	0	0%	0	0%	0	0%
Total	69	49%	71	50%	1	1%	0	0%	0	0%	0	0%
Teacher												
School Administrator	0	0%	6	4%	2	1%	1	1%	0	0%	0	0%
Primary Teacher	8	6%	98	70%	25	18%	0	0%	0	0%	0	0%
Total	8	6%	104	74%	27	19%	1	1%	0	0%	0	0%
Senior Teacher												
School Administrator	0	0%	2	1%	4	3%	2	1%	1	1%	0	0%
Primary Teacher	6	4%	45	32%	67	48%	14	10%	0	0%	0	0%
Total	6	4%	47	33%	71	50%	16	11%	1	1%	0	0%
Distinguished Teacher												
School Administrator	0	0%	2	1%	0	0%	5	4%	1	1%	1	1%
Primary Teacher	4	3%	27	19%	54	38%	38	27%	8	6%	1	1%
Total	4	3%	29	21%	54	38%	43	30%	9	6%	2	1%
Master Teacher												
School Administrator	0	0%	2	1%	0	0%	1	1%	5	4%	1	1%
Primary Teacher	4	3%	22	16%	36	26%	31	22%	33	23%	6	4%
Total	4	3%	24	17%	36	26%	32	23%	38	27%	7	5%

Table 17 shows that the most of respondents, 71 people (50%), choose between 1-5 years in teacher leadership experiences for entering novice teacher of career pathway in upper secondary education, followed by 69 people (49%) choose 0 year in teacher leadership experiences, and then 01 person (1%) chooses between 6-10 years teacher leadership experiences, and others are not chosen. The table 17 also shows that the biggest group of respondents, 104 people (74%), choose between 1-5 years in teacher leadership experiences for entering teacher of career pathway in upper secondary education, followed by 27 people (19%), choose between 6-10 years in teacher leadership experiences, and then 08 people (6%), choose 0 year in teacher leadership experiences, 01 person (1%) chooses between 11-15 years in teacher leadership experiences, and

others are not chosen. For senior teacher, most of respondents, 71 people (50%), choose between 6-10 years in teacher leadership experiences for entering senior teacher of career pathway in upper secondary education, followed by 47 people (33%) choose between 1-5 years in teacher leadership experience, and then 16 people (11%) choose between 11-15 years in teacher leadership experiences, 06 people (4%) chooses 0 year in teacher leadership experiences, 01 person (1%) chooses between 16-20 years in teacher leadership experiences, and other is not chosen. For distinguished teacher, most of respondents, 54 people (38%), choose between 6-10 years in teacher leadership experiences for entering distinguished teacher in upper secondary education, followed by 43 people (30%) choose between 11-15 years in teacher leadership experiences, and then 29 people (21%) choose between 1-5 years in teaching experiences, 09 people (6%) choose between 16-20 years in teacher leadership experiences, 04 people (3%) choose 0 year in teacher leadership experiences, and 02 people (1%) choose over 20 years in teacher leadership experiences. For master teacher, the most of respondents, 38 people (27%), choose between 16-20 years in teacher leadership experiences for entering master teacher in upper secondary education, followed by 36 people (26%) choose between 06-10 years, and then 32 people (23%) choose between 11-15 years in teacher leadership experiences, 24 people (17%) choose between 1-5 years in teacher leadership experiences, 07 people (5%) choose over 20 years in teacher leadership experiences, and 04 people (3%) chooses 0 year in teacher leadership experiences.

3. Professional Developmental Experiences for Entering Career Pathway

Primary Education

Table 18 Professional Development for Entering at Each Stage of School Teacher Career Pathway in Primary Education.

Educational Level	0 Hour		15 Hours		30 Hours		60 Hours		90 Hours		120 Hours	
	N	%	N	%	N	%	N	%	N	%	N	%
Educational Level	0 Hour		15 Hours		30 Hours		60 Hours		90 Hours		120 Hours	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	0	0%	11	6%	2	1%	2	1%	1	1%	1	1%
Kindergarten Teacher	6	3%	26	13%	4	2%	7	4%	3	2%	3	2%
Primary Teacher	14	7%	53	27%	32	16%	17	9%	8	4%	10	5%
Total	20	10%	90	45%	38	19%	26	13%	12	6%	14	7%
Teacher												
School Administrator	0	0%	1	1%	10	5%	4	2%	0	0%	2	1%
Kindergarten Teacher	0	0%	9	5%	24	12%	9	5%	5	3%	2	1%
Primary Teacher	0	0%	20	10%	68	34%	27	14%	14	7%	5	3%
Total	0	0%	30	15%	102	51%	40	20%	19	10%	9	5%
Senior Teacher												
School Administrator	0	0%	0	0%	1	1%	8	4%	6	3%	2	1%
Kindergarten Teacher	0	0%	3	2%	11	6%	21	11%	10	5%	4	2%
Primary Teacher	0	0%	7	4%	29	15%	66	33%	23	12%	9	5%
Total	0	0%	10	5%	41	21%	95	48%	39	20%	15	8%
Distinguished Teacher												
School Administrator	0	0%	0	0%	0	0%	4	2%	9	5%	4	2%
Kindergarten Teacher	0	0%	3	2%	5	3%	18	9%	18	9%	5	3%
Primary Teacher	0	0%	8	4%	10	5%	53	27%	47	24%	16	8%
Total	0	0%	11	6%	15	8%	75	38%	74	37%	25	13%
Master Teacher												
School Administrator	0	0%	0	0%	0	0%	2	1%	5	3%	10	5%
Kindergarten Teacher	0	0%	3	2%	4	2%	10	5%	10	5%	22	11%
Primary Teacher	0	0%	5	3%	13	7%	30	15%	45	23%	41	21%
Total	0	0%	8	4%	17	9%	42	21%	60	30%	73	37%

Table 18 shows that the most of respondents, 90 people (45%), choose 15 hours for professional development to enter novice teacher of career pathway in primary education, followed by 38 people (19%) choose 30 hours for professional development, and then 26 people (13%) choose 60 hours for professional development, 20 people (10%) choose 0 hour for professional development, 14 people (7%) choose 120 hours for

professional development, and 12 people (6%) choose 90 hours for professional development. The table 18 also shows that the biggest group of respondents, 102 people (51%), choose 30 hours for professional development to enter teacher of career pathway in primary education, followed by 40 people (20%), choose 60 hours for professional development, and then 30 people (15%), choose 15 hours for professional development, 19 people (10%) chooses 90 hours for professional development, 09 people (5%) choose 120 hours for professional development, and other is not chosen. For senior teacher, most of respondents, 95 people (48%), choose 60 hours for professional development to enter senior teacher of career pathway in primary education, followed by 41 (21%) choose 39 people (20%) choose 90 hours for professional development ,15 people (8%) chooses 120 hours for professional development, 10 people (5%) choose 15 hours for professional development, and other is not chosen. For distinguished teacher, most of respondents, 75 people (38%), choose 60 hours for professional development to enter distinguished teacher in primary education, followed by 74 people (37%) choose 90 hours for professional development, and then 25 people (13%) choose 120 hours for professional development, 15 people (8%) choose 30 hours for professional development, 11 people (6%) choose 15 hours for professional development, and other is not chosen. For master teacher, the most of respondents, 73 people (37%), choose 120 hours for professional development to enter master teacher in primary education, followed by 60 people (30%) choose 90 hours for professional development, and then 42 people (21%) choose 60 hours for professional development , 17 people (9%) choose 30 hours for professional development, 08 people (4%) choose 15 hours for professional development, and other is not chosen.

Lower Secondary Education

Table 19 Professional Development for Entering at Each Stage of School Teacher Career Pathway in Lower Secondary Education.

Educational Level	0 Hour		15 Hours		30 Hours		60 Hours		90 Hours		120 Hours	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	1	1%	6	4%	2	1%	2	1%	0	0%	3	2%
Primary Teacher	7	5%	85	57%	24	16%	8	5%	5	3%	7	5%
Total	8	5%	91	61%	26	17%	10	7%	5	3%	10	7%
Teacher												
School Administrator	0	0%	1	1%	7	5%	3	2%	0	0%	3	2%
Primary Teacher	1	1%	42	28%	63	42%	21	14%	8	5%	1	1%
Total	1	1%	43	29%	70	47%	24	16%	8	5%	4	3%
Senior Teacher												
School Administrator	0	0%	0	0%	2	1%	7	5%	2	1%	3	2%
Primary Teacher	0	0%	7	5%	60	40%	51	34%	17	11%	1	1%
Total	0	0%	7	5%	62	41%	58	39%	19	13%	4	3%
Distinguished Teacher												
School Administrator	0	0%	1	1%	0	0%	5	3%	5	3%	3	2%
Primary Teacher	0	0%	6	4%	34	23%	44	30%	46	30%	6	4%
Total	0	0%	7	5%	34	23%	50	33%	50	33%	9	6%
Master Teacher												
School Administrator	1	1%	1	1%	0	0%	2	1%	5	3%	5	3%
Primary Teacher	1	1%	6	4%	23	15%	32	21%	35	23%	39	26%
Total	2	1%	7	5%	23	15%	34	23%	40	27%	44	29%

Table 19 shows that the most of respondents, 91 people (61%), choose 15 hours for professional development to enter novice teacher of career pathway in lower secondary education, followed by 26 people (17%) choose 30 hours for professional development, and then 10 people (7%) choose 60 and 120 hours for professional development, 08 people (5%) choose 0 hour for professional development, and 05 people (3%) choose 90 hours for professional development. The table 19 also shows that the biggest group of respondents, 70 people (47%), choose 30 hours for professional development to enter teacher of career pathway in lower secondary education, followed by 43 people (29%), choose 15 hours for professional development, and then 24 people (16%), choose 60 hours for professional development, 08 people (5%) chooses 90 hours for professional

development, 04 people (3%) choose 120 hours for professional development, and the least of respondents, 01 person choose 0 hour for professional development. For senior teacher, most of respondents, 62 people (41%), choose 30 hours for professional development to enter senior teacher of career pathway in lower secondary education, followed by 58 people (39%) choose 60 hours for professional development, 19 people (13%) chooses 90 hours for professional development, 07 people (5%) choose 15 hours for professional development, 04 people (3%) choose 120 hours for professional development and other is not chosen. For distinguished teacher, most of respondents, 50 people (33%), choose 60 and 90 hours for professional development to enter distinguished teacher in lower secondary education, followed by 34 people (23%) choose 30 hours for professional development, and then 09 people (6%) choose 120 hours for professional development, 07 people (5%) choose 15 hours for professional development, and other is not chosen. For master teacher, the most of respondents, 44 people (29%), choose 120 hours for professional development to enter master teacher in lower secondary education, followed by 40 people (27%) choose 90 hours for professional development, and then 34 people (23%) choose 60 hours for professional development, 23 people (15%) choose 30 hours for professional development, 07 people (5%) choose 15 hours for professional development, and other is not chosen by 02 people (1%).

Upper Secondary Education

Table 20 Professional Development for Entering at Each Stage of School Teacher Career Pathway in Upper Secondary Education.

Educational Level	0 Hour		15 Hours		30 Hours		60 Hours		90 Hours		120 Hours	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	1	1%	3	2%	2	1%	0	0%	1	1%	2	1%
Primary Teacher	19	13%	51	36%	29	21%	15	11%	15	11%	3	2%
Total	20	14%	54	38%	31	22%	15	11%	16	11%	5	4%
Teacher												
School Administrator	0	0%	3	2%	3	2%	0	0%	3	2%	0	0%
Primary Teacher	3	2%	39	26%	58	39%	23	15%	16	11%	2	1%
Total	3	2%	42	28%	61	41%	23	15%	19	13%	2	1%
Senior Teacher												
School Administrator	0	0%	0	0%	3	2%	4	3%	2	1%	0	0%
Primary Teacher	2	1%	21	15%	40	28%	41	29%	18	13%	10	7%
Total	2	1%	21	15%	43	30%	45	32%	20	14%	10	7%
Distinguished Teacher												
School Administrator	0	0%	0	0%	0	0%	3	2%	5	4%	1	1%
Primary Teacher	2	1%	16	11%	32	23%	40	28%	29	21%	13	9%
Total	2	1%	16	11%	32	23%	43	30%	34	24%	14	10%
Master Teacher												
School Administrator	0	0%	0	0%	0	0%	2	1%	3	2%	4	3%
Primary Teacher	3	2%	14	10%	20	14%	39	28%	21	15%	35	25%
Total	3	2%	14	10%	20	14%	41	29%	24	17%	39	25%
Total	3	2%	14	10%	20	14%	41	29%	24	17%	39	25%

Table 20 shows that the most of respondents, 54 people (38%), choose 15 hours for professional development to enter novice teacher of career pathway in upper secondary education, followed by 31 people (22%) choose 30 hours for professional development, and then 20 people (14%) choose 0 hour for professional development, 15 people (11%) choose 60 and 90 hours for professional development, and 05 people (4%) choose 120 hours for professional development. The table 20 also shows that the biggest group of respondents, 61 people (41%), choose 30 hours for professional development to enter teacher of career pathway in upper secondary education, followed by 42 people (28%), choose 15 hours for professional development, and then 23 people (15%), choose 60 hours for professional development, 19 people (13%) chooses 90 hours for professional

development, 04 people (3%) choose 120 hours for professional development, and the least of respondents, 03 people choose 0 hour for professional development, and 02 people. For senior teacher, most of respondents, 62 people (41%), choose 30 hours for professional development to enter senior teacher of career pathway in lower secondary education, followed by 58 people (39%) choose 60 hours for professional development, 19 people (13%) chooses 90 hours for professional development, 07 people (5%) choose 15 hours for professional development, 04 people (3%) choose 120 hours for professional development and other is not chosen. For distinguished teacher, most of respondents, 50 people (33%), choose 60 and 90 hours for professional development to enter distinguished teacher in lower secondary education, followed by 34 people (23%) choose 30 hours for professional development, and then 09 people (6%) choose 120 hours for professional development, 07 people (5%) choose 15 hours for professional development, and other is not chosen. For master teacher, the most of respondents, 44 people (29%), choose 120 hours for professional development to enter master teacher in lower secondary education, followed by 40 people (27%) choose 90 hours for professional development, and then 34 people (23%) choose 60 hours for professional development, 23 people (15%) choose 30 hours for professional development, 07 people (5%) choose 15 hours for professional development, and other is not chosen by 02 people (1%).

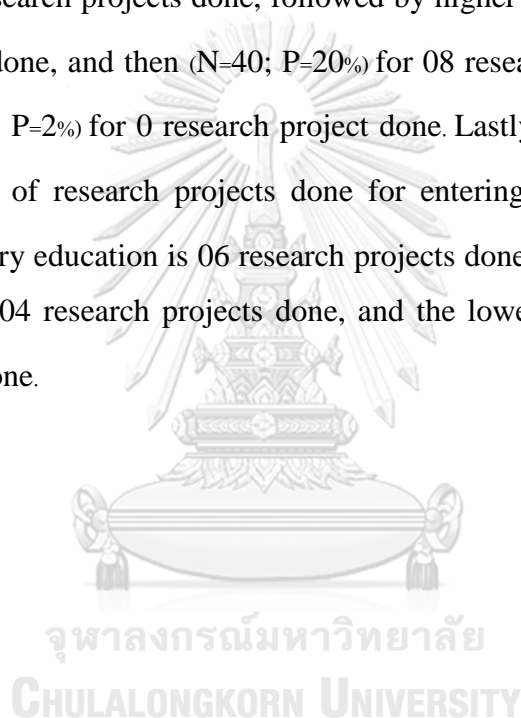
4. Research Experiences for Entering Career Pathway Primary Education

Table 21 Research Experiences for Entering at Each Stage of School Teacher Career Pathway in Primary Education.

Career Pathway Title	0 Projects		2 Projects		4 Projects		6 Projects		8 Projects		Over 8 Projects	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	8	4%	8	4%	1	1%	0	0%	0	0%	0	0%
Kindergarten Teacher	15	8%	31	16%	1	1%	1	1%	1	1%	0	0%
Primary Teacher	83	42%	40	20%	8	4%	1	1%	2	1%	0	0%
Total	106	53%	79	40%	10	5%	2	1%	3	2%	0	0%
Teacher												
School Administrator	2	1%	9	5%	6	3%	0	0%	0	0%	0	0%
Kindergarten Teacher	0	0%	21	11%	25	13%	1	1%	1	1%	1	1%
Primary Teacher	11	6%	81	41%	30	15%	10	5%	1	1%	1	1%
Total	13	7%	111	56%	61	31%	11	6%	2	1%	2	1%
Senior Teacher												
School Administrator	0	0%	2	1%	10	5%	5	3%	0	0%	0	0%
Kindergarten Teacher	0	0%	3	2%	22	11%	19	10%	2	1%	3	2%
Primary Teacher	5	3%	27	14%	63	32%	31	16%	6	3%	2	1%
Total	5	3%	32	16%	95	48%	55	28%	8	4%	5	3%
Distinguished Teacher												
School Administrator	0	0%	2	1%	1	1%	10	5%	4	2%	0	0%
Kindergarten Teacher	0	0%	0	0%	14	7%	18	9%	13	7%	4	2%
Primary Teacher	4	2%	10	5%	41	21%	51	26%	23	12%	5	3%
Total	4	2%	12	6%	56	28%	79	40%	40	20%	9	5%
Master Teacher												
School Administrator	0	0%	0	0%	2	1%	5	3%	8	4%	2	1%
Kindergarten Teacher	0	0%	0	0%	10	5%	10	5%	12	6%	17	9%
Primary Teacher	3	2%	11	6%	17	9%	49	25%	26	13%	28	14%
Total	3	2%	11	6%	29	15%	64	32%	46	23%	47	24%

Based on the findings shown in table 21 research experiences for entering career pathways in primary education, it is found that the highest value (N=106; P=53%) of number of research projects done for entering novice teacher of career pathways in primary education is not required to do any research project, followed by higher value (N=79; P=40%) for 02 research projects done, and then (N=10; P=5%) for 04 research projects done, and the lowest value (N=0; P=0%) for over 8 research projects done. It is also shown that the highest value (N=111; P=56%) of number of research projects done for entering teacher of career pathways in primary education is 2 research projects done, followed by higher value (N=61; P=31%) for 04 research projects done, and then (N=13; P=7%) for 0 research project done, and the lowest value (N=2; P=1%) for 08 research

projects and over 08 research project done. For senior teacher, the highest value (N=95; P=48%) of number of research projects done for entering senior teacher of career pathways in primary education is 4 research projects done, followed by higher value (N=55; P=28%) for 06 research projects done, and then (N=32; P=16%) for 02 research projects done, and the lowest value (N=5; P=3%) for 0 research project and over 8 research projects done. The finding of highest value (N=79; P=40%) of number of research projects done for entering distinguished teacher of career pathways in primary education is 06 research projects done, followed by higher value (N=56; P=28%) for 04 research projects done, and then (N=40; P=20%) for 08 research projects done, and the lowest value (N=4; P=2%) for 0 research project done. Lastly, the highest value (N=64; P=32%) of number of research projects done for entering master teacher of career pathways in primary education is 06 research projects done, followed by higher value (N=29; P=15%) for 04 research projects done, and the lowest value (N=4; P=2%) for 0 research project done.



Lower Secondary Education

Table 22 Research Experiences for Entering at Each Stage of School Teacher Career Pathway in Lower Secondary Education.

Career Pathway Title	0 Projects		2 Projects		4 Projects		6 Projects		8 Projects		Over 8 Projects	
	N	%	N	%	N	%	N	%	N	%	N	%
Novice Teacher												
School Administrator	5	3%	9	6%	0	0%	0	0%	0	0%	0	0%
Teacher	63	42%	72	48%	1	1%	0	0%	0	0%	0	0%
Total	68	45%	81	54%	1	1%	0	0%	0	0%	0	0%
Teacher												
School Administrator	0	0%	9	7%	5	4%	0	0%	0	0%	0	0%
Primary Teacher	4	3%	85	63%	46	34%	1	1%	0	0%	0	0%
Total	4	3%	94	69%	51	38%	1	1%	0	0%	0	0%
Senior Teacher												
School Administrator	0	0%	3	2%	8	5%	3	2%	0	0%	0	0%
Teacher	0	0%	21	14%	68	45%	44	29%	3	2%	0	0%
Total	0	0%	24	16%	76	51%	47	31%	3	2%	0	0%
Distinguished Teacher												
School Administrator	0	0%	0	0%	5	3%	6	4%	3	2%	0	0%
Teacher	0	0%	11	7%	36	24%	59	39%	30	20%	0	0%
Total	0	0%	11	7%	41	27%	65	43%	33	22%	0	0%
Master Teacher												
School Administrator	1	1%	0	0%	2	1%	4	3%	4	3%	3	2%
Teacher	0	0%	8	5%	18	12%	32	21%	43	29%	35	23%
Total	1	1%	8	5%	20	13%	36	24%	47	31%	38	25%

Based on the findings shown in table 22 research experiences for entering career pathways in lower secondary education, it is found that the highest value (N=81; P=54%) of number of research projects done for entering novice teacher of career pathways in lower secondary education is 02 research project done, followed by higher value (N=68; P=45%) for 0 research project done, and the lowest value (N=0; P=0%) for 06 research projects and over 8 research projects done. It is also shown that the highest value (N=94; P=69%) of number of research projects done for entering teacher of career pathways in lower secondary education is 02 research projects done, followed by higher value (N=51; P=38%) for 04 research projects done, and then (N=04; P=3%) for 0 research project done, and the lowest value (N=0; P=0%) for 08 research projects and over 08 research project done. For senior teacher, the highest value (N=76; P=51%) of number of research projects done for entering senior teacher of career pathways in lower secondary education is 04 research projects done, followed by higher value (N=47; P=31%) for 06

research projects done, and then (N=24; P=16%) for 02 research projects done, and the lowest value (N=0; P=0%) for 0 research project and over 8 research projects done. The finding of highest value (N=65; P=43%) of number of research projects done for entering distinguished teacher of career pathways in lower secondary education is 06 research projects done, followed by higher value (N=41; P=27%) for 04 research projects done, and then (N=33; P=22%) for 08 research projects done, and the lowest value (N=0; P=0%) for 0 research project and over 08 research projects done. Lastly, the highest value (N=47; P=31%) of number of research projects done for entering master teacher of career pathways in lower secondary education is 08 research projects done, followed by higher value (N=36; P=24%) for 06 research projects done, and the lowest value (N=01; P=1%) for 0 research project done.

4.2.3.3 Competencies of Teachers to increase authentic student achievement

Primary Education

Table 23 Authentic Student Achievement Increased by School Teacher Career Pathway at Each Stage in Primary Education.

Student Authentic Achievement		Novice Teacher			Teacher			Senior Teacher			Distinguished Teacher			Master Teacher			
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	
1. Construction of Knowledge	1.1. Organization and Analysis																
	1. Organize information		163	82%	1	153	76.5%	10	142	71%	20	144	72%	20	141	71%	20
	2. Synthesize information		124	62%	4	172	86.0%	2	149	75%	16	149	75%	18	143	72%	19
	3. Interpret information		106	53%	10	152	76.0%	13	162	81%	7	149	75%	18	153	77%	12
	4. Explain information		96	48%	14	141	70.5%	14	152	76%	13	158	79%	11	146	73%	18
	5. Evaluate information		92	46%	16	124	62.0%	19	145	73%	18	150	75%	17	155	78%	11
	1.2. Consideration of alternatives																
	1. Consider solutions		124	62%	4	158	79.0%	7	154	77%	11	159	80%	10	152	76%	14
	2. Consider strategies		94	47%	15	137	68.5%	16	149	75%	16	161	81%	9	153	77%	12
	3. Consider perspectives		87	44%	19	131	65.5%	18	144	72%	19	155	78%	15	165	83%	5
Sub Total			55%			73%			75%			77%			76%		
2. Disciplined Inquiry	2.1. Disciplinary content and concepts																
	1. Show understanding		137	69%	2	168	84.0%	3	153	77%	12	152	76%	16	149	75%	17
	2. Show ideas		102	51%	13	156	78.0%	8	162	81%	7	157	79%	14	150	75%	16
	3. Use theories		90	45%	18	137	68.5%	16	155	78%	10	158	79%	11	156	78%	10
	2.2. Disciplinary process																
1. Use methods		119	60%	7	153	76.5%	10	151	76%	14	158	79%	11	152	76%	14	

Student Authentic Achievement		Novice Teacher			Teacher			Senior Teacher			Distinguished Teacher			Master Teacher		
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank
2. Use communication		105	53%	11	155	77.5%	9	170	85%	1	166	83%	4	166	83%	4
2.3. Elaborated communication																
1. Present explanation		124	62%	4	162	81.0%	5	168	84%	2	169	85%	3	159	80%	9
2. Make conclusions		109	55%	9	153	76.5%	10	164	82%	6	176	88%	1	168	84%	3
Sub Total			56%			77%			80%			81%			79%	
3.1. Problem connected to the world																
1. Address a concept		130	65%	3	178	89.0%	1	159	80%	9	162	81%	8	162	81%	7
2. Address issue		104	52%	12	164	82.0%	4	165	83%	4	164	82%	6	165	83%	5
3.2. Audience beyond the school																
1. Communicate knowledge		110	55%	8	161	80.5%	6	166	83%	3	166	83%	4	161	81%	8
2. Present a product		92	46%	16	139	69.5%	15	165	83%	4	173	87%	2	173	87%	2
3. Take some action		83	42%	20	124	62.0%	19	151	76%	14	163	82%	7	177	89%	1
Sub Total			52%			77%			81%			83%			84%	
Grand Total			54%			76%			79%			80%			79%	

According to table 23, the findings of teacher's competencies indicate that 54% of authentic student achievement was for novice teacher in primary education, 76% of authentic student achievement was for teacher in primary education, 79% of authentic student achievement was for senior teacher in primary education, 80% of authentic student achievement was for distinguished teacher in primary education, and 79% of authentic student achievement was for master teacher in primary education.

Lower Secondary Education

Table 24 Authentic Student Achievement Increased by School Teacher Career Pathway at Each Stage in Lower Secondary Education.

Student Authentic Achievement		Novice Teacher			Teacher			Senior Teacher			Distinguished Teacher			Master Teacher		
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank
1. Construction of Knowledge																
1.1. Organization and Analysis																
1. Organize information		13	89%	1	10	68.7%	14	96	64%	20	94	63%	20	99	66%	18
2. Synthesize information		94	63%	6	11	78.0%	5	10	71%	15	98	65%	19	99	66%	18
3. Interpret information		79	53%	13	10	72.0%	10	11	75%	11	10	71%	18	97	65%	20
4. Explain information		78	52%	14	11	73.3%	9	11	77%	8	11	76%	9	10	69%	16
5. Evaluate information		70	47%	17	89	59.3%	19	10	67%	18	10	73%	15	10	71%	12
1.2. Consideration of alternatives																
1. Consider solutions		10	67%	5	11	74.0%	8	10	68%	17	11	73%	13	10	69%	16
2. Consider strategies		78	52%	14	10	66.7%	16	10	71%	16	11	75%	10	10	71%	12

Student Authentic Achievement		Novice Teacher			Teacher			Senior Teacher			Distinguished Teacher			Master Teacher			
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	
	3.Consider perspectives	67	45%	19	88	58.7%	20	100	67%	19	113	75%	10	124	83%	2	
			58%			72%			75%			76%			75%		
2. Discipline d Inquiry	2.1. Disciplinary content and concepts																
		1.Show understanding	129	86%	2	112	74.7%	7	110	73%	14	108	72%	17	106	71%	15
		2.Show ideas	84	56%	10	126	84.0%	1	118	79%	4	109	73%	15	107	71%	12
		3.Use theories	72	48%	16	101	67.3%	15	117	78%	5	118	79%	7	118	79%	7
	2.2. Disciplinary process																
		1.Use methods	108	72%	3	118	78.7%	4	114	76%	10	116	77%	8	114	76%	10
		2.Use communication	85	57%	9	113	75.3%	6	115	77%	8	119	79%	5	116	77%	8
	2.3. Elaborated communication																
		1.Present explanation	91	61%	7	106	70.7%	13	116	77%	7	112	75%	12	116	77%	8
		2.Make conclusions	82	55%	11	107	71.3%	12	117	78%	5	123	82%	1	121	81%	3
			62%			75%			77%			77%			76%		
3 Value Beyond School	3.1. Problem connected to the world																
		1.Address a concept	105	70%	4	123	82.0%	2	111	74%	13	110	73%	13	110	73%	11
		2.Address issue	81	54%	12	120	80.0%	3	124	83%	1	119	79%	5	119	79%	5
	3.2. Audience beyond the school																
		1.Communicate knowledge	86	57%	8	108	72.0%	10	123	82%	2	121	81%	3	119	79%	5
		2.Present a product	70	47%	17	99	66.0%	17	121	81%	3	122	81%	2	120	80%	4
		3.Take some action	65	43%	20	92	61.3%	18	112	75%	11	121	81%	3	127	85%	1
	Sub Total		54%			72%			79%			79%			79%		
	Grand Total		58%			72%			75%			76%			75%		

According to table 24, the findings of teacher's competencies indicate that 58% of authentic student achievement was for novice teacher in lower education, 72% of authentic student achievement was for teacher in lower education, 75% of authentic student achievement was for senior teacher in lower education, 76% of authentic student achievement was for distinguished teacher in lower education, and 75% of authentic student achievement was for master teacher in lower education.

Upper Secondary Education

Table 25 Authentic Student Achievement Increased by School Teacher Career Pathway at Each Stage in Upper Secondary Education.

Student Authentic Achievement		Novice Teacher			Teacher			Senior Teacher			Distinguished Teacher			Master Teacher				
		N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank	N	%	Rank		
1. Construction of Knowledge	1.1. Organization and Analysis																	
		1.Organize information	107	76%	1	107	75.9%	8	95	67%	17	88	62%	20	89	63%	20	
		2.Synthesize information	83	59%	8	107	75.9%	8	106	75%	5	93	66%	19	90	64%	18	
		3.Interpret information	74	52%	12	102	72.3%	11	111	79%	2	98	70%	12	94	67%	15	
		4.Explain information	68	48%	16	93	66.0%	15	106	75%	5	102	72%	5	90	64%	18	
		5.Evaluate information	58	41%	18	79	56.0%	20	89	63%	20	96	68%	16	105	74%	5	
	1.2. Consideration of alternatives																	
		1.Consider solutions	94	67%	5	107	75.9%	8	96	68%	16	94	67%	18	94	67%	15	
		2.Consider strategies	64	45%	17	101	71.6%	12	105	74%	9	101	72%	8	100	71%	8	
		3.Consider perspectives	57	41%	19	86	61.0%	17	94	67%	18	102	72%	5	111	79%	3	
		Sub Total		54%			69%			71%			69%			69%		
	2. Disciplined Inquiry	2.1. Disciplinary content and concepts																
			1.Show understanding	107	76%	1	110	78.0%	5	104	74%	11	97	69%	15	96	68%	14
			2.Show ideas	74	52%	12	111	78.7%	4	106	75%	5	102	72%	5	94	67%	15
		3.Use theories	70	50%	15	81	57.4%	18	112	79%	1	108	77%	2	106	75%	4	
2.2. Disciplinary process																		
		1.Use methods	86	61%	7	112	79.4%	3	100	71%	13	95	67%	17	98	70%	12	
		2.Use communication	81	57%	10	100	70.9%	14	102	72%	12	104	74%	4	99	70%	9	
2.3. Elaborated communication																		
		1.Present explanation	98	70%	4	108	76.6%	7	100	71%	13	100	71%	10	98	70%	12	
		2.Make conclusions	77	55%	11	101	71.6%	12	111	79%	2	110	78%	1	114	81%	1	
	Sub Total		60%			73%			74%			73%			71%			
3. Value Beyond School	3.1. Problem connected to the world																	
		1.Address a concept	103	73%	3	117	83.0%	1	100	71%	13	98	70%	12	99	70%	9	
		2.Address issue	83	59%	8	113	80.1%	2	109	77%	4	98	70%	12	101	72%	7	
	3.2. Audience beyond the school																	
		1.Communicate knowledge	87	62%	6	110	78.0%	5	105	74%	9	99	70%	11	99	70%	9	
		2.Present a product	73	52%	14	93	66.0%	15	106	75%	5	107	76%	3	105	74%	5	
		3.Take some action	61	43%	18	81	57.4%	18	92	65%	19	101	72%	8	112	79%	2	
	Sub Total		58%			73%			73%			71%			73%			
	Grand Total		57%			72%			73%			71%			71%			

According to table 25, the findings of teacher's competencies indicate that 57% of authentic student achievement was for novice teacher in upper education, 72% of

authentic student achievement was for teacher in upper education, 73% of authentic student achievement was for senior teacher in upper education, 71% of authentic student achievement was for distinguished teacher in upper education, and 71% of authentic student achievement was for master teacher in upper education.

4.3 The Development of School teacher career pathway in Cambodia based on the concept of authentic student achievement.

In this step, there were three phases to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement.

4.3.1 Designing the first draft of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

4.3.1 Primary Education

4.3.1.1 Qualification

The appropriate educational qualification degree for entering career pathway of kindergarten and primary education is in terms of a) degree of educational qualification certificate, b) teaching license, and c) credential letter.

a) Degree of educational qualification certificate

Career Pathway Titles for Pre-school and Primary Education	Associate Degree	Bachelor's degree	Master's degree	Doctoral Degree
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher		<input type="checkbox"/>		
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher			<input type="checkbox"/>	

Based on career pathway titles for kindergarten and primary education teacher regarding to educational degree qualification, novice teacher should hold associate degree certificate, teacher and senior teacher should hold bachelor's degree certificate, distinguished teacher and master should hold master's degree certificate.

b) Teaching license

The requirement of entering any career pathway title in kindergarten and primary education, teacher must have teaching license.

c) Credential letter

The requirement of entering any career pathway title in kindergarten and primary education, teacher must have credential letter.

4.3.1.2 Critical Developmental Experience

The appropriate critical developmental experiences for entering career pathway of kindergarten and primary education is in terms of a) number of years in teaching experiences, b) number of years in teacher leadership, c) number of hours for professional development, and d) number of research projects done.

a) Number of years in teaching experiences

Career Pathway Titles for Pre-school and Primary Education	0 Year	1-5 Years	6-10 Years	11-15 Years
1. Novice Teacher		<input type="checkbox"/>		
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for kindergarten and primary education teacher regarding to the number of years in teaching experiences for entering career pathway at each stage, novice teacher and teacher should have between 1-5 years in teaching experiences, senior teacher and distinguished teacher should have between 6-10 years in teaching experiences, and master teacher should have between 11-15 years in teaching experiences.

b) Number of years in teacher leadership

Career Pathway Titles for Pre-school and Primary Education	0 Year	1-5 Years	6-10 Years	11-15 Years
1. Novice Teacher		<input type="checkbox"/>		
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher			<input type="checkbox"/>	

Based on career pathway titles for kindergarten and primary education teacher regarding to the number of years in teacher leadership experiences for entering career pathway at each stage, novice teacher and teacher should have between 1-5 years in teacher leadership experiences, senior teacher, distinguished teacher, and master teacher should have between 6-10 years in teaching experiences.

c) Number of hours for professional development

Career Pathway Titles for pre-school and primary education	15 Hours	30 Hours	60 Hours	120 Hours
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for kindergarten and primary education teacher regarding to the number of hours for professional development to enter career pathway at each stage, novice teacher should get 15 hours for professional development experiences, teacher should get 30 hours for professional development experiences, senior teacher and distinguished teacher should get 60 hours for professional development experiences, and master teacher should get 120 hours for professional development experiences.

d) Number of research projects done

Career Pathway Titles for Kindergarten and Primary Education	0 Project	02 Project	04 Project	06 Project
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher				<input type="checkbox"/>
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for kindergarten and primary education teacher regarding to the number of research projects done to enter career pathway at each stage, novice teacher shouldn't have any research project done, teacher should have 02 research projects done, senior teacher should have 04 research projects done, and master teacher should have 06 research projects done.

4.4.1.3 Competencies Increasing Authentic Student Achievement

The competencies of teachers in kindergarten and primary education that enable to increase authentic student achievement were described as the follow:

Competencies of teachers that enables to increase authentic student achievement					
Authentic Student Achievement in Primary Education	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
(1) Construction of knowledge	55%	73%	75%	77%	76%
(2) Disciplined Inquiry	56%	77%	80%	81%	79%
(3) Value beyond the school	52%	76%	79%	80%	79%
Total	54%	76%	79%	80%	79%

In conclusion, career pathway for pre-school and primary school teacher was concluded in summary that describes as follows:

Summary of career pathway for pre-school and primary school teacher

Primary Education	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1) Qualification					
(1) Educational degree	Associate	Bachelor	Bachelor	Master	Master
(2) Teaching license	Yes	Yes	Yes	Yes	Yes
(3) Credential letter	Yes	Yes	Yes	Yes	Yes
2) Critical Developmental Experiences					
(1) Teaching experiences	1-5 Years	1-5 Years	6-10 Years	6-10 Years	11-15 Years
(2) Teaching leadership experiences	1-5 Years	1-5 Years	6-10 Years	6-10 Years	6-10 Years
(3) Professional development	15 Hours	30 Hours	60 Hours	60 Hours	120 Hours
(4) Research experiences	0 Project	2 Projects	4 Projects	6 Projects	6 Projects
3) Competencies					
(1) Construction of knowledge	55%	73%	75%	77%	76%
(2) Disciplined Inquiry	56%	77%	80%	81%	79%
(3) Value beyond the school	52%	76%	79%	80%	79%
Total	54%	76%	79%	80%	79%

The findings indicate that novice teacher and teacher in primary education should hold associate degree, followed by senior teacher who should hold bachelor's degree, and then, distinguished teacher and master teacher should hold master's degree. Entering teacher career pathway, teachers must have teaching license and credential letter. Teachers with a minimum of 1-5 years of work experiences in teaching and teaching leadership, 15 hours of professional development credits, and competencies increasing authentic student achievement in terms of 55% of construction of knowledge, 56 % of disciplined inquiry, and 52% of value beyond school, had become a novice teacher and then moved up the next level with required criteria.

4.4.2 Lower Secondary Education

4.4.2.1 Qualification

The appropriate educational qualification degree for entering career pathway of lower secondary education is in terms of a) degree of educational qualification certificate, b) teaching license, and c) credential letter.

a) Degree of educational qualification certificate

Career Pathway Titles for Lower Secondary Education	Associate Degree	Bachelor's degree	Master's degree	Doctoral Degree
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher		<input type="checkbox"/>		
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher			<input type="checkbox"/>	

Based on career pathway titles for lower education teacher regarding to educational degree qualification, novice teacher should hold associate degree certificate, teacher and senior teacher should hold bachelor's degree certificate, distinguished teacher and master should hold master's degree certificate.

b) Teaching license

The requirement of entering any career pathway title in kindergarten and primary education, teacher must have teaching license.

c) Credential letter

The requirement of entering any career pathway title in kindergarten and primary education, teacher must have credential letter.

4.4.2.2 Critical Developmental Experience

The appropriate critical developmental experiences for entering career pathway of lower education is in terms of a) number of years in teaching experiences, b) number of years in teacher leadership, c) number of hours for professional development, and d) number of research projects done.

a) Number of years in teaching experiences

Career Pathway Titles for Lower Secondary Education	1-5 Years	6-10 Years	11-15 Years	16-20 Years
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher	<input type="checkbox"/>			
3. Senior Teacher		<input type="checkbox"/>		
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for lower education teacher regarding to the number of years in teaching experiences for entering career pathway at each stage, novice teacher should have between 6-10 years in teaching experiences, senior teacher should have between 11-15 years in teaching experiences, and master teacher should have between 16-20 years in teaching experiences.

b) Number of years in teacher leadership

Career Pathway Titles for Lower Secondary Education	0 Year	1-5 Years	6-10 Years	11-15 Years
1. Novice Teacher		<input type="checkbox"/>		
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher				<input type="checkbox"/>
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for lower secondary education teacher regarding to the number of years in teacher leadership experiences for entering career pathway at each stage, novice teacher and teacher should have between 1-5 years in teacher leadership experiences, senior teacher should have 6-10 years in teacher leadership, distinguished teacher and master teacher should have between 11-15 years in teacher leadership experiences.

c) Number of hours for professional development

Career Pathway Titles for Lower Secondary Education	15 Hours	30 Hours	90 Hours	120 Hours
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher		<input type="checkbox"/>		
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for lower secondary education teacher regarding to the number of hours for professional development to enter career pathway at each stage, novice teacher should get 15 hours for professional development experiences, teacher and senior teacher should get 30 hours for professional development experiences, distinguished teacher should get 90 hours for professional development experiences, and master teacher should get 120 hours for professional development experiences.

d) Number of research projects done

Career Pathway Titles for Lower Secondary Education	02 Project	04 Project	06 Project	08 Project
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher	<input type="checkbox"/>			
3. Senior Teacher		<input type="checkbox"/>		
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for lower secondary education teacher regarding to the number of research projects done to enter career pathway at each stage, novice teacher and teacher should have 02 research projects done, senior teacher should have 04 research projects done, distinguished teacher should have 06 research projects done, and master teacher should have 08 research projects done.

4.4.2.3 Competencies Increasing Authentic Student Achievement

The competencies of teachers in lower secondary education that enable to increase authentic student achievement were described as the follow:

Competencies of teachers that enables to increase authentic student achievement

Authentic Student Achievement in Lower Secondary Education	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
(1) Construction of knowledge	58%	69%	70%	72%	70%
(2) Disciplined Inquiry	62%	75%	77%	77%	76%
(3) Value beyond the school	54%	72%	79%	79%	79%
Total	58%	72%	75%	76%	75%

In conclusion, career pathway for lower secondary school teacher was concluded in summary that describes as follows:

Summary of teacher career pathway for lower secondary school teacher

Lower Secondary Education	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1) Qualification					
(1) Educational degree	Associate	Bachelor	Bachelor	Master	Master
(2) Teaching license	Yes	Yes	Yes	Yes	Yes
(3) Credential letter	Yes	Yes	Yes	Yes	Yes
2) Critical Developmental Experiences					
(1) Teaching experiences	1-5 Years	1-5 Years	6-10 Years	11-15 Years	16-20 Years
(2) Teaching leadership experiences	1-5 Years	1-5 Years	6-10 Years	11-15 Years	11-15 Years
(3) Professional development	15 Hours	30 Hours	30 Hours	90 Hours	120 Hours
(4) Research experiences	2 Projects	2 Projects	4 Projects	6 Projects	8 Projects
3) Competencies					
(1) Construction of knowledge	58%	69%	70%	72%	70%
(2) Disciplined Inquiry	62%	75%	77%	77%	76%
(3) Value beyond the school	54%	72%	79%	79%	79%
Total	58%	72%	75%	76%	75%

The findings indicate that novice teacher in lower education should hold associate degree, followed by teacher and senior teacher who had with bachelor's degree, and then distinguished teacher and master teacher should hold master's degree. Entering teacher career pathway, teachers must have teaching license and credential letter. Teachers with a minimum of 1-5 years of work experiences in teaching and teaching leadership, 15 hours of professional development credits, 2 research projects done, and competencies increasing authentic student achievement in terms of 58% of construction of knowledge, 62 % of disciplined inquiry, and 54% of value beyond school, had become a novice teacher and then moved up the next level with required criteria.

4.3.3 Upper Secondary Education

4.4.3.1 Qualification

The appropriate educational qualification degree for entering career pathway of upper secondary education is in terms of a) degree of educational qualification certificate, b) teaching license, and c) credential letter.

a) Degree of educational qualification certificate

Career Pathway Titles for Upper Secondary Education	Associate Degree	Bachelor's degree	Master's degree	Doctoral Degree
1. Novice Teacher		<input type="checkbox"/>		
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher			<input type="checkbox"/>	

Based on career pathway titles for upper education teacher regarding to educational degree qualification, novice teacher and teacher should hold bachelor's degree certificate, senior teacher, distinguished teacher, and master teacher should hold master's degree certificate.

b) Teaching license

The requirement of entering any career pathway title in kindergarten and primary education, teacher must have teaching license.

c) Credential letter

The requirement of entering any career pathway title in kindergarten and primary education, teacher must have credential letter.

4.4.3.2 Critical Developmental Experience

The appropriate critical developmental experiences for entering career pathway of upper education is in terms of a) number of years in teaching experiences, b) number of years in teacher leadership, c) number of hours for professional development, and d) number of research projects done.

a) Number of years in teaching experiences

Career Pathway Titles for Upper Secondary Education	0 Year	1-5 Years	6-10 Years	11-15 Years
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher			<input type="checkbox"/>	

Based on career pathway titles for upper education teacher regarding to the number of years in teaching experiences for entering career pathway at each stage, novice teacher shouldn't have any year in teaching experiences, senior teacher should have between 1-5 years in teaching experiences, senior teacher, distinguished teacher, and master teacher should have between 6-10 years in teaching experiences.

b) Number of years in teacher leadership experiences

Career Pathway Titles for Lower Secondary Education	0 Year	1-5 Years	6-10 Years	16-20 Years
1. Novice Teacher		<input type="checkbox"/>		
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for upper secondary education teacher regarding to the number of years in teacher leadership experiences for entering career pathway at each stage, novice teacher and teacher should have between 1-5 years in teacher leadership experiences, senior teacher and distinguished teacher should have 6-10 years in teacher leadership, and master teacher should have between 16-20 years in teacher leadership experiences.

c) Number of hours for professional development

Career Pathway Titles for Lower Secondary Education	15 Hours	30 Hours	60 Hours	120 Hours
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher		<input type="checkbox"/>		
3. Senior Teacher			<input type="checkbox"/>	
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher			<input type="checkbox"/>	

Based on career pathway titles for upper secondary education teacher regarding to the number of hours for professional development to enter career pathway at each stage, novice teacher should get 15 hours for professional development experiences, teacher should get 30 hours for professional development experiences, senior teacher, distinguished teacher, and master teacher should get 60 hours for professional development experiences.

e) Number of research projects done

Career Pathway Titles for Lower Secondary Education	02 Project	04 Project	06 Project	08 Project
1. Novice Teacher	<input type="checkbox"/>			
2. Teacher	<input type="checkbox"/>			
3. Senior Teacher		<input type="checkbox"/>		
4. Distinguished Teacher			<input type="checkbox"/>	
5. Master Teacher				<input type="checkbox"/>

Based on career pathway titles for upper secondary education teacher regarding to the number of research projects done to enter career pathway at each stage, novice teacher and teacher should have 02 research projects done, senior teacher should have 04 research projects done, distinguished teacher should have 06 research projects done, and master teacher should have 08 research projects done.

4.4.3.3 Competencies Increasing Authentic Student Achievement

The competencies of teachers in upper secondary education that enable to increase authentic student achievement were described as the follow:

Competencies of teachers that enables to increase authentic student achievement

Authentic Student Achievement in Upper Secondary Education	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
(1) Construction of knowledge	54%	69%	71%	69%	69%
(2) Disciplined Inquiry	60%	73%	74%	73%	71%
(3) Value beyond the school	58%	72%	73%	71%	71%
Total	57%	72%	73%	71%	71%

In conclusion, career pathway for upper secondary school teacher was concluded in summary that describes as follows:

Summary of career pathway for upper secondary school teacher

Upper Secondary Education	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1) Qualification					
(1) Educational degree	Bachelor	Bachelor	Master	Master	Master
(2) Teaching license	Yes	Yes	Yes	Yes	Yes
(3) Credential letter	Yes	Yes	Yes	Yes	Yes
2) Critical Developmental Experiences					
(1) Teaching experiences	0 Year	1-5 Years	6-10 Years	6-10 Years	6-10 Years
(2) Teaching leadership experiences	1-5 Years	1-5 Years	6-10 Years	6-10 Years	16-20 Years
(3) Professional development	15 Hours	30 Hours	60 Hours	60 Hours	60 Hours
(4) Research experiences	2 Projects	2 Projects	4 Projects	6 Projects	8 Projects
3) Competencies					
(1) Construction of knowledge	54%	69%	71%	69%	69%
(2) Disciplined Inquiry	60%	73%	74%	73%	71%
(3) Value beyond the school	58%	72%	73%	71%	71%
Total	57%	72%	73%	71%	71%

The findings indicate that novice teacher and teacher in upper secondary education should hold bachelor's degree, followed by senior teacher, distinguished teacher, and master who should hold master's degree. Entering teacher career pathway, teachers must have teaching license and credential letter. Teachers with a minimum of 1-5 years of work experiences in teaching and teaching leadership, 15 hours of

professional development credits, 2 research projects done, and competencies increasing authentic student achievement in terms of 54% of construction of knowledge, 60 % of disciplined inquiry, and 58% of value beyond school, had become a novice teacher and then moved up the next level with required criteria as showed in table.

4.3.2 Validating the school teacher career pathway in Cambodia based on the concept of authentic student achievement.

The draft of school teacher career pathway in Cambodia based on the concept of authentic student achievement was validated by focus group with 11 experts of educational policy makers, teacher professional development, human resource management in education, and school administrator in Cambodia.

The results of focus group were found that the conceptual framework may be revised to add more sub components such as professional knowledge, professional practice, and professional study to responsive to teacher professional standards in 2016, Teaching license and credential letter would be replaced by professional ethics. Research experiences should be revised as research and sharing experiences including professional learning community. The incremental criteria for career pathway from entry level to advanced level should be identified by induction program in which provides novice teacher with assistance, and then becoming the next stage of independent school room teacher, effective school teacher, collaborative school teacher, and leader teacher in and outside of the school.

4.3.3 Developing the school teacher career pathway in Cambodia based on the concept of authentic student achievement.

In this study, the school teacher career pathway in Cambodia based on the concept of authentic student achievement consists of 6 key components, namely 1) teacher position consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers, 2) career pathway consisting of novice teacher, teacher, senior teacher, distinguished teacher, and master teacher, 3) qualification consisting of educational degree, and teaching license, 4) critical

developmental experiences consisting of teaching experiences, teacher leadership experiences, research and sharing experiences, and teacher achievement, and 5) competencies consisting of professional knowledge, professional practice, professional development, and professional ethics, and 6) authentic student achievement consisting construction of knowledge, disciplined inquiry, and valued beyond the school.that describes in detail as follow:



4.3.3.1 Teacher Career Pathway for Pre-School and Primary School Teacher

The detail description of teacher career pathway for pre-school and primary school teacher is shown in table 27 below.

Table 26 Development of teacher career pathway for pre-school and primary school teacher

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1. Qualification					
1.1 Educational degree	Novice teacher holds at least associate degree in the field of subject matter teaching.	Teacher holds at least bachelor's degree in the field of subject matter teaching.	Senior teacher holds at least bachelor's degree in the field of subject matter teaching.	Distinguished teacher holds at least bachelor's degree in the field of subject matter teaching.	Master teacher holds at least Master's degree in the field of subject matter teaching.
1.2 Teaching license	Novice teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Senior teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Distinguished teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Master teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.
2. Critical Developmental Experience					

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
2.1 Teaching experiences	Novice teacher has at least 1 year of teaching experiences.	Teacher has at least 2 to 4 years of teaching experiences.	Senior teacher has at least 5 to 9 years of teaching experiences.	Senior teacher has at least 10 to 14 years of teaching experiences.	Master teacher has at least 15 to 20 years of teaching experiences.
2.2 Teacher leadership experiences	Novice teacher does not have teacher leadership experiences.	Teacher has at least 1 to 2 years of teacher leadership experiences.	Senior teacher has at least 3 to 5 years of teacher leadership experiences.	Distinguished teacher has at least 6 to 10 years of teacher leadership experiences.	Master teacher has at least 11 to 15 years of teacher leadership experiences.
	Become home teacher and a member of subject matter area.	Become home teacher and a member of subject matter area.	Head of subject matter area for 3 years	Head of subject matter area for 5 years	Head of subject matter area for 7 years
	Novice teacher demonstrates his/her knowledge of classroom inspection	Teacher has experience of classroom inspection at least 2 times	Senior teacher has experience of classroom inspection at least 5 times	Distinguished teacher has experience of classroom inspection at least 10 times	Master teacher has experience of classroom inspection at least 15 times
	Member of professional learning community	Member of professional learning community	Facilitator of professional learning community	Mentor of professional learning community	Leader of professional learning community
2.3 Research and sharing experiences	Demonstrate knowledge and understanding of principles and scientific methods of research.	Conduct the classroom research with experienced teachers at least 2 projects	Conduct the classroom research with colleagues at least 4 projects	Influence other with less experienced teachers to conduct research at least 6 projects	Lead to conduct the educational research and development with teacher team at least 8 projects

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
	Participate in academic research forum or symposium within own school or national level at least 2 times	Participate in academic research forum or symposium within own school or national level at least 5 times	Collaborate with colleagues to organize academic research forum or symposium within own school	Organize academic research forum or symposium at school or local levels.	Lead to design the academic research forum or symposium at national level
2.4 Teacher achievement	Need assistance from experienced teachers to produce teaching lesson guideline books for instruction; lessons online and instructional materials.	Produce 1 teaching lesson guideline books for instruction; 4 online lessons, and produce instructional materials at least 65% of the lessons they are responsible.	Assist less experienced teachers and produce 2 teaching lesson guidelines books for instruction; 6 online lessons, and produce instructional materials at least 75% of the lessons they are responsible.	Faciliate and produce 4 teaching lesson guidelines books for instruction; 8 online lesson, and produce instructional materials for at least 85% of the lessons they are responsible.	Initiate and produce 6 teaching lesson guidelines books for instruction; 10 online lessons, and produce instructional materials for 100% of the lessons they are responsible.
3.Competencies					
3.1 Professional knowledge					
1.2.1 Know student and how they learn	Demonstrate knowledge and understanding of physical, social, and intellectual development and characteristics of students (students' learning needs, learning capacity, attitude,	Apply knowledge and understanding of physical, social, and intellectual development and characteristics of students (students' learning needs, learning capacity, attitude, learning style,	Assist less experienced teachers to identify physical, social, and intellectual development and characteristics of students and how these may affect student learning, consider diversity of	Influence colleagues to develop and design models to identify physical, social, and intellectual development and characteristics of students and how these may affect	Lead colleagues to develop and design models for assessing and identifying physical, social, and intellectual development and characteristics of students on the 4

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.2.1 Know student and how they learn	<p>learning style, and their family's background) and how these may affect student learning.</p> <p>Demonstrate knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students</p>	<p>and their family's background) and how these may affect student learning.</p> <p>Apply knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students</p>	<p>learners, and motivate active learning.</p> <p>Assist less experienced teachers to identify the impact of culture, cultural identity and linguistic background on the education of students.</p>	<p>student learning, consider diversity of learners, and motivate active learning.</p> <p>Influence other colleagues to develop and design models in implementing knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students.</p>	<p>pillars of education.</p> <p>Design the implementation of knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students.</p>
3.2 Professional practice	<p>Demonstrate knowledge and understanding of the effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.</p>	<p>Apply the effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.</p>	<p>Assist less experienced teachers to implement the effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.</p>	<p>Influence other colleagues to design and implement effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.</p>	<p>Lead colleagues to design and develop more effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.</p>

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.1 Planning and monitoring academic outcome	Demonstrate knowledge and understanding of making lesson plans, curriculum and assessment of student learning outcomes.	Apply knowledge and understanding of making lesson plans, curriculum and assessment of student learning outcomes.	Coach other colleagues to make the effective lesson plans, curriculum and assessment of learning outcomes to create productive learning environments that engage all students.	Work with colleagues to plan, evaluate and modify the effective lesson plans, curriculum development and assessment of learning outcomes to create productive learning environments that engage all students.	Lead initiative within the school to design and assess more effective lesson plans, curriculum and assessment of learning outcomes to create productive learning environments that engage all students.
3.2.1 Planning and monitoring academic outcome	Demonstrate knowledge and understanding of producing teaching and learning materials to achieve student learning outcomes.	Implement appropriate teaching and learning materials to achieve student learning outcomes.	Coach other colleagues to produce effective teaching and learning materials and use teaching and learning resources to achieve student learning outcomes.	Influence other colleagues to design and develop effective teaching and learning materials and learning resources to achieve student learning outcomes.	Develop and design modern teaching and learning materials using ICT to achieve student learning outcomes. Lead colleagues in selecting, creating, and evaluating resources for teaching materials.
	Understand a variety of appropriate teaching methods and student learning assessment.	Apply a variety of appropriate teaching methods and student learning assessment.	Coach other colleagues to improve a variety of effective teaching methods, strategies and student learning assessment.	Influence other colleagues to design and develop a variety of effective teaching methods, strategies and	Lead colleagues to research and develop a variety of effective teaching methods, strategies and

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.1 Planning and monitoring academic outcome	<p>Demonstrate knowledge and understanding of following up student participation and maintaining records of student progress.</p> <p>Demonstrate knowledge and understanding of feedback to students, parents or guardians.</p> <p>Serve as a classroom teacher practicing in instructional tasks that improves student achievement for their own classes.</p>	<p>Apply knowledge and understanding of following up student participation and maintaining records of student progress.</p> <p>Apply knowledge and understanding of feedback to students, parents or guardians.</p> <p>Serve as an effective classroom teacher practicing in instructional tasks that have the impact on student learning outcomes for their own classes.</p>	<p>Coach other colleagues to provide knowledge and understanding of following up student participation and maintaining records of student progress.</p> <p>Support colleagues with providing holistic feedback to students, parents or guardians.</p> <p>Serve as a good model classroom teacher practicing in teaching, coaching and mentoring less experienced teachers on instructional tasks that have good impact on student learning outcomes for their own classes and may</p>	<p>Influence other colleagues and stakeholders to keep in touch and follow up student participation and maintaining records of student progress.</p> <p>Influence other colleagues to develop a variety of platforms to give holistic feedback to students, parents or guardians.</p> <p>Serve as a good teacher leader in subject matter area, coaching and mentoring less experienced teachers, collect and review data to improve effective lesson plans and teaching methods,</p>	<p>student learning assessment.</p> <p>Lead colleagues to keep in touch and follow up student participation and maintaining records of student progress.</p> <p>Lead colleagues to design and develop a variety of platforms and strategies to give holistic feedback to students, parents or guardians.</p> <p>Serve as a team teacher leader for coaching and mentoring the instructional planning, professional development, and research and development on instructional issues,</p>

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.2 Management of learning environment	Demonstrate knowledge and understanding of safe learning environment and encouragement of all students to learn with their fullest potential.	Apply knowledge and understanding of safe learning environment and encouragement of all students to learn with their fullest potential.	Coach other colleagues to implement knowledge of safe learning environment and encouragement of all students to learn with their fullest potential.	Influence other colleagues to develop safe learning environment and encouragement of all students to learn with their fullest potential.	Lead colleagues to formulate strategies and mechanism for safe learning environment and encourage all students to learn with their fullest potential.
	Demonstrate knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.	Apply knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.	Coach other colleagues to implement knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.	Influence other colleagues to develop and design the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.	Lead colleagues to develop and design the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.
	Demonstrate knowledge and understanding of using information and	Apply knowledge and understanding of using information and communication	Coach other colleagues to implement knowledge and understanding of	Influence other colleagues to develop and design the effective ways	Lead colleagues to develop and design the effective ways how to use

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.2 Management of learning environment	<p>communication technology for effective teaching and learning.</p> <p>Demonstrate knowledge and understanding of improving effective relationship with students, parents, colleagues and community.</p>	<p>technology for effective teaching and learning.</p> <p>Apply knowledge and understanding of improving effective relationship with students, parents, colleagues and community.</p>	<p>using information and communication technology for effective teaching and learning.</p> <p>Coach other colleagues to implement knowledge and understanding of improving effective relationship with students, parents, colleagues and community.</p>	<p>how to use information and communication technology for effective teaching and learning.</p> <p>Influence other colleagues to develop and design the improving effective relationship with students, parents, colleagues and community.</p>	<p>information and communication technology for effective teaching and learning.</p> <p>Lead colleagues to develop and design the improving effective relationship with students, parents, colleagues and community.</p>
3.3 Professional development					
1.3.1 Self-Learning	Demonstrate knowledge and understanding of self-evaluate their teaching and personal professional development plan.	Apply knowledge and understand their teaching and personal professional development plan.	Provide peer evaluation assistance, evaluate teacher practice, and make a personal devevelopment plan.	Influence other colleagues to design self-evaluation in teaching and learning and make a personal devevelopment plan.	Lead colleagues to design how to self-evaluate the effectiveness of teaching and learning and make a personal professional development plan.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.3.1 Self-Learning	Demonstrate knowledge and understanding of development of IT skills and foreign languages to apply for instruction improvement.	Apply knowledge and understanding of the development of IT skills and foreign languages to apply for instruction improvement.	Coach other colleagues to develop knowledge of IT skills and foreign languages to apply for instruction improvement.	Influence other colleagues to design how to develop knowledge of IT skills and foreign languages to apply for instruction improvement.	Lead colleagues to design how to develop knowledge of IT skills and foreign languages to apply for instruction improvement.
1.3.2 Participation in teaching and learning improvement	Demonstrate knowledge and understanding of reading academic and research articles to broaden knowledge to improve their instruction. Participate in professional development trainings and workshops at least 30 hours per year.	Apply knowledge and understanding of reading academic and research articles to broaden knowledge to improve their instruction. Participate in professional development trainings and workshops at least 60 hours per year.	Coach other colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction. Participate in professional development trainings and workshops at least 90 hours per year.	Influence other colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction. Participate in professional development trainings and workshops at least 60 hours per year.	Lead colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction. Participate in professional development trainings and workshops at least 30 hours per year.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.3.2 Participation in teaching and learning improvement	Demonstrate knowledge and understanding of organizing teacher professional development training and workshops	Assistance to experienced teachers to organize teacher professional development training and workshops	Participate as a member of organizers to conduct the professional development for colleagues at least once a year	Organize the professional development for colleagues at least one a year	Lead to organize the professional development for colleagues at least twice a year
	Demonstrate knowledge and understanding of interaction with colleagues for professional learning community(PLC)	Apply knowledge and understanding of interaction with colleagues for professional learning community(PLC)	Participate as a member of professional learning community (PLC)	Establish a team of professional learning community (PLC) in school.	Lead the professional learning community (PLC) teams in school and outside.
3.4 Professional ethics					
3.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of attention and caring for students.	Apply knowledge and understanding of attention and caring for students.	Coach other colleagues to implement knowledge and understanding of caring for students.	Influence other colleagues to develop and design the effective caring for students.	Lead colleagues to develop and design the improving caring for students.
	Demonstrate knowledge and understanding of communication with students, colleagues, and takeholders	Apply knowledge and understanding of communication with students, colleagues, and takeholders	Coach other colleagues to implement the effective communication with students, colleagues, and community.	Influence other colleagues to develop and design the effective communication with students, colleagues, and community.	Lead colleagues to develop and design the effective communication with students, colleagues, administrators.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of showing respect for students' rights without any abuse and punishment.	Apply knowledge and understanding of showing respect for students' rights without any abuse and punishment.	Coach other colleagues to implement knowledge and understanding of showing respect for students' rights without any abuse.	Influence other colleagues to develop and design the ways how to show respect for students' rights without any abuse.	Lead colleagues to develop and design the ways how to show respect for students' rights without any abuse.
	Demonstrate knowledge and understanding of working with colleagues and takeholders in the interests of student learning.	Apply knowledge and understanding of working with colleagues and takeholders in the interests of student learning.	Coach other colleagues to implement knowledge and understanding of working with colleagues and takeholders in the interests of learning.	Influence other colleagues to develop and design the ways how to work with colleagues and takeholders in the interests of student learning.	Lead colleagues to develop and design the ways how to work with colleagues and takeholders in the interests of student learning.
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of punctuality for duties and consistency of kind behavior.	Apply knowledge and understanding of punctuality for duties and consistency of friendly and kind behavior.	Coach other colleagues to implement knowledge and understanding of punctuality for duties and good behavior.	Influence other colleagues to develop and design the ways of punctuality for duties and behavior.	Lead colleagues to develop and design the ways of punctuality for duties and consistency of friendly and kind behavior.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Apply knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Coach other colleagues to implement knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Influence other colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.	Lead colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.
	Demonstrate knowledge and understanding of code of ethics and law on education	Apply knowledge and understanding of code of ethics and law on education	Coach other colleagues to implement knowledge and understanding of code of ethics and law on education	Influence other colleagues to develop and design the effective implementation of code of ethics and law on education	Lead colleagues to develop and design the effective implementation of code of ethics and law on education
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Apply knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Coach other colleagues to implement knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Influence other colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.	Lead team leaders to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of code of ethics and law on education	Apply knowledge and understanding of code of ethics and law on education	Coach other colleagues to implement knowledge and understanding of code of ethics and law on education	Influence other colleagues to develop and design the effective implementation of code of ethics and law on education	Lead colleagues to develop and design the effective implementation of code of ethics and law on education
1.4.3 Fairness and transparency	Demonstrate knowledge and understanding of professional integrity through treating others equally.	Apply knowledge and understanding of professional integrity through treating others equally and without bias.	Coach other colleagues to implement knowledge and understanding of professional integrity.	Influence other colleagues to develop and design the effective implementation of professional integrity.	Lead colleagues to develop and design the effective implementation of professional integrity.
1.4.4 Positive model of ethical behavior	Demonstrate knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Apply knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Coach other colleagues to implement knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Influence other colleagues to develop and design the effective positive attitude to students and others and engage students in their learning.	Create supportive projects for engaging students in their learning.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.4 Positive model of ethical behavior	Demonstrate knowledge and understanding of cultivating the values of ethical behavior in students and others.	Apply knowledge and understanding of the values of ethical behavior in students and others.	Coach other colleagues to implement knowledge and understanding of the values of ethical behavior in students and others.	Influence other colleagues to develop and design the effective ways how to cultivate the values of ethical behavior in students and others.	Lead colleagues to develop and design the effective ways how to cultivate the values of ethical behavior in students and others.
	Demonstrate knowledge and understanding of paying all students equal attention and access to resources irrespective of gender, disability, ethnicity or property.	Solve the issues related to student learning and provide with special need for disability, ethnicity or property.	Mentor colleagues to solve the complex issues related to student learning and provide with special need for disability, ethnicity or property.	Influence other colleagues to develop and design the effective ways how to pay all students equal attention and access to resources irrespective of gender, disability, ethnicity or property.	Build innovative team to solve the complex issues related to student learning and provide with special need for disability, ethnicity or property.
	Demonstrate knowledge and understanding of assessing learning outcomes fairly.	Apply knowledge and understanding of assessing learning outcomes fairly.	Coach other colleagues to implement knowledge and understanding of assessing learning outcomes fairly.	Influence other colleagues to develop and design the effective ways how to assess learning outcomes fairly.	Lead colleagues to develop and design the effective ways how to assess learning outcomes fairly.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
4. Authentic Student Achievement					
1. Construction of knowledge	Novice teacher has to teach their students to increase the construction of knowledge at least 60%	Teacher has to teach their students to increase the construction of knowledge at least 70%	Senior teacher has to teach their students to increase the construction of knowledge at least 80%	Distinguished teacher has to teach their students to increase the construction of knowledge at least 90%	Master teacher has to teach their students to increase the construction of knowledge at least 100%
2. Disciplined inquiry	Novice teacher has to teach their students to increase disciplined inquiry at least 55%	Teacher has to teach their students to increase disciplined inquiry at least 65%	Senior teacher has to teach their students to increase disciplined inquiry at least 75%	Distinguished teacher has to teach their students to increase disciplined inquiry at least 85%	Master teacher has to teach their students to increase disciplined inquiry at least 95%
3. Value beyond the school	Novice teacher has to teach their students to increase value beyond the school at least 50%	Teacher has to teach their students to increase value beyond the school at least 60%	Senior teacher has to teach their students to increase value beyond the school at least 70%	Distinguished teacher has to teach their students to increase value beyond the school at least 80%	Master teacher has to teach their students to increase value beyond the school at least 90%
Total	Novice teacher has to teach their students to increase authentic student achievement the school at least 55%	Teacher has to teach their students to increase authentic student achievement the school at least 65%	Senior teacher has to teach their students to increase authentic student achievement the school at least 75%	Distinguished teacher has to teach their students to increase authentic student achievement the school at least 85%	Master teacher has to teach their students to increase authentic student achievement the school at least 95%

4.3.3.2 Teacher Career Pathway for Lower School Teacher

The detail description of teacher career pathway for lower secondary school teacher is shown in table 28 below.

Table 27 Development Of teacher career pathway for lower secondary school teacher

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1. Qualification					
1.1 Educational degree	Novice teacher holds at least associate degree in the field of subject matter teaching.	Teacher holds at least bachelor's degree in the field of subject matter teaching.	Senior teacher holds at least bachelor's degree in the field of subject matter teaching.	Distinguished teacher holds at least bachelor's degree in the field of subject matter teaching.	Master teacher holds at least Master's degree in the field of subject matter teaching.
1.2 Teaching license	Novice teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Senior teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Distinguished teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Master teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.
2. Critical Developmental Experience					
2.1 Teaching experiences	Novice teacher has at least 1 year of teaching experiences.	Teacher has at least 2 to 4 years of teaching experiences.	Senior teacher has at least 5 to 9 years of teaching experiences.	Senior teacher has at least 10 to 14 years of teaching experiences.	Master teacher has at least 15 to 20 years of teaching experiences.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
2.2 Teacher leadership experiences	Novice teacher does not have teacher leadership experiences.	Teacher has at least 1 to 2 years of teacher leadership experiences.	Senior teacher has at least 3 to 5 years of teacher leadership experiences.	Distinguished teacher has at least 6 to 10 years of teacher leadership experiences.	Master teacher has at least 11 to 15 years of teacher leadership experiences.
	Become home teacher and a member of subject matter area.	Become home teacher and a member of subject matter area.	Head of subject matter area for 3 years	Head of subject matter area for 5 years	Head of subject matter area for 7 years
2.3 Research and sharing experiences	Novice teacher demonstrates his/her knowledge of classroom inspection	Teacher has experience of classroom inspection at least 2 times	Senior teacher has experience of classroom inspection at least 5 times	Distinguished teacher has experience of classroom inspection at least 10 times	Master teacher has experience of classroom inspection at least 15 times
	Member of professional learning community	Member of professional learning community	Facilitator of professional learning community	Mentor of professional learning community	Leader of professional learning community
2.3 Research and sharing experiences	Conduct the classroom research with experienced teachers at least 1 project.	Conduct the classroom research with experienced teachers at least 2 projects	Conduct the classroom research with colleagues at least 4 projects	Influence other with less experienced teachers to conduct research at least 6 projects	Lead to conduct the educational research and development with teacher team at least 8 projects
	Participate in academic research forum or symposium within own school or national level at least 2 times	Participate in academic research forum or symposium within own school or national level at least 5 times	Collaborate with colleagues to organize academic research forum or symposium within own school	Organize academic research forum or symposium at school or local levels.	Lead to design the academic research forum or symposium at national level

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
2.4 Teacher achievement	Assistant to experienced teachers to produce teaching lesson guideline books for instruction; lessons online and instructional materials.	Produce 1 teaching lesson guideline books for instruction; 4 online lessons, and produce instructional materials 65% of the lessons they are responsible.	Produce 2 teaching lesson guidelines books for instruction; 6 online lessons, and produce instructional materials 75% of the lessons they are responsible	Produce 4 teaching lesson guidelines books for instruction; 8 online lesson, and produce instructional materials for 85% of the lessons they are responsible.	Produce 6 teaching lesson guidelines books for instruction; 10 online lessons, and produce instructional materials for 100% of the lessons they are responsible.
3.Competencies					
3.1 Professional knowledge					
1.2.1 Know student and how they learn	Demonstrate knowledge and understanding of physical, social, and intellectual development and characteristics of students' learning needs, capacity, attitude, and their family's background) and how these may affect student learning.	Apply knowledge and understanding of physical, social, and intellectual development and characteristics of students' learning needs, learning capacity, attitude, learning style, and their family's background) and how these may affect student learning.	Assist less experienced teachers to identify physical, social, and intellectual development and characteristics of students and how these may affect student learning, consider diversity of learners, and motivate active learning.	Influence colleagues to develop and design models to identify physical, social, and intellectual development and characteristics of students and how these may affect student learning, consider diversity of learners, and motivate active learning.	Lead colleagues to develop and design models for assessing and identifying physical, social, and intellectual development and characteristics of students on the 4 pillars of education.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.2.1 Know student and how they learn	Demonstrate knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students	Apply knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students	Assist less experienced teachers to identify the impact of culture, cultural identity and linguistic background on the education of students.	Influence other colleagues to develop and design models in implementing knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students.	Design the implementation of knowledge and understanding of the impact of culture, cultural identity and linguistic background on the education of students.
	Demonstrate knowledge and understanding of the effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.	Apply the effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.	Assist less experienced teachers to implement the effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.	Influence other colleagues to design and implement effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.	Lead colleagues to design and develop more effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.
3.2 Professional practice					
3.2.1 Planning and monitoring academic outcome	Demonstrate knowledge and understanding of making lesson plans, curriculum and assessment of student	Apply knowledge and understanding of making lesson plans, curriculum and assessment of student learning outcomes.	Coach other colleagues to make the effective lesson plans, curriculum and assessment of learning outcomes to	Work with colleagues to plan, evaluate and modify the effective lesson plans, curriculum development and	Lead initiative within the school to design and assess more effective lesson plans, curriculum and

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.1 Planning and monitoring academic outcome	learning outcomes.		create productive learning environments that engage all students.	assessment of learning outcomes to create productive learning environments that engage all students.	assessment of learning outcomes to create productive learning environments that engage all students.
	Demonstrate knowledge and understanding of producing teaching and learning materials to achieve student learning outcomes.	Implement appropriate teaching and learning materials to achieve student learning outcomes.	Coach other colleagues to produce effective teaching and learning materials and use teaching and learning resources to achieve student learning outcomes.	Influence other colleagues to design and develop effective teaching and learning materials and learning resources to achieve student learning outcomes.	Develop and design modern teaching and learning materials using ICT to achieve student learning outcomes. Lead colleagues in selecting, creating, and evaluating resources for teaching materials.
	Understand a variety of appropriate teaching methods and student learning assessment.	Apply a variety of appropriate teaching methods and student learning assessment.	Coach other colleagues to improve a variety of effective teaching methods, strategies and student learning assessment.	Influence other colleagues to design and develop a variety of effective teaching methods, strategies and student learning assessment.	Lead colleagues to research and develop a variety of effective teaching methods, strategies and student learning assessment.
	Demonstrate knowledge and understanding of following up student	Apply knowledge and understanding of following up student participation and	Coach other colleagues to provide knowledge and understanding of	Influence other colleagues and stakeholders to keep in touch and follow up	Lead colleagues to keep in touch and follow up student participation and

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.1 Planning and monitoring academic outcome	participation and maintaining records of student progress.	maintaining records of student progress.	following up student participation and maintaining records of student progress.	student participation and maintaining records of student progress.	maintaining records of student progress.
	Demonstrate knowledge and understanding of feedback to students, parents or guardians.	Apply knowledge and understanding of feedback to students, parents or guardians.	Support colleagues with providing holistic feedback to students, parents or guardians.	Influence other colleagues to develop a variety of platforms to give holistic feedback to students, parents or guardians.	Lead colleagues to design and develop a variety of platforms and strategies to give holistic feedback to students, parents or guardians.
	Serve as a classroom teacher practicing in instructional tasks that improves student achievement for their own classes.	Serve as an effective classroom teacher practicing in instructional tasks that have the impact on student learning outcomes for their own classes.	Serve as a good model classroom teacher practicing in teaching, coaching and mentoring less experienced teachers on instructional tasks that have good impact on student learning outcomes for their own classes and may have an effect beyond their own classes.	Serve as a good teacher leader in subject matter area, coaching and mentoring less experienced teachers, collect and review data to improve effective lesson plans and teaching methods, and instructional tasks, and advocate for change.	Serve as a team teacher leader for coaching and mentoring the instructional planning, professional development, and research and development on instructional issues, curriculum development, and policies on education

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.2 Management of learning environment	<p>Demonstrate knowledge and understanding of safe learning environment and encouragement of all students to learn with their fullest potential.</p> <p>Demonstrate knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Apply knowledge and understanding of safe learning environment and encouragement of all students to learn with their fullest potential.</p> <p>Apply knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Coach other colleagues to implement knowledge of safe learning environment and encouragement of all students to learn with their fullest potential.</p> <p>Coach other colleagues to implement knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Influence other colleagues to develop safe learning environment and encouragement of all students to learn with their fullest potential.</p> <p>Influence other colleagues to develop and design the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Lead colleagues to formulate strategies and mechanism for safe learning environment and encourage all students to learn with their fullest potential.</p> <p>Lead colleagues to develop and design the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.2 Management of learning environment	Demonstrate knowledge and understanding of improving effective relationship with students, parents, colleagues and community.	Apply knowledge and understanding of improving effective relationship with students, parents, colleagues and community.	Coach other colleagues to implement knowledge and understanding of improving effective relationship with students, parents, colleagues and community.	Influence other colleagues to develop and design the improving effective relationship with students, parents, colleagues and community.	Lead colleagues to develop and design the improving effective relationship with students, parents, colleagues and community.
3.3 Professional development					
1.3.1 Self-Learning	Demonstrate knowledge and understanding of self-evaluate their teaching and personal professional development plan.	Apply knowledge and understanding of self-evaluate their teaching and personal professional development plan.	Provide peer evaluation assistance, evaluate teacher practice, and make a personal development plan.	Influence other colleagues to design self-evaluation in teaching and learning and make a personal development plan.	Lead colleagues to design how to self-evaluate the effectiveness of teaching and learning and make a personal professional development plan.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.3.1 Self-Learning	Demonstrate knowledge and understanding of development of knowledge of IT skills and foreign languages to apply for instruction improvement.	Apply knowledge and understanding of the development of knowledge of IT skills and foreign languages to apply for instruction improvement.	Coach other colleagues to develop knowledge of IT skills and foreign languages to apply for instruction improvement.	Influence other colleagues to design how to develop knowledge of IT skills and foreign languages to apply for instruction improvement.	Lead colleagues to design how to develop knowledge of IT skills and foreign languages to apply for instruction improvement.
1.3.2 Participation in teaching and learning improvement	Demonstrate knowledge and understanding of reading academic and research articles to broaden knowledge to improve their instruction.	Apply knowledge and understanding of reading academic and research articles to broaden knowledge to improve their instruction.	Coach other colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction.	Influence other colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction.	Lead colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction.
	Participate in professional development trainings and workshops at least 30 hours per year.	Participate in professional development trainings and workshops at least 60 hours per year.	Participate in professional development trainings and workshops at least 90 hours per year.	Participate in professional development trainings and workshops at least 60 hours per year.	Participate in professional development trainings and workshops at least 30 hours per year.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.3.2 Participation in teaching and learning improvement	Demonstrate knowledge and understanding of organizing teacher professional development training and workshops	Assistance to experienced teachers to organize teacher professional development training and workshops	Participate as a member of organizers to conduct the professional development for colleagues at least once a year	Organize the professional development for colleagues at least one a year	Lead to organize the professional development for colleagues at least twice a year
	Demonstrate knowledge and understanding of interaction with colleagues for professional learning community(PLC)	Apply knowledge and understanding of interaction with colleagues for professional learning community(PLC)	Participate as a member of professional learning community (PLC)	Establish a team of professional learning community (PLC) in school.	Lead the professional learning community (PLC) teams in school and outside.
3.4 Professional ethics					
3.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of attention and caring for students.	Apply knowledge and understanding of attention and caring for students.	Coach other colleagues to implement knowledge and understanding of caring for students.	Influence other colleagues to develop and design the effective caring for students.	Lead colleagues to develop and design the improving the effective caring for students.
	Demonstrate knowledge and understanding of communication with students, colleagues, and takeholders	Apply knowledge and understanding of communication with students, colleagues, and takeholders	Coach other colleagues to implement the effective communication with students, colleagues, and community.	Influence other colleagues to develop and design the effective communication with students, colleagues, and community.	Lead colleagues to develop and design the effective communication with students, colleagues, and administrators.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of showing respect for students' rights without any abuse and punishment.	Apply knowledge and understanding of showing respect for students' rights without any abuse and punishment.	Coach other colleagues to implement knowledge and understanding of showing respect for students' rights without any abuse.	Influence other colleagues to develop and design the ways how to show respect for students' rights without any abuse.	Lead colleagues to develop and design the ways how to show respect for students' rights without any abuse.
	Demonstrate knowledge and understanding of working with colleagues and takeholders in the interests of student learning.	Apply knowledge and understanding of working with colleagues and takeholders in the interests of student learning.	Coach other colleagues to implement knowledge and understanding of working with colleagues and takeholders in the interests of learning.	Influence other colleagues to develop and design the ways how to work with colleagues and takeholders in the interests of student learning.	Lead colleagues to develop and design the ways how to work with colleagues and takeholders in the interests of student learning.
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of punctuality for duties and consistency of kind behavior.	Apply knowledge and understanding of punctuality for duties and consistency of friendly and kind behavior.	Coach other colleagues to implement knowledge and understanding of punctuality for duties and good behavior.	Influence other colleagues to develop and design the ways of punctuality for duties and behavior.	Lead colleagues to develop and design the ways of punctuality for duties and consistency of friendly and kind behavior.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Apply knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Coach other colleagues to implement knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Influence other colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.	Lead colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.
	Demonstrate knowledge and understanding of code of ethics and law on education	Apply knowledge and understanding of code of ethics and law on education	Coach other colleagues to implement knowledge and understanding of code of ethics and law on education	Influence other colleagues to develop and design the effective implementation of code of ethics and law on education	Lead colleagues to develop and design the effective implementation of code of ethics and law on education
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Apply knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Coach other colleagues to implement knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Lead colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.	Lead team leaders to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of code of ethics and law on education	Apply knowledge and understanding of code of ethics and law on education	Coach other colleagues to implement knowledge and understanding of code of ethics and law on education	Influence other colleagues to develop and design the effective implementation of code of ethics and law on education	Lead colleagues to develop and design the effective implementation of code of ethics and law on education
1.4.3 Fairness and transparency	Demonstrate knowledge and understanding of professional integrity through treating others equally.	Apply knowledge and understanding of professional integrity through treating others equally and without bias.	Coach other colleagues to implement knowledge and understanding of professional integrity.	Influence other colleagues to develop and design the effective implementation of professional integrity.	Lead colleagues to develop and design the effective implementation of professional integrity.
1.4.4 Positive model of ethical behavior	Demonstrate knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Apply knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Coach other colleagues to implement knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Influence other colleagues to develop and design the effective positive attitude to students and others and engage students in their learning.	Create supportive projects for engaging students in their learning.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.4 Positive model of ethical behavior	Demonstrate knowledge and understanding of cultivating the values of ethical behavior in students and others.	Apply knowledge and understanding of the values of ethical behavior in students and others.	Coach other colleagues to implement knowledge and understanding of cultivating the values of ethical behavior in students and others.	Influence other colleagues to develop and design the effective ways how to cultivate the values of ethical behavior in students and others.	Lead colleagues to develop and design the effective ways how to cultivate the values of ethical behavior in students and others.
	Demonstrate knowledge and understanding of paying all students equal attention and access to resources irrespective of gender, disability, ethnicity or property.	Solve the issues related to student learning and provide with special need for disability, ethnicity or property.	Mentor colleagues to solve the complex issues related to student learning and provide with special need for disability, ethnicity or property.	Influence other colleagues to develop and design the effective ways how to pay all students equal attention and access to resources irrespective of gender, disability, ethnicity or property.	Build innovative team to solve the complex issues related to student learning and provide with special need for disability, ethnicity or property.
	Demonstrate knowledge and understanding of assessing learning outcomes fairly.	Apply knowledge and understanding of assessing learning outcomes fairly.	Coach other colleagues to implement knowledge and understanding of assessing learning outcomes fairly.	Influence other colleagues to develop and design the effective ways how to assess learning outcomes fairly.	Lead colleagues to develop and design the effective ways how to assess learning outcomes fairly.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
4. Authentic Student Achievement					
1. Construction of knowledge	Novice teacher has to teach their students to increase the construction of knowledge at least 60%	Teacher has to teach their students to increase the construction of knowledge at least 65%	Senior teacher has to teach their students to increase the construction of knowledge at least 80%	Distinguished teacher has to teach their students to increase the construction of knowledge at least 90%	Master teacher has to teach their students to increase the construction of knowledge at least 95%
2. Disciplined inquiry	Novice teacher has to teach their students to increase disciplined inquiry at least 55%	Teacher has to teach their students to increase disciplined inquiry at least 60%	Senior teacher has to teach their students to increase disciplined inquiry at least 75%	Distinguished teacher has to teach their students to increase disciplined inquiry at least 85%	Master teacher has to teach their students to increase disciplined inquiry at least 90%
3. Value beyond the school	Novice teacher has to teach their students to increase value beyond the school at least 50%	Teacher has to teach their students to increase value beyond the school at least 55%	Senior teacher has to teach their students to increase value beyond the school at least 70%	Distinguished teacher has to teach their students to increase value beyond the school at least 80.	Master teacher has to teach their students to increase value beyond the school at least 85%
Total	Novice teacher has to teach their students to increase authentic student achievement the school at least 55%	Teacher has to teach their students to increase authentic student achievement the school at least 60%	Senior teacher has to teach their students to increase authentic student achievement the school at least 75%	Distinguished teacher has to teach their students to increase authentic student achievement the school at least 85%	Master teacher has to teach their students to increase authentic student achievement the school at least 90%

4.3.3.3 Teacher Career Pathway for Upper School Teacher

The detail description of teacher career pathway for upper secondary school teacher is shown in table 29 below.

Table 28 Development of school teacher career pathway for upper secondary school

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1. Qualification					
1.1 Educational degree	Novice teacher holds at least associate degree in the field of subject matter teaching.	Teacher holds at least bachelor's degree in the field of subject matter teaching.	Senior teacher holds at least bachelor's degree in the field of subject matter teaching.	Distinguished teacher holds at least bachelor's degree in the field of subject matter teaching.	Master teacher holds at least Master's degree in the field of subject matter teaching.
1.2 Teaching license	Novice teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Senior teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Distinguished teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.	Master teacher holds teaching license recognized by ministry of education, youth and sport, Cambodia.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
2.Critical Developmental Experience					
2.1 Teaching experiences	Novice teacher has at least 1 year of teaching experiences.	Teacher has at least 2 to 4 years of teaching experiences.	Senior teacher has at least 5 to 9 years of teaching experiences.	Senior teacher has at least 10 to 14 years of teaching experiences.	Master teacher has at least 15 to 20 years of teaching experiences.
2.2 Teacher leadership experiences	Novice teacher does not have teacher leadership experiences.	Teacher has at least 1 to 2 years of teacher leadership experiences.	Senior teacher has at least 3 to 5 years of teacher leadership experiences.	Distinguished teacher has at least 6 to 10 years of teacher leadership experiences.	Master teacher has at least 11 to 15 years of teacher leadership experiences.
	Become home teacher and a member of subject matter area.	Become home teacher and a member of subject matter area.	Head of subject matter area for 3 years	Head of subject matter area for 5 years	Head of subject matter area for 7 years
	Novice teacher demonstrates his/her knowledge of classroom inspection	Teacher has experience of classroom inspection at least 2 times	Senior teacher has experience of classroom inspection at least 5 times	Distinguished teacher has experience of classroom inspection at least 10 times	Master teacher has experience of classroom inspection at least 15 times
	Member of professional learning community	Member of professional learning community	Facilitator of professional learning community	Mentor of professional learning community	Leader of professional learning community

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
2.3 Research and sharing experiences	Conduct the classroom research with experienced teachers at least 2 projects. Participate in academic research forum or symposium within own school or national level at least 2 times	Conduct the classroom research with experienced teachers at least 2 projects Participate in academic research forum or symposium within own school or national level at least 5 times	Conduct the classroom research with colleagues at least 4 projects Collaborate with colleagues to organize academic research forum or symposium within own school	Influence other with less experienced teachers to conduct Research at least 6 projects Organize academic research forum or symposium at school or local levels.	Lead to conduct the educational research and development with teacher team at least 8 projects Lead to design the academic research forum or symposium at national level
2.4 Teacher achievement	Assistant to experienced teachers to produce teaching lesson guideline books for instruction; lessons online and instructional materials.	Produce 1 teaching lesson guideline books for instruction; 4 online lessons and produce instructional materials 65% of the lessons they are responsible.	Produce 2 teaching lesson guidelines books for instruction; 6 online lessons, and produce instructional materials 75% of the lessons they are responsible	Produce 4 teaching lesson guidelines books for instruction; 8 online lesson and produce instructional materials for 85% of the lessons they are responsible.	Produce 6 teaching lesson guidelines books for instruction; 10 online lessons and produce instructional materials for 100% of the lessons they are responsible.
3.Competencies					
3.1 Professional knowledge					
1.2.1 Know student and how they learn	Demonstrate knowledge and understanding of physical, social, and	Apply knowledge and understanding of physical, social, and intellectual	Assist less experienced teachers to identify physical, social, and	Influence colleagues to develop and design models to identify	Lead colleagues to develop and design models for assessing and

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.2.1 Know student and how they learn	<p>intellectual development and characteristics of students (students' learning needs, learning capacity, attitude, learning style, and their family's background) and how these may affect student learning.</p> <p>Demonstrate knowledge and understanding of the impact of culture, cultural identity, and linguistic background on the education of students</p>	<p>development and characteristics of students (students' learning needs, learning capacity, attitude, learning style, and their family's background) and how these may affect student learning.</p> <p>Apply knowledge and understanding of the impact of culture, cultural identity, and linguistic background on the education of students</p>	<p>intellectual development and characteristics of students and how these may affect student learning, consider diversity of learners, and motivate active learning.</p> <p>Assist less experienced teachers to identify the impact of culture, cultural identity, and linguistic background on the education of students.</p>	<p>physical, social, and intellectual development and characteristics of students and how these may affect student learning, consider diversity of learners, and motivate active learning.</p> <p>Influence other colleagues to develop and design models in implementing knowledge and understanding of the impact of culture, cultural identity, and linguistic background on the education of students.</p>	<p>identifying physical, social, and intellectual development and characteristics of students on the 4 pillars of education.</p> <p>Design the implementation of knowledge and understanding of the impact of culture, cultural identity, and linguistic background on the education of students.</p>

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
	methods and strategies to meet the specific learning needs across the full range of abilities.	needs across the full range of abilities.	methods and strategies to meet the specific learning needs across the full range of abilities.	effective teaching methods and strategies to meet the specific learning needs across the full range of abilities.	and strategies to meet the specific learning needs across the full range of abilities.
3.2 Professional practice					
3.2.1 Planning and monitoring academic outcome	Demonstrate knowledge and understanding of making lesson plans, curriculum and assessment of student learning outcomes.	Apply knowledge and understanding of making lesson plans, curriculum, and assessment of student learning outcomes.	Coach other colleagues to make the effective lesson plans, curriculum, and assessment of learning outcomes to create productive learning environments that engage all students.	Work with colleagues to plan, evaluate and modify the effective lesson plans, curriculum development and assessment of learning outcomes to create productive learning environments that engage all students.	Lead initiative within the school to design and assess more effective lesson plans, curriculum, and assessment of learning outcomes to create productive learning environments that engage all students.
	Demonstrate knowledge and understanding of producing teaching and learning materials	Implement appreciate teaching and learning materials to achieve student learning outcomes.	Coach other colleagues to produce effective teaching and learning materials and use teaching and learning	Influence other colleagues to design and develop effective teaching and learning materials and	Develop and design modern teaching and learning materials using ICT to achieve student

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.1 Planning and monitoring academic outcome	to achieve student learning outcomes.		resources to achieve student learning outcomes.	learning resources to achieve student learning outcomes.	learning outcomes. Lead colleagues in selecting, creating, and evaluating resources for teaching materials.
	Understand a variety of appropriate teaching methods and student learning assessment.	Apply a variety of appropriate teaching methods and student learning assessment.	Coach other colleagues to improve a variety of effective teaching methods, strategies, and student learning assessment.	Influence other colleagues to design and develop a variety of effective teaching methods, strategies and student learning assessment.	Lead colleagues to research and develop a variety of effective teaching methods, strategies and student learning assessment.
	Demonstrate knowledge and understanding of following up student participation and maintaining records of student progress.	Apply knowledge and understanding of following up student participation and maintaining records of student progress.	Coach other colleagues to provide knowledge and understanding of following up student participation and maintaining records of student progress.	Influence other colleagues and stakeholders to keep in touch and follow up student participation and maintaining records of student progress.	Lead colleagues to keep in touch and follow up student participation and maintaining records of student progress.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.1 Planning and monitoring academic outcome	Demonstrate knowledge and understanding of feedback to students, parents, or guardians.	Apply knowledge and understanding of feedback to students, parents, or guardians.	Support colleagues with providing holistic feedback to students, parents, or guardians.	Influence other colleagues to develop a variety of platforms to give holistic feedback to students, parents, or guardians.	Lead colleagues to design and develop a variety of platforms and strategies to give holistic feedback to students, parents.
	Serve as a classroom teacher practicing in instructional tasks that improves student achievement for their own classes.	Serve as an effective classroom teacher practicing in instructional tasks that have the impact on student learning outcomes for their own classes.	Serve as a good model classroom teacher practicing in teaching, coaching and mentoring less experienced teachers on instructional tasks that have good impact on student learning outcomes for their own classes and may have an effect beyond their own classes.	Serve as a good teacher leader in subject matter area, coaching and mentoring less experienced teachers, collect and review data to improve effective lesson plans and teaching methods, and instructional tasks, and advocate for change.	Serve as a team teacher leader for coaching and mentoring the structural planning, professional development, and research and development on instructional issues, curriculum development, and policies on education
3.2.2 Management of learning environment	Demonstrate knowledge and understanding of safe learning environment and encouragement of all students to learn	Apply knowledge and understanding of safe learning environment and encouragement of all students to learn with their fullest potential.	Coach other colleagues to implement knowledge of safe learning environment and encouragement of all students to	Influence other colleagues to develop safe learning environment and encouragement of all students to learn	Lead colleagues to formulate strategies and mechanism for safe learning environment and encourage all

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
3.2.2 Management of learning environment	<p>with their fullest potential.</p> <p>Demonstrate knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Apply knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Coach other colleagues to implement knowledge and understanding of the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Influence other colleagues to develop and design the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>	<p>Lead colleagues to develop and design the effective ways how to provide students with opportunities for learning process such as problem solving, critical and creative thinking.</p>
	<p>Demonstrate knowledge and understanding of using information and communication technology for effective teaching and learning.</p>	<p>Apply knowledge and understanding of using information and communication technology for effective teaching and learning.</p>	<p>Coach other colleagues to implement knowledge and understanding of using information and communication technology for effective teaching and learning.</p>	<p>Influence other colleagues to develop and design the effective ways how to use information and communication technology for effective teaching and learning.</p>	<p>Lead colleagues to develop and design the effective ways how to use information and communication technology for effective teaching and learning.</p>

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
	Demonstrate knowledge and understanding of improving effective relationship with students, parents, colleagues, and community.	Apply knowledge and understanding of improving effective relationship with students, parents, colleagues, and community.	Coach other colleagues to implement knowledge and understanding of improving effective relationship with students, parents, colleagues, and community.	Influence other colleagues to develop and design the improving effective relationship with students, parents, colleagues, and community.	Lead colleagues to develop and design the improving effective relationship with students, parents, colleagues, and community.
3.3 Professional development					
1.3.1 Self-Learning	Demonstrate knowledge and understanding of self-evaluate their teaching and personal professional development plan.	Apply knowledge and understanding of self-evaluate their teaching and personal professional development plan.	Provide peer evaluation assistance, evaluate teacher practice, and make a personal development plan.	Influence other colleagues to design self-evaluation in teaching and learning and make a personal development plan.	Lead colleagues to design how to self-evaluate the effectiveness of teaching and learning and make a personal professional development plan.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
	Demonstrate knowledge and understanding of development of IT skills and foreign languages to apply for instruction improvement.	Apply knowledge and understanding of the development of IT skills and foreign languages to apply for instruction improvement.	Coach other colleagues to develop knowledge of IT skills and foreign languages to apply for instruction improvement.	Influence other colleagues to design how to develop knowledge of IT skills and foreign languages to apply for instruction improvement.	Lead colleagues to design how to develop knowledge of IT skills and foreign languages to apply for instruction improvement.
1.3.2 Participation in teaching and learning improvement	Demonstrate knowledge and understanding of reading academic and research articles to broaden knowledge to improve their instruction.	Apply knowledge and understanding of reading academic and research articles to broaden knowledge to improve their instruction.	Coach other colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction.	Influence other colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction.	Lead colleagues to analysis and evaluate academic and research articles to broaden knowledge to improve their instruction.
1.3.2 Participation in teaching and learning improvement	Participate in professional development trainings and workshops at least 30 hours per year.	Participate in professional development trainings and workshops at least 60 hours per year.	Participate in professional development trainings and workshops at least 60 hours per year.	Participate in professional development trainings and workshops at least 60 hours per year.	Participate in professional development trainings and workshops at least 30 hours per year.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
	Demonstrate knowledge and understanding of organizing teacher professional development training and workshops	Assistance to experienced teachers to organize teacher professional development training and workshops	Participate as a member of organizers to conduct the professional development for colleagues at least once a year	Organize the professional development for colleagues at least one a year	Lead to organize the professional development for colleagues at least twice a year
	Demonstrate knowledge and understanding of interaction with colleagues for professional learning community (PLC)	Apply knowledge and understanding of interaction with colleagues for professional learning community (PLC)	Participate as a member of professional learning community (PLC)	Establish a team of professional learning community (PLC) in school.	Lead the professional learning community (PLC) teams in school and outside.
3.4 Professional ethics					
3.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of attention and caring for students.	Apply knowledge and understanding of attention and caring for students.	Coach other colleagues to implement knowledge and understanding of caring for students.	Influence other colleagues to develop and design the effective caring for students.	Lead colleagues to develop and design the improving caring for students.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of communication with students, colleagues, and stakeholders	Apply knowledge and understanding of communication with students, colleagues, and stakeholders	Coach other colleagues to implement the effective communication with students, colleagues, and community.	Influence other colleagues to develop and design the effective communication with students, colleagues, and community.	Lead colleagues to develop and design the effective communication with students, colleagues, administrators.
1.4.1 Caring for students and working in the interests of students and society.	Demonstrate knowledge and understanding of showing respect for students' rights without any abuse and punishment.	Apply knowledge and understanding of showing respect for students' rights without any abuse and punishment.	Coach other colleagues to implement knowledge and understanding of showing respect for students' rights without any abuse.	Influence other colleagues to develop and design the ways how to show respect for students' rights without any abuse.	Lead colleagues to develop and design the ways how to show respect for students' rights without any abuse.
	Demonstrate knowledge and understanding of working with colleagues and stakeholders in the interests of student learning.	Apply knowledge and understanding of working with colleagues and stakeholders in the interests of student learning.	Coach other colleagues to implement knowledge and understanding of working with colleagues and stakeholders in the interests of learning.	Influence other colleagues to develop and design the ways how to work with colleagues and stakeholders in the interests of student learning.	Lead colleagues to develop and design the ways how to work with colleagues and stakeholders in the interests of student learning.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of punctuality for duties and consistency of kind behavior.	Apply knowledge and understanding of punctuality for duties and consistency of friendly and kind behavior.	Coach other colleagues to implement knowledge and understanding of punctuality for duties and good behavior.	Influence other colleagues to develop and design the ways of punctuality for duties and behavior.	Lead colleagues to develop and design the ways of punctuality for duties and consistency of friendly and kind behavior.
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Apply knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Coach other colleagues to implement knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Influence other colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.	Lead colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.
	Demonstrate knowledge and understanding of code of ethics and law on education	Apply knowledge and understanding of code of ethics and law on education	Coach other colleagues to implement knowledge and understanding of code of ethics and law on education	Influence other colleagues to develop and design the effective implementation of code of ethics and law on education	Lead colleagues to develop and design the effective implementation of code of ethics and law on education

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.2 Commitment and responsibility to the teaching profession	Demonstrate knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Apply knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Coach other colleagues to implement knowledge and understanding of showing enthusiasm and initiative in all aspects of professional activities.	Lead colleagues to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.	Lead team leaders to develop and design the ways how to show enthusiasm and initiative in all aspects of professional activities.
1.4.3 Fairness and transparency	Demonstrate knowledge and understanding of code of ethics and law on education through treating others equally.	Apply knowledge and understanding of code of ethics and law on education	Coach other colleagues to implement knowledge and understanding of code of ethics and law on education	Influence other colleagues to develop and design the effective implementation of code of ethics and law on education	Lead colleagues to develop and design the effective implementation of code of ethics and law on education
	Demonstrate knowledge and understanding of professional integrity through treating others equally.	Apply knowledge and understanding of professional integrity through treating others equally and without bias.	Coach other colleagues to implement knowledge and understanding of professional integrity.	Influence other colleagues to develop and design the effective implementation of professional integrity.	Lead colleagues to develop and design the effective implementation of professional integrity.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
1.4.4 Positive model of ethical behavior	Demonstrate knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Apply knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Coach other colleagues to implement knowledge and understanding of a positive attitude to students and others and engage students in their learning.	Influence other colleagues to develop and design the effective positive attitude to students and others and engage students in their learning.	Create supportive projects for engaging students in their learning.
	Demonstrate knowledge and understanding of cultivating the values of ethical behavior in students and others.	Apply knowledge and understanding of cultivating the values of ethical behavior in students and others.	Coach other colleagues to implement knowledge and understanding of cultivating the values of ethical behavior in students and others.	Influence other colleagues to develop and design the effective ways how to cultivate the values of ethical behavior in students and others.	Lead colleagues to develop and design the effective ways how to cultivate the values of ethical behavior in students and others.
	Demonstrate knowledge and understanding of paying all students equal attention and access to resources irrespective of gender, disability, ethnicity or property.	Solve the issues related to student learning and provide with special need for disability, ethnicity or property.	Mentor colleagues to solve the complex issues related to student learning and provide with special need for disability, ethnicity or property.	Influence other colleagues to develop and design the effective ways how to pay all students equal attention and access to resources irrespective of gender, disability, ethnicity, or property.	Build innovative team to solve the complex issues related to student learning and provide with special need for disability, ethnicity or property.

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher ethnicity, or property	Master Teacher
1.4.4 Positive model of ethical behavior	Demonstrate knowledge and understanding of assessing learning outcomes fairly.	Apply knowledge and understanding of assessing learning outcomes fairly.	Coach other colleagues to implement knowledge and understanding of assessing learning outcomes fairly.	Influence other colleagues to develop and design the effective ways how to assess learning outcomes fairly.	Lead colleagues to develop and design the effective ways how to assess learning outcomes fairly.
4. Authentic Student Achievement					
1. Construction of knowledge	Novice teacher has to teach their students to increase the construction of knowledge at least 60%	Teacher has to teach their students to increase the construction of knowledge at least 65%	Senior teacher has to teach their students to increase the construction of knowledge at least 80%	Distinguished teacher has to teach their students to increase the construction of knowledge at least 85%	Master teacher has to teach their students to increase the construction of knowledge at least 90%

Career Pathway	Novice Teacher	Teacher	Senior Teacher	Distinguished Teacher	Master Teacher
2. Disciplined inquiry	Novice teacher has to teach their students to increase disciplined inquiry at least 55%	Teacher has to teach their students to increase disciplined inquiry at least 60%	Senior teacher has to teach their students to increase disciplined inquiry at least 65%	Distinguished teacher has to teach their students to increase disciplined inquiry at least 80%	Master teacher has to teach their students to increase disciplined inquiry at least 85%
3. Value beyond the school	Novice teacher has to teach their students to increase value beyond the school at least 50%	Teacher has to teach their students to increase value beyond the school at least 55%	Senior teacher has to teach their students to increase value beyond the school at least 65%	Distinguished teacher has to teach their students to increase value beyond the school at least 75.	Master teacher has to teach their students to increase value beyond the school at least 80%
Total	Novice teacher has to teach their students to increase authentic student achievement the school at least 55%	Teacher has to teach their students to increase authentic student achievement the school at least 60%	Senior teacher has to teach their students to increase authentic student achievement the school at least 70%	Distinguished teacher has to teach their students to increase authentic student achievement the school at least 80%	Master teacher has to teach their students to increase authentic student achievement the school at least 85%

CHAPTER 5

SUMMARY OF RESEARCH FINDING, DISCUSSION AND RECOMMENDATIONS

The purpose of this research study was to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement. The three specific objectives were 1) to examine the conceptual framework of teacher career pathway and authentic student achievement, 2) to explore the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement, and 3) to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement. The mixed methods-multiphase research design was conducted to respond to the objectives of research above.

This research was conducted to ensure that the development of school teacher career pathway in Cambodia would be consistent with the context of human resource management in education in Cambodia, the MoEYS's radical vision, and the regional and global trends of the 21st century.

In this chapter, the summary of the research findings, discussion and recommendations were described as follow.

5.1 Summary of Research Findings

The research finding revealed that 1) the conceptual framework of school teacher career pathway comprises of teacher position, career pathway of each position, qualification, critical developmental experience, and competencies, and authentic student achievement comprises of construction of knowledge, disciplined inquiry, and valued beyond the school, 2) the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement were categorized into three groups consisting of pre-school and primary school teacher, lower secondary school teacher, and upper secondary school teacher, and five professional titles of career pathway for teachers consisting of novice teacher, teacher, senior teacher,

distinguished teacher and master teacher, and 3) the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement consists of 6 key components, namely (1) teacher position consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers, (2) career pathway consisting of novice teacher, teacher, senior teacher, distinguished teacher, and master teacher, (3) qualification consisting of educational degree, and teaching license, (4) critical developmental experiences consisting of teaching experiences, teacher leadership experiences, research and sharing experiences, and teacher achievement, and (5) competencies consisting of professional knowledge, professional practice, professional development, and professional ethics, and (6) authentic student achievement consisting construction of knowledge, disciplined inquiry, and valued beyond the school.

5.1.1 The conceptual framework of school teacher career pathway and authentic student achievement.

In this study, there were two phases using to examine the conceptual framework of school teacher career pathway and authentic student achievement. Firstly, phase1: empathize school teacher career pathway and authentic student achievement, and secondly, phase2: define the conceptual framework of research.

In the first phase, this research aims at studying the concepts and previous research studies. The researcher has reviewed the concepts of school teacher career pathway models of three countries including Singapore, Thailand, and Cambodia in order to make the first draft of the research's conceptual framework and authentic student achievement. The conceptual framework of school teacher career pathway was found that five key components consist of teacher position, career pathway of each position, qualification, critical developmental experience, competencies, and the authentic student achievement was found that three key components comprise of three components consisting construction of knowledge, disciplined inquiry, and value beyond the school.

The conceptual framework of school teacher career pathway

- 1) Teacher position includes pre-school and primary school teacher, lower secondary school teacher, and upper secondary school teacher.
- 2) Career pathway of each position includes novice teacher, teacher, senior teacher, distinguished teacher, and master teacher.
- 3) Qualification includes educational degree and teaching license
- 4) Critical developmental experiences include teaching experience, teaching leadership experience, research and sharing experience, and teacher achievement.
- 5) Competencies include professional knowledge, professional practice, professional development, and professional ethics.

The conceptual framework of authentic student achievement

The conceptual framework of authentic student achievement includes 1) construction of knowledge consisting of organization and analysis and consideration of alternatives, 2) disciplined inquiry consisting of disciplinary content and concepts, disciplinary process, and elaborated communication, and 3) value beyond school consisting of problem connected to the world beyond the classroom, and audience beyond the school.

In second phase, the conceptual framework of the research was defined by conducting the mini-structured interview with 30 informants including 07 policy makers, 06 expert of teacher professional development, 02 experts of school human resource management, 05 school administrators, and 10 school teachers and validated by 05 experts of human resource management in education, teacher professional development, and educational policy makers.

The content validity and reliability of conceptual framework was found that one out of five experts recommended that four categories of teacher position should be considered to revise into three teacher positions consisting of pre-school and primary

school teacher, lower secondary school teacher, and upper secondary school teacher in order to respond to the categories of teacher in Cambodian context. Teacher professional standards should be considered to integrate into components of career pathway as teacher career pathway criteria for each stage of career pathway. The authentic student achievement that includes construction of knowledge, disciplined inquiry, and value beyond the school was evaluated that it was very useful to measure the authentic achievement of teachers to be promoted in advanced professional titles along career pathway. In conclusion, the result of suitability and feasibility evaluation of conceptual framework was utilized to construct the research instrument in this research.

5.1.2 The desirable state of school teacher career pathway in Cambodia based on the concept of authentic student achievement

In the third phase, the researcher aims at exploring the desirable states of school teacher career pathway in Cambodia based on the concept of authentic student achievement in Cambodia. The questionnaires were used to collect data from 491 informants including of 40 school administrators and 451 school teachers of pre-school, primary school, lower secondary schools, and upper secondary schools under the supervision of Ministry of Education, Youth and Sport, Kingdom of Cambodia.

The finding was found that teacher position was classified into three categories: pre-school and primary school teacher, lower secondary school teacher, and upper secondary school teacher.

The findings of teacher career pathway indicate that there were five professional titles of each teacher position; novice teacher, teacher, senior teacher, distinguished teacher and master teacher. The educational degree for each teacher career pathway in pre-school and primary schools was shown that novice teacher and teacher should hold associate degree, followed by senior teacher who should hold bachelor's degree, and then, distinguished teacher and master teacher should hold master's degree. Entering teacher career pathway, teachers must have teaching license and credential letter.

Teachers with a minimum of 1-5 years of work experiences in teaching and teaching leadership, 15 hours of professional development credits, and competencies increasing authentic student achievement in terms of 55% of construction of knowledge, 56 % of disciplined inquiry, and 52% of value beyond school, had become a novice teacher and then moved up the next level with required criteria.

The findings of educational degree in lower secondary school indicated that novice teacher school should hold associate degree, followed by teacher and senior teacher who had with bachelor's degree, and then distinguished teacher and master teacher should hold master's degree. Entering teacher career pathway, teachers must have teaching license and credential letter. Teachers with a minimum of 1-5 years of work experiences in teaching and teaching leadership, 15 hours of professional development credits, 2 research projects done, and competencies increasing authentic student achievement in terms of 58% of construction of knowledge, 62 % of disciplined inquiry, and 54% of value beyond school, had become a novice teacher and then moved up the next level with required criteria.

The findings of educational degree in upper secondary school indicated that novice teacher and teacher should hold bachelor's degree, followed by senior teacher, distinguished teacher, and master who should hold master's degree. Entering teacher career pathway, teachers must have teaching license and credential letter. Teachers with a minimum of 1-5 years of work experiences in teaching and teaching leadership, 15 hours of professional development credits, 2 research projects done, and competencies increasing authentic student achievement in terms of 54% of construction of knowledge, 60 % of disciplined inquiry, and 58% of value beyond school, had become a novice teacher and then moved up the next level with required criteria.

5.1.3 The development of school teacher career pathway in Cambodia based on authentic student achievement

The development of the school teacher career pathway in Cambodia based on the concept of authentic student achievement consists of 6 key components, namely (1)

teacher position consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers, (2) career pathway consisting of novice teacher, teacher, senior teacher, distinguished teacher, and master teacher, (3) qualification consisting of educational degree, and teaching license, (4) critical developmental experiences consisting of teaching experiences, teacher leadership experiences, research and sharing experiences, and teacher achievement, and (5) competencies consisting of professional knowledge, professional practice, professional development, and professional ethics, and (6) authentic student achievement consisting construction of knowledge, disciplined inquiry, and valued beyond the school.

5.2 Discussion of Research Findings

The research study aimed to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement. The three objectives were fulfilled to develop school teacher career pathway in Cambodia based on the concept of authentic student achievement. Below are the discussions about these results.

5.2.1 The conceptual framework of school teacher career pathway and authentic student achievement

The analysis of conceptual framework of school teacher career pathway and authentic student achievement, the conceptual framework of school teacher career pathway was found that five key components consist of teacher position, career pathway of each position, qualification, critical developmental experience, competencies, and the authentic student achievement was found that three key components comprise of three components consisting construction of knowledge, disciplined inquiry, and value beyond the school. It was supported by Carter et al. (2011) that he identified the components of career paths consisting of five fundamental components: 1) sequential list of positions or roles, 2) qualifications required at each node or each career stage, 3) critical developmental experiences, 4) competencies, and 5) career success factor. The school career pathway pattern chosen for this study was a little different from the existing career pathway patterns found in other countries such

as Thailand, Singapore, and South Korea. Based on benchmarking from the pattern in Thailand, the career ladder/pathway in Thailand began with assistant teacher and moving up teacher, professional teacher, senior professional teacher, expert teacher, and senior expert teacher. The educational degree for teachers begins with bachelor's degree that is higher qualification than Cambodia. In Singapore, all teachers are required to become classroom teachers to teach at school first and then schoolroom teachers are eligible to apply for the next step as senior teacher, master teacher, and principal master teachers.

5.2.2 The desirable state of school teacher career pathway in Cambodia based on the concept of authentic student achievement

The results of survey with 491 samples of school administrators and school teachers shows that 476 respondents (97%) agree on teacher position in which were categorized into three groups consisting of pre-school and primary school teacher, lower secondary school teacher, and upper secondary school teacher, and 482 respondents (98%) strongly agree on teacher career pathway in which were proposed with five professional titles consisting of novice teacher, teacher, senior teacher, distinguished teacher and master teacher.

The analysis of teacher position and career pathway of each position research findings reveal that school administrators and school teachers strongly need to be developed school teacher career pathway that comprises of teacher position with three categories and career pathways of each position with five professional titles. Regarding teacher position, it was shown that in line with civil servants, the royal government of Cambodia (2010) identified that civil servants of education sector are classified into three categories including category A bachelor's degree for high school teacher and university teacher, category B associate degree for basic education level teacher, and category C high school diploma for pre-school and primary school teacher.

It was indicated that the current state of teachers who have entered into teaching profession seems to be in comfort zone. The teachers have generally been evaluated

with seniority of the length of teaching experience years, schedule grade promoted every two or three years of working with less increment salary schedule that seems not to encourage and support teachers to perform with their best efforts. For teachers who want to maximize their fullest potential in the classroom, they need the career pathway that enable them to advance their profession with professionalism and high incentives. Like some other countries, Ministry of Education Singapore (2014) refined that teaching track has five levels starting from classroom teacher, move up senior teacher, lead teacher, master teacher, and principal master teacher. In Thailand, career pathway for public school teachers has six levels starting from assistant teacher, move up teacher, professional teacher, senior professional teacher, expert teacher, and senior expert teachers. It was shown that career pathway for teachers in Cambodia and Singapore has the same five levels of career pathway. Regarding professional titles of career pathway, the first two levels of career pathway of Thailand and Cambodia is not included as professional titles or academic status for teachers, it starts from the third level of career pathway.

Concerning the educational qualification, the findings revealed that educational degrees for pre-school, primary, and lower secondary teachers are the same, with associate degrees for the first entry-level as novice teachers. Then, they move up to the next step called “teachers” with bachelor’s degrees, and to “senior teachers” with the master’s degrees which are also required for the last two career pathway titles – distinguished teachers and master teachers. However, the entry-level teacher in upper secondary education starts with novice teachers and teachers who are both equipped with bachelor’s degrees; then senior teachers, distinguished teachers, and master teachers who possess master’s degrees. At this point, it is imperative to explain that the subsequence of increasing educational degrees is for career advancement.

The analysis of educational qualification findings reveals that first stages of career pathway for teachers in pre-school and primary school, and lower secondary school was associate degree. It indicates that current state of teacher education program

in Cambodia for pre-school and primary school, and lower secondary schools has still used the formula (12+2) that applicants who graduated from grade 12 take entrance to be trained two more years in provincial or regional teacher training centers. In the past,

To respond to this requirement, teachers must broaden their knowledge by upgrading their educational degree to gain at least bachelor's degrees or master's degrees. The quality of teaching is closely associate with educational qualification attainment of teachers. Upgrading the qualification of teachers has a very high positive impact on improving the quality of education (Dy.S.S,2017). In 2015 the Ministry of Education, Youth and Sport adopted its Teacher Policy Action Plan (TPAP) aimed at increasing PRESET teacher qualifications, providing INSET training program for the teaching professions through upgrading two regional teacher training Centers in Phnom Penh and Battambang provinces into teacher education college (TEC) to increase PRESET teacher qualifications from (12+2) to a Bachelor degree level (12+4) for primary and lower secondary school teachers and providing INSET training program for 2,000 primary and lower secondary school teachers through a fast-track INSET program in 2016 at Royal University of Phnom Penh (MoEYS,2016). It is recommended that educational qualification of teachers at all levels should start with bachelor's degree by 2025 in responsive to the regional standards requirement.

The critical developmental experiences in teaching, teacher leadership, professional development, and research project are subject to the increasing length of work time and number of years. It is noted that three teacher positions: pre-school primary school teacher, lower secondary school teacher, and upper secondary school teachers require the same number of 1 to 5 years in teaching experiences. It indicates that applying for senior teacher titles requires teachers to have teaching experiences in the classroom at least 1 to 5 years so that they may expertise in teaching methods and assessing student learning processes and outcomes. There are two keys questions to raise for teaching experiences effecting student learning outcomes; the first question: Is the typical experienced teacher more effective at raising student learning outcomes that

the typical inexperienced teachers? and the second question: Do teachers continue to improve in their effectiveness as they gain experience in the teaching profession?

Findings from a current research study by Kini and Podolsky (2016) showed that teaching experience was positively associated with student achievement in which gains throughout a teacher's career. Additionally, teacher effectiveness associated with experience are most steep in their first year and continue to be significant as teachers reach the second, and often third, decades of their careers. The more experienced teachers support, the greater student learning for their colleagues and the school as a whole, as well as for their own students. As teachers gain experience, their students not only learn more effectively, as measured by standardized tests, they are also more likely to develop better on other measures of success.

According to Elmore's "trait theories" of competence in instructional practice of good teachers, they have the necessary personal qualities for the work and work in an organizational environment in which they are expected to be competent at what they do as a condition of employment but not because they have mastered some body of professional (Elmore, 2004). He mentioned that becoming good teachers must have professional knowledge, professional practice, and professional ethics and be supported by people around them and working environment. Even though, they have a lot of knowledge and working experiences, but they don't have commitment to work with their heart, it might not be useful to their profession.

On the other hand, teacher leadership experiences require 6-10 years for senior teachers, and 11-15 years for distinguished teachers, together with master's degrees. As stated earlier, professional development is essential for moving up from one level to the next. Novice teachers at the entry level need to attain the professional development that covers at least 15 hours, then increase to at least 30 hours for the development course of teachers, and then at least 60 hours for the senior teachers, the distinguished teachers, and the master teachers in upper secondary school, after that 90 hours for distinguished teacher and 120 hours for master teacher in lower secondary school. Teachers at all

positions are required to conduct research projects. At the time, the number of required research projects has increased from 2 projects to 8 projects. This indicates that the higher level of position the teacher moves, the more research projects he needs to conduct.

The analysis of the professional development for teachers findings reveal that the number of hours of professional development for entry level to advanced level have increased from 15 hours, to 30 hours, 60 hours, 90 hours, and 120 hours per year. It was shown that the higher level teachers advance up, the more number of hours of professional development teachers get. To be more professional, the knowledge and skills are necessary to be developed and lifelong learning within their own professional practice. Reskilling and upskilling are critical for teachers and school directors to remain relevant and effective. MoEYS will ensure that teachers have the opportunity of continuous professional development through several models and approaches – a balanced approach. This will enable them to upgrade their expertise in terms of knowledge, skills, attitudes, and behavior, and qualifications and move along their preferred career pathway. It is also very important to strengthen education quality to align with the SDG4, as well as strengthen regional integration. There are direct benefits to teachers of continuous professional development include: 1) improved subject-area knowledge, teaching methodologies, and understanding of learning theory, 2) increased opportunities for career advancement with associated benefits, 3) opportunities for career transition to specialist teaching, educational leadership, and teacher education, 4) opportunities for appointment as outstanding, distinguished, and lead teachers, 5) recognition awards for service and excellence in their profession, 6) increased opportunities for further study domestically and internationally, 7) access to national trainer programs, and 8) Improved status within their profession and community.

In responsive to the professional development in the education sector, Cambodia Education Law (2007) is the legislative reference for professional development of education personnel consisting two sections specifically related to

professional development are: (i) Article 20: Educational personnel training, and (ii) Article 37: Rights and Obligations of Educational Personnel. The National Strategic Development Plan (2014-2018) highlights the government's focus on improving the quality and effectiveness of education through promoting early grade reading skills, developing basic life-skills training programs, allowing students to select subjects of their choice, improving the relevance of the curriculum and textbooks, designing evaluation standards for student achievement, and improving the supply of learning materials and textbooks. Cambodia Industrial Development Policy (2015-2025) emphasizes skills and human resource development through: (i) strengthening the quality of education at primary and secondary levels by focusing on STEM; (ii) promoting general education for at least 9 years; and (iii) improving curriculum by integrating soft skills and including social communication skills in problem solving. The MoEYS Human Resource Development Policy (2012) was developed to require the transformation of MoEYS personnel to be more competent, effective, efficient, and reliable in the provision and support of educational services, which contribute to the capacity development of individuals and institutions. The MoEYS Teacher Policy (2013) promotes the development of teachers with knowledge, skills, and moral and professional competencies recognized by Cambodian society.

The last component of career pathways is teacher's competency that enables to increase authentic student achievement in terms of construction of knowledge, disciplined inquiry, and value beyond school. The findings indicated at the construction of knowledge increased from 54% as novice teachers to 69% as teachers, then up to 71% when becoming senior teachers, but dropped to 61% at the positions of distinguished teachers and master teachers. Likewise, the disciplined inquiry of novice teachers was 60%, then increased to 73% and 74% when becoming teachers and senior teachers. The disciplined inquiry dropped down a little bite to 73% and 71% when they became distinguished teachers and master teachers. Similar conditions occurred in the findings concerning value beyond the school. The percentages were 58%, 72%, and 73% in novice

teachers, teachers, and senior teachers, then dropped to 71% when they became distinguished teachers and master teachers. This may be assumed that distinguished teachers and master teachers should pay more attention to research projects, teacher leadership roles, and development of inquiry skills. Consistently, Avalos (2011) identified that the primary role of the master teacher is to visit classrooms and coach teachers by using reflective practice to improve instruction. Furthermore, he argued that the specific responsibilities of the master teachers consist of curriculum and professional development and support such as providing individual support and planning small group meetings or training for teachers.

5.2.3 The suitability and feasibility of development of school teacher career pathway in Cambodia based on the concept of authentic student achievement

In this phase, researcher conducted the focus group of 11 experts consisting of 4 experts of educational policy makers, 3 experts of school human resource management, 3 experts of teacher professional development training and 1 school administrator to evaluate the suitability and feasibility of school teacher career pathway in Cambodia based on the concept of authentic student achievement.

Therefore, the opinions and suggestions of experts and stakeholders obtained from the focus group discussion would be synthesized and categorized using content analysis. Consequently, those valuable main ideas would be taken to consult with thesis advisors to define some significant main points for improvement and then finalize the last version of school teacher career pathway based on authentic student achievement.

The recommendations of focus group experts on development of school teacher career pathway showed that the school teacher career pathway should add more sub components to 4 key components of teacher career pathway existing that consists of 1) sequential list of teacher position and career pathway, 2) qualification including educational qualification, professional knowledge, professional practice, and professional ethics, 3) critical developmental experiences including teaching experiences, teacher leadership experiences, professional study, and research and sharing experiences, 4) competencies of teachers that enable to increase authentic

student achievement in terms of construct of knowledge, disciplined inquiry, and value beyond the school. The description of each component would be adopted and refined as follows:

It was found in this study that educational qualification can be adopted. The educational qualification degrees for pre-school, primary, and lower secondary teachers are associated with associate degrees for the first entry-level as novice teacher, followed by the next three steps; teachers, senior teacher, and then distinguished teacher with bachelor's degrees, and the last step; master teachers with master's degree. However, the first three steps; novice teacher, teacher, and senior teacher in upper secondary school teachers were associated with bachelor's degrees; and then last two steps distinguished teacher, and master teacher with master's degrees.

It was found in this study that teaching experiences can be adopted in responsive to Cambodian context. The teaching experiences for pre-school, primary, lower secondary teachers, and upper secondary school teachers are at least 1 year for the first entry-level as novice teacher, followed by the next steps; teachers with 2 to 4 years, senior teachers with 5 to 9 years, distinguished teacher with 10 to 14 years, and the last step; master teachers with 15 to 20 years. In line with teacher career pathway in Britain, it can be shown that the positive impact on better teaching quality have probably contributed in significant ways to the improvement of education in the country and a teacher career pathway with differentiated additional responsibilities in American, teachers can be models and mentors, promote better teaching in general and be a significant force in developing good, workable curriculum that will enhance student learning achievement (Murphy, 1984). However, the importance of teaching experiences is earlier mentioned, it could be more useful to improve their teaching quality by learning from past experiences and sharing those with colleagues and upgrading their knowledge with modern technology.

The findings of research experiences can be adopted in responsive to Cambodian context. The research experiences for novice teacher of pre-school and

primary school education are not required to do project, just only demonstrates their knowledge and understanding of principles and scientific methods of research, followed by teacher required to conduct the classroom research with experienced teachers at least 2 projects, and then senior teacher with 4 projects, after distinguished teacher with 6 projects, and master teacher with 8 projects. Novice teacher at lower secondary school required to conduct the classroom research with experienced teachers at least 1 project, followed by teacher with 2 projects, and then senior teacher with 4 projects, after distinguished teacher with 6 projects, and master teacher with 8 projects. Novice teacher and teacher at upper secondary school required to conduct the classroom research with experienced teachers at least 2 projects, followed by senior teacher with 4 projects, and then distinguished teacher with 6 projects, and master teacher with 8 projects.

The findings of authentic student achievement in terms of construct of knowledge, disciplined inquiry, and valued beyond the school can be adopted. 55% of authentic student achievement for novice teachers are for at all levels, 65% for teachers at pre-school and primary school teacher, 60% for teachers at lower and upper secondary school, 75% for senior teachers at pre-school and primary school and lower secondary school, 70% for senior teacher at upper secondary school, 85% for distinguished teachers at pre-school and primary school and lower secondary school, 80% for distinguished teachers at upper secondary school, 95% for master teacher at pre-school and primary school, 90% for master teacher at lower secondary school, and 85% for master teacher at upper secondary school.

In conclusion, the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement consists of 6 key components, namely 1) teacher position consisting of pre-school and primary teachers, lower secondary school teachers, and upper secondary school teachers, 2) career pathway consisting of novice teacher, teacher, senior teacher, distinguished teacher, and master teacher, 3) qualification consisting of educational degree, and teaching license, 4) critical developmental experiences consisting of teaching experiences, teacher leadership experiences, research and sharing experiences, and teacher achievement, and 5)

competencies consisting of professional knowledge, professional practice, professional development, and professional ethics, and 6) authentic student achievement consisting construction of knowledge, disciplined inquiry, and valued beyond the school.

5.3 Recommendations

Based on the research findings and discussion, the development of school teacher career pathway in Cambodia based on the concept of authentic student achievement is suitable for the context of human resource management in education in Cambodia. However, there have been big challenges and constraints that effect the effectiveness of the implementation of this career pathway. Hence, some recommendations are made for policy making, practice in schools in Cambodia, and further research studies.

5.3.1 Policy Recommendations

The Ministry of Education, Youth and Sport, Cambodia should set a specific policy aimed at implementing the school teacher career pathway that could be more attractive, motivated, with high retention rate in the education system and policy strategies to increase induction and support new teacher program and to promote professional learning community.

One more thing that should be put into further consideration or a policy is that teachers who are successfully evaluated and promoted as senior teachers, distinguished teachers, and master teachers will be nation widely recognized, rewarded with monthly incentives, supported with continuous professional development programs, and other benefits. MoEYS should establish the rigorous teacher performance appraisal system, compensation system, and continuous teacher professional development organizations that may be collaborative public and private partners. The evaluation system is very crucial, especially at school level, considering to self-evaluation, school evaluation committee, and external evaluation committee. The evaluation should have two phases:

- 1) annual teacher performance appraisal at school level should be linked to student learning outcomes in the classroom, teacher profiles, teachers' achievement, and

participation of professional learning community, and 2) assessment for professional title promotion through examination and observing teacher performance in terms of their teaching methods and classroom management.

5.3.2 Practical Recommendations

1) Ministry of Education, Youth and Sport should have rigorous guidelines for teacher career pathway implementation to introduce and disseminate to teachers and stakeholders. MoEYS makes mechanism on pilot program for three years and then broadly implement for long term.

2) School administrators should establish teacher career pathway steering committee, internal teacher performance appraisal system, dual agreement of teachers and school administrators on annual professional development plan, monitoring and supporting system, teacher profiles, and personnel data base management.

3) Teachers should have awareness of teacher career pathway, self-assessment their capacities, potential and aptitude to make annual personal development plan, participate in continuous professional development, share their knowledge and experiences with colleagues and teachers beyond the schools, and especially increase authentic student achievement.

5.3.3 Further Research Recommendations

Future research study could be undertaken according to the following recommendations: Firstly, to address the conceptual framework of teacher career pathway, the future research should additionally study a career roadmap to show what key factors for a successful implementation for moving up within schools in the ways that facilitate growth and career advancement to increase their expertise. Secondly, the future research should also study about teacher performance appraisal system and compensation system to support the implementation of teacher career pathways. Thirdly, the future research should additionally and particularly explore how to monitor

the use of model and bring feedback to improve the model, career development, training roadmap, and talent management. Finally, the further research should explore career pathway for technical education teachers.



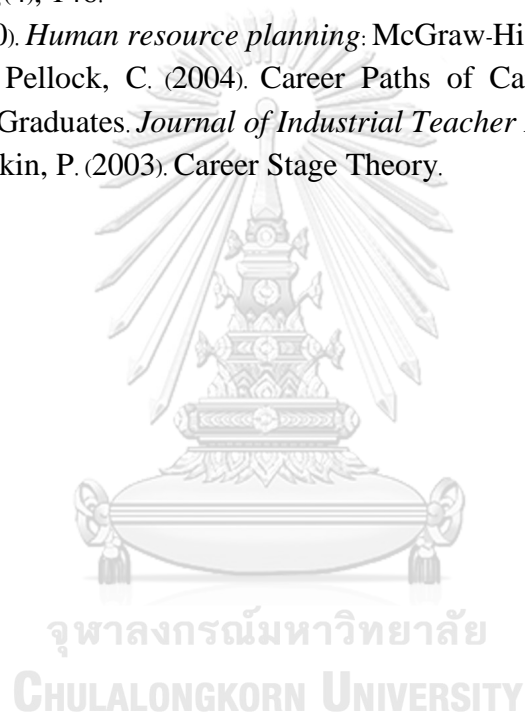
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APPENDIX

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

APPENDIX 1



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Examination of Questionnaire Validity

Research Questionnaire: “Development of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement”.

Introduction:

This research is the partial fulfilment of requirements for the degree of doctor of philosophy in Educational Management, department of Educational Policy, Management, and Leadership, Faculty of Education, Chulalongkorn University, Thailand. The objective of this questionnaire is to study the desirable states of school teacher career pathway in Cambodia based on authentic student achievement. The researcher would like to ask you for help in examining the validity of the questionnaire to achieve maximum benefit in the development of research tools and research objectives.

The results from the questionnaire will be used to develop school teacher career pathway in Cambodia based on authentic student achievement.

There are three sections in this examination of the validity of the questionnaire:

Section 1: The general information of the expert.

Section 2: The variables in the research that must be measured.

Section 3: Suggestions to improve the questionnaire.

The data obtained from examination of the validity of the questionnaire is used to validate the tool of research to collect data for development of school teacher career pathway in Cambodia based on authentic student achievement. The information obtained from this questionnaire will be kept confidential and not have negative impact on the respondents or your position.

Mr. Meak Chantheng

Doctor of Philosophy Student in Educational Management

Department of Education Policy, Management and Leadership

Faculty of Education

Chulalongkorn University

Section 1. The variables that must be measured in the research

Introduction: Please consider the following measures that meet the definition or not.

Please tick () in the box that is true for you. The criteria are as follows:

-1 Means you think this is unsuitable

0 Means you are not sure

+1 Means you think this is suitable

Results of the examination of the validity of the questionnaire

Experts: 1. Dr. Hang Chuon Naron, 2. Dr. Nath Bunroeun, 3. Dr. Dy Samsideth,

4. Dr. Chhinh Sitha, 5. Dr. Sok Soth

Item	Experts					IOC	Suggestions
I-School Teacher Career Pathway							
1. Teacher Position (Teacher Categories)	+1	+1	+1	+1	-1	0.8	Should be divided into 3 categories (1. Primary and pre-school teacher, 2. Lower secondary school teacher, and 3) upper secondary school teacher) based on the system of civil servants in Cambodia for education
1.1 Kindergarten teacher							
1.2 Primary teacher							
1.3 Lower secondary teacher							
1.4 Upper secondary teacher							
2. Career Pathway of Each Position (Professional title of each teacher category)	+1	+1	0	-1	-1	0.4	Should start from teacher following by professional teacher, senior professional teacher,
2.1 Novice teacher							
2.2 Teacher							
2.3 Senior teacher							
2.4 Distinguished teacher							
2.5 Master teacher							

II-Components of Career Pathway							
1. Sequential list of Teacher Positions and Career Pathways 1.1 Sequence of teacher positions 1.2 Sequence of career pathways	+1	+1	0	-1	+1	0.6	Teachers will not be able to answer this question.
2. Qualification							
2.1 Educational qualification: Teachers should hold: -Associate Degree -Bachelor Degree -Master Degree -Doctoral Degree	+1	+1	0	-1	-1	0.4	Pre-school teachers only, Should start from bachelor's degree
2.2 Teaching license: Teachers should have teaching license to enter the career pathway.	+1	0	+1	0	+1	0.6	Cambodian teachers have a life license which is not good.
2.3 Credential letter: Teachers should have teacher credential letter for entering each career pathway.	+1	0	+1	0	+1	0.6	
3. Critical Developmental Experiences							
3.1 Teaching experiences: Number of years in teaching experiences for entering each career pathway	+1	+1	+1	+1	+1	1.0	2-3 years
3.2 Teacher leader experience: Number of years of teacher leader experiences for entering each career pathway.	+1	+1	+1	+1	+1	1.0	3-5 years
3.3 Professional development: Number of hours of professional development yearly for entering each career pathway.	+1	+1	+1	+1	+1	1.0	100-120hs # of Credits
4. Competencies: Teacher's competencies that enable to increase authentic student achievement better.							
4.1 Construction of knowledge							
1) Organization and analysis: Require students to organize, synthesize , interpret, explain, and evaluate complex information in addressing a concept or issue.	+1	+1	+1	+1	+1	1.0	It is good but I don't think teachers will understand it
2) Consideration of alternatives: Require students to consider alternative solutions, strategies, and perspectives in addressing a concept or issue.	+1	+1	+1	+1	+1	1.0	It is good but I don't think teachers will understand it

4.2 Disciplined Inquiry						
1) <i>Disciplinary content and concepts:</i> Require students to show their understanding, ideas or perspectives, and use their theories considered central to an academic or professional discipline.	+1	+1	+1	+1	+1	1.0
2) <i>Disciplinary process:</i> Require students to use methods of inquiry or research, to use the communication characteristic of an academic, and to use the communication characteristic of professional discipline.	+1	+1	0	+1	+1	0.8
3) <i>Elaborated communication:</i> Require students to present explanations and make conclusions through extended forms of oral, written, and symbolic language.	+1	+1	+1	+1	+1	1.0
4.3 Value beyond the school						
1) <i>Problem connected to the world beyond the classroom:</i> Require students to address a concept and issue that is similar to one they are likely to encounter in life beyond the classroom.	+1	+1	+1	+1	+1	1.0
2) <i>Audience Beyond the School:</i> Ask students to direct performances to someone other than the teacher, classroom, and school. The students are required to communicate their knowledge, present a product or performance, and take some action for audience beyond the teacher, classroom, and school.	+1	+1	+1	+1	+1	1.0
Total of IOC						0.82

Section 3: Suggestions to improve the questionnaire.

- 1) Teacher Position** (Teacher Categories): Should be divided into 3 categories (1. Primary and pre-school teacher, 2. Lower secondary school teacher, and 3) upper secondary school teacher) based on the system of civil servants in Cambodia for education
- 2) Career Pathway of Each Position:** Should start from teacher following by professional teacher, senior professional teacher.
- 3) Educational qualification:** Teachers should hold associate degree for Pre-school teachers only, and other should start from bachelor's degree

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Questionnaire

“Desirable State of School Teacher Career Pathway in Cambodia

Based on Authentic Student Achievement”

Introduction

1. This questionnaire is used to collect data for the research study entitled: “Development of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement”.

2. The questionnaire is prepared to study the desirable states of school teacher career pathway in Cambodia and authentic student achievement.

3. This questionnaire is divided into 3 sections:

Section 1: General information of respondents using check list which includes gender, age, education level, experience and position.

Section 2: The desirable states of school teacher career pathway in Cambodia based on authentic student achievement consists of four parts including 1) Part 1: Sequential list of teacher positions and career pathways of each position, 2) Part 2: Qualification, 3) Part 3: Critical developmental experiences, and 4) Part 4: Competencies.

Section 3: Suggestions and recommendations.

4. The data obtained from the questionnaire is used to analyze the overall aspects of development of school teacher career pathway in Cambodia based on authentic student achievement. The data obtained from respondents shall be used in academic purpose in this research only, not effect on the respondents or their position.

Please kindly answer all the items and return the questionnaire with the attached envelope.

Thank you very much for your participation and cooperation.

Mr. Chantheng Meak

Doctor of Philosophy Student in Educational Management,
Department of Education Policy, Management and Leadership,
Faculty of Education, Chulalongkorn University

QUESTIONNAIRE

The Desirable State of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement.

Section 1: General Information of Respondents

Instruction: Please tick () in the box that is true for you and fill in the space as required:

1. Current status: **School administrator**

1. School Administrator

Teacher

1. Kindergarten Teacher

2. Primary Teacher

3. Lower Secondary Teacher

4. Upper Secondary Teacher

Others (specify)

2. Gender:

Male

Female

3. Age:

Under 30

30-39 years old

40-49 years old

Older than 50 years

4. Highest Educational Qualification:

Lower Than Associate degree

Bachelor degree

Master degree

Doctoral degree

Others (specify)

5. Professional Experience/ working in education sector

0-5 years

6-10 years

11-15 years

16-20 years

More than 20 years

Section 2: The Desirable States of School Teacher Career Pathway in Cambodia

Based on Authentic Student Achievement

Part 1: Sequential List of Teacher Positions and Teacher Career Pathways

1. Do you agree with sequential list of four teacher positions below? Please tick the box for your consideration for **Yes** or **No**

Yes No, If no, notify.....

No	Teacher Position	More comments
1	Kindergarten and Primary Education Teacher	
2	Lower Secondary Education Teacher	
3	Upper Secondary Education Teacher	

2. Do you agree with sequential list of teacher career pathway of each position below? Please tick the box for your consideration for **Yes** or **No**

Yes No, If no, notify.....

No	Career Pathway of Each Position	More comments
1	Novice Teacher	
2	Teacher	
3	Senior teacher	
4	Distinguished Teacher	
5	Master Teacher	

Part 2: Qualification

1. Please tick () the appropriate educational qualification degree for entering career pathway of pre-school and primary school teacher.

Career Pathway of Kindergarten Teacher		Educational Qualification			
		Associate Degree	Bachelor Degree	Master Degree	Doctoral Degree
1	Novice Teacher				
2	Teacher				
3	Senior Teacher				
4	Distinguished Teacher				
5	Master Teacher				

2. Do you think that pre-school and primary school teacher teachers should have teaching license to enter the career pathway? Please tick () the box for your consideration on **Yes** or **No**

Yes

No, notify.....

3. Do you think that pre-school and primary school teacher should have teacher credential letter for entering each career pathway? Please tick () the box for your consideration on **Yes** or **No**

Yes

No, notify.....

Part 3: Critical Developmental Experiences

1. Please tick () the appropriate number of year in teaching experiences for entering each career pathway of pre-school and primary school teacher.

Teacher Career Pathway		0 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

2. Please tick () the appropriate number of years of teacher leader experiences for entering each career pathway of each pre-school and primary school teacher.

Teacher Career Pathway		0 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

3. Please tick () the appropriate number of hours of professional development yearly for entering each career pathway of pre-school and primary school teacher.

Teacher Career Pathway		0 Hour	15 Hours	30 Hours	60 Hours	90 Hours	120 Hours
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

4. Please tick () the appropriate number of research projects done for entering each career pathway of pre-school and primary school teacher.

Teacher Career Pathway		0 Project	2 Project s	4 Project s	6 Project s	8 Project s	More than 120 Projects
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

Part 4: Competencies

Teacher's competencies on authentic student achievement	Please tick <input type="checkbox"/> the competencies required for pre-school and primary teacher of each career pathway				
	Novice teacher	Teacher	Senior teacher	Distinguished teacher	Master teacher
1. Construction of Knowledge					
1.1 Organization and analysis: Need to require students					
(1) To organize complex information in addressing a concept or issue.					
(2) To synthesize complex information in addressing a concept or issue.					
(3) To interpret complex information in addressing a concept or issue.					
(4) To explain complex information in addressing a concept or issue.					
(5) To evaluate complex information in addressing a concept or issue.					
1.2 Consideration of alternatives: Need to require students					
(1) To consider alternative solutions in addressing a concept or issue.					
(2) To consider alternative strategies in addressing a concept or issue.					
(3) To consider alternative perspectives in addressing a concept or issue.					
2. Disciplined Inquiry					
2.1 Disciplinary content and concepts: Ask students to show their understanding rather than mere awareness of core ideas in the subject. Need to require students					

<p>(1) To show their understanding considered central to an academic or professional discipline.</p> <p>(2) To show their ideas or perspectives considered central to an academic or professional discipline.</p> <p>(3) To use their theories considered central to an academic or professional discipline.</p>					
<p>2.2 Disciplinary process: Expect students to demonstrate methods and procedures used by experts in the field. Need to require students</p>					
<p>(1) To use methods of inquiry or research</p>					
<p>(2) To use the communication characteristic of an academic.</p>					
<p>(3) To use the communication characteristic of professional discipline.</p>					
<p>2.3 Elaborated communication: Need to require students</p>					
<p>(1) To present explanations through extended forms of oral, written, and symbolic language.</p>					
<p>(2) To make conclusions through extended forms of oral, written, and symbolic language.</p>					
<p>3. Value Beyond School</p>					
<p>3.1 Problem connected to the world beyond the classroom: Need to require students</p>					
<p>(1) To address a concept that is similar to one they are likely to encounter in life beyond the classroom.</p>					
<p>(2) To address issue that is similar to one they are likely to encounter in life beyond the classroom.</p>					
<p>3.2 Audience Beyond the School: Ask students to direct performances to someone other than the teacher, classroom, and school. Need to require students</p>					

(1) To communicate their knowledge for audience beyond the teacher, classroom, and school.						
(2) To present a product or performance for audience beyond the teacher, classroom, and school.						
(3) To take some action for audience beyond the teacher, classroom, and school.						



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Questionnaire

“Desirable State of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement”

Introduction

1. This questionnaire is used to collect data for the research study entitled: “Development of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement”.

2. The questionnaire is prepared to study the desirable states of school teacher career pathway in Cambodia and authentic student achievement.

3. This questionnaire is divided into 3 sections:

Section 1: General information of respondents using check list which includes gender, age, education level, experience and position.

Section 2: The desirable states of school teacher career pathway in Cambodia based on authentic student achievement consists of four parts including 1) Part 1: Sequential list of teacher positions and career pathways of each position, 2) Part 2: Qualification, 3) Part 3: Critical developmental experiences, and 4) Part 4: Competencies.

Section 3: Suggestions and recommendations.

4. The data obtained from the questionnaire is used to analyze the overall aspects of development of school teacher career pathway in Cambodia based on authentic student achievement. The data obtained from respondents shall be used in academic purpose in this research only, not effect on the respondents or their position.

Please kindly answer all the items and return the questionnaire with the attached envelope.

Thank you very much for your participation and cooperation.

Mr. Chantheng Meak

Doctor of Philosophy Student in Educational Management,
Department of Education Policy, Management and Leadership,
Faculty of Education, Chulalongkorn University

QUESTIONNAIRE

The Desirable State of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement.

Section 1: General Information of Respondents

Instruction: Please tick () in the box that is true for you and fill in the space as required:

1. Current status: School administrator

1. School Administrator

Teacher

1. Kindergarten Teacher

2. Primary Teacher

3. Lower Secondary Teacher

4. Upper Secondary Teacher

Others (specify)

2. Gender:

Male

Female

3. Age:

Under 30

30-39 years old

40-49 years old

Older than 50 years

4. Highest Educational Qualification:

Lower Than Associate degree

Bachelor degree

Master degree

Doctoral degree

Others (specify)

5. Professional Experience/ working in education sector

0-5 years

6-10 years

11-15 years

16-20 years

More than 20 years

Section 2: The Desirable States of School Teacher Career Pathway in Cambodia

Based on Authentic Student Achievement

Part 1: Sequential List of Teacher Positions and Teacher Career Pathways

1. Do you agree with sequential list of four teacher positions below? Please tick () the box for your consideration for **Yes** or **No**

Yes No, If no, notify.....

No	Teacher Position	More comments
1	Kindergarten and Primary Education Teacher	
2	Lower Secondary Education Teacher	
3	Upper Secondary Education Teacher	

2. Do you agree with sequential list of teacher career pathway of each position below? Please tick () the box for your consideration for **Yes** or **No**

Yes No, If no, notify.....

No	Career Pathway of Each Position	More comments
1	Novice Teacher	
2	Teacher	
3	Senior teacher	
4	Distinguished Teacher	
5	Master Teacher	

Part 2: Qualification

1. Please tick (☐) the appropriate educational qualification degree for entering career pathway of lower secondary school teacher.

Career Pathway for lower secondary school Teacher		Educational Qualification			
		Associate Degree	Bachelor Degree	Master Degree	Doctoral Degree
1	Novice Teacher				
2	Teacher				
3	Senior Teacher				
4	Distinguished Teacher				
5	Master Teacher				

2. Do you think that lower secondary school teachers should have teaching license to enter the career pathway? Please tick (☐) the box for your consideration on **Yes** or **No**

Yes No, notify.....

3. Do you think that lower secondary school should have teacher credential letter for entering each career pathway? Please tick (☐) the box for your consideration on **Yes** or **No**

Yes No, notify.....

Part 3: Critical Developmental Experiences

1. Please tick () the appropriate number of year in teaching experiences for entering each career pathway of lower secondary school

Teacher Career Pathway		0 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

2. Please tick () the appropriate number of years of teacher leader experiences for entering each career pathway of lower secondary school.

Teacher Career Pathway		0 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

3. Please tick () the appropriate number of hours of professional development yearly for entering each career pathway of lower secondary school.

Teacher Career Pathway		0 Hour	15 Hours	30 Hours	60 Hours	90 Hours	120 Hours
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

4. Please tick () the appropriate number of research projects done for entering each career pathway of lower secondary school.

Teacher Career Pathway		0 Project	2 Project s	4 Project s	6 Project s	8 Project s	More than 120 Projects
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

Part 4: Competencies

Teacher's competencies on authentic student achievement	Please tick <input type="checkbox"/> the competencies required for lower secondary school of each career pathway				
	Novice teacher	Teacher	Senior teacher	Distinguished teacher	Master teacher
1. Construction of Knowledge					
1.1 Organization and analysis: Need to require students					
(1) To organize complex information in addressing a concept or issue.					
(2) To synthesize complex information in addressing a concept or issue.					
(3) To interpret complex information in addressing a concept or issue.					
(4) To explain complex information in addressing a concept or issue.					
(5) To evaluate complex information in addressing a concept or issue.					
1.2 Consideration of alternatives: Need to require students					
(1) To consider alternative solutions in addressing a concept or issue.					
(2) To consider alternative strategies in addressing a concept or issue.					
(3) To consider alternative perspectives in addressing a concept or issue.					

2. Disciplined Inquiry				
<p>2.1 Disciplinary content and concepts: Ask students to show their understanding rather than mere awareness of core ideas in the subject. Need to require students</p>				
(1) To show their understanding considered central to an academic or professional discipline.				
(2) To show their ideas or perspectives considered central to an academic or professional discipline.				
(3) To use their theories considered central to an academic or professional discipline.				
<p>2.2 Disciplinary process: Expect students to demonstrate methods and procedures used by experts in the field. Need to require students</p>				
(1) To use methods of inquiry or research				
(2) To use the communication characteristic of an academic.				
(3) To use the communication characteristic of professional discipline.				
<p>2.3 Elaborated communication: Need to require students</p>				
(1) To present explanations through extended forms of oral, written, and symbolic language.				

<p>(2) To make conclusions through extended forms of oral, written, and symbolic language.</p>						
<p>3. Value Beyond School</p>						
<p>3.1 Problem connected to the world beyond the classroom: Need to require students</p>						
<p>(1) To address a concept that is similar to one they are likely to encounter in life beyond the classroom.</p>						
<p>(2) To address issue that is similar to one they are likely to encounter in life beyond the classroom.</p>						
<p>3.2 Audience Beyond the School: Ask students to direct performances to someone other than the teacher, classroom, and school. Need to require students</p>						
<p>(1) To communicate their knowledge for audience beyond the teacher, classroom, and school.</p>						
<p>(2) To present a product or performance for audience beyond the teacher, classroom, and school.</p>						
<p>(3) To take some action for audience beyond the teacher, classroom, and school.</p>						



จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

QUESTIONNAIRE

The Desirable State of School Teacher Career Pathway in Cambodia Based on Authentic Student Achievement.

Section 1: General Information of Respondents

Instruction: Please tick () in the box that is true for you and fill in the space as required:

1. Current status: School administrator

1. School Administrator

Teacher

1. Kindergarten Teacher

2. Primary Teacher

3. Lower Secondary Teacher

4. Upper Secondary Teacher

Others (specify)

2. Gender:

Male Female

3. Age:

Under 30 30-39 years old 40-49 years old

Older than 50 years

4. Highest Educational Qualification:

Lower Than Associate degree Bachelor degree

Master degree Doctoral degree

Others (specify)

5. Professional Experience/ working in education sector

0-5 years 6-10 years 11-15 years

16-20 years More than 20 years

Section 2: The Desirable States of School Teacher Career Pathway in Cambodia

Based on Authentic Student Achievement

Part 1: Sequential List of Teacher Positions and Teacher Career Pathways

1. Do you agree with sequential list of four teacher positions below? Please tick the box for your consideration for **Yes** or **No**

Yes No, If no, notify.....

No	Teacher Position	More comments
1	Kindergarten and Primary Education Teacher	
2	Lower Secondary Education Teacher	
3	Upper Secondary Education Teacher	

2. Do you agree with sequential list of teacher career pathway of each position below? Please tick the box for your consideration for **Yes** or **No**

Yes No, If no, notify.....

No	Career Pathway of Each Position	More comments
1	Novice Teacher	
2	Teacher	
3	Senior teacher	
4	Distinguished Teacher	
5	Master Teacher	

Part 2: Qualification

1. Please tick () the appropriate educational qualification degree for entering career pathway of upper secondary school teacher.

Career Pathway for lower secondary school Teacher		Educational Qualification			
		Associate Degree	Bachelor Degree	Master Degree	Doctoral Degree
1	Novice Teacher				
2	Teacher				
3	Senior Teacher				
4	Distinguished Teacher				
5	Master Teacher				

2. Do you think that upper secondary school teachers should have teaching license to enter the career pathway? Please tick () the box for your consideration on **Yes** or **No**

Yes No, notify.....

3. Do you think that upper secondary school should have teacher credential letter for entering each career pathway? Please tick () the box for your consideration on **Yes** or **No**

Yes No, notify.....

Part 3: Critical Developmental Experiences

1. Please tick (☐) the appropriate number of years in teaching experiences for entering each career pathway of upper secondary school

Teacher Career Pathway		0 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

2. Please tick (☐) the appropriate number of years of teacher leader experiences for entering each career pathway of upper secondary school.

Teacher Career Pathway		0 Year	1-5 Years	6-10 Years	11-15 Years	16-20 Years	More than 20 Years
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

3. Please tick () the appropriate number of hours of professional development yearly for entering each career pathway of upper secondary school.

Teacher Career Pathway		0 Hour	15 Hours	30 Hours	60 Hours	90 Hours	120 Hours
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

4. Please tick () the appropriate number of research projects done for entering each career pathway of upper secondary school.

Teacher Career Pathway		0 Project	2 Project s	4 Project s	6 Project s	8 Project s	More than 120 Projects
1	Novice Teacher						
2	Teacher						
3	Senior Teacher						
4	Distinguished Teacher						
5	Master Teacher						

Part 4: Competencies

Teacher's competencies on authentic student achievement	Please tick <input type="checkbox"/> the competencies required for upper secondary school of each career pathway				
	Novice teacher	Teacher	Senior teacher	Distinguished teacher	Master teacher
1. Construction of Knowledge					
1.1 Organization and analysis: Need to require students					
(1) To organize complex information in addressing a concept or issue.					
(2) To synthesize complex information in addressing a concept or issue.					
(3) To interpret complex information in addressing a concept or issue.					
(4) To explain complex information in addressing a concept or issue.					
(5) To evaluate complex information in addressing a concept or issue.					
1.2 Consideration of alternatives: Need to require students					
(1) To consider alternative solutions in addressing a concept or issue.					
(2) To consider alternative strategies in addressing a concept or issue.					
(3) To consider alternative perspectives in addressing a concept or issue.					

2. Disciplined Inquiry				
2.1 <i>Disciplinary content and concepts:</i> Ask students to show their understanding rather than mere awareness of core ideas in the subject. Need to require students				
(1) To show their understanding considered central to an academic or professional discipline.				
(2) To show their ideas or perspectives considered central to an academic or professional discipline.				
(3) To use their theories considered central to an academic or professional discipline.				
2.2 <i>Disciplinary process:</i> Expect students to demonstrate methods and procedures used by experts in the field. Need to require students				
(1) To use methods of inquiry or research				
(2) To use the communication characteristic of an academic.				
(3) To use the communication characteristic of professional discipline.				
2.3 <i>Elaborated communication:</i> Need to require students				
(1) To present explanations through extended forms of oral, written, and symbolic language.				
(2) To make conclusions through extended forms of oral, written, and symbolic language.				

3. Value Beyond School				
3.1 Problem connected to the world beyond the classroom: Need to require students				
(1) To address a concept that is similar to one they are likely to encounter in life beyond the classroom.				
(2) To address issue that is similar to one they are likely to encounter in life beyond the classroom.				
3.2 Audience Beyond the School: Ask students to direct performances to someone other than the teacher, classroom, and school. Need to require students				
(1) To communicate their knowledge for audience beyond the teacher, classroom, and school.				
(2) To present a product or performance for audience beyond the teacher, classroom, and school.				
(3) To take some action for audience beyond the teacher, classroom, and school.				

VITA

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