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Situational analysis on upper secondary school teachers' utilization and allocation in Cambodia

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Abstract

This research focuses on the careful analysis of the situation on teacher allocation and utilization in Upper Secondary Schools (USSs) in Cambodia in order to identify real situations and challenges in terms of currently allocating and utilizing upper secondary school teachers. This study also aimed at enhancing the effectiveness of utilizing and managing USS teachers. To reach these goals, both quantitative and qualitative methods of data collection were employed. Qualitative data were collected using questionnaire and school statistics and then the data were statistically analyzed by using Excel. In addition, qualitative data were collected by using semi-structured interview and then they were analyzed to classify them based on similar ideas and responses and finally each category was described and explained. This research study revealed the following results: (1) the present classification and utilization of upper secondary school teachers in Cambodia was not efficient (i.e. there was a lack of teachers with Bachelor + 1 in the system), (2) student-class ratio was not complied with the norm of the Ministry of education Youth and Sport (MoEYS), (3) the operation and practice of teaching hours per week was not consistent with the teaching norm prescribed by MoEYS, and (4) the wrong utilization of teachers in terms of their specialization and teaching qualification was being implemented in secondary education in Cambodia in order to solve the problem of the shortage of teachers and this so doing led to the limited quality education.

Keywords: teacher´s utilization, teacher´s allocation, teacher-classroom norm, student-classroom norm, teaching hour requirement, teaching hour norm, quality education

1. Introduction

Education is the foundation leading to the career choice and the improvement of their work performance as well as a vehicle to higher education. The strengthening of the foundation of education and the creation of favorable conditions for youth to contribute to developing economic society based on

knowledge is each country´s goals. A country can prosper depending on good quality of human resources who possess knowledge skills attitudes and good health (Curriculum framework for General and Technical Education, MoEYS, 2016). In this sense, teachers as human resource producers play very important roles for serving the country in all fields and they are also the engineers of souls who the government counts on in terms of teaching and educating younger generations and teachers are priceless pillars and backbones of the family and nation as a whole. The future of the nation is solely dependent on teachers. A country can prosper in all areas or not relying on human resources who have been produced by teachers. If an engineer undertakes their duty badly and carelessly, it destroys a building or even a family, but if a teacher lacks knowledge, professional ethics and performs his or her task unsuccessfully; provides inqualitative education; produces unqualified human resources, it badly destroys and impacts the whole society especially younger generations who are the successors of the country (Sub-degree on Teachers´ Professional Ethics, MoEYS, 2018).

Based on teachers´ advantages and indispensible responsibilities, education goals 2030 and the Incheon Declaration for Education 2015-2030, have concentrated on quality education

Based on the demanding quality and roles of teachers, education goals 2030 and education declaration made in Incheon city, South Korea for 2015-2030 education, it focuses on quality education especially quality teachers and quality school principals.

Likewise for Cambodia´s context, in order to ensure that Cambodia can successfully compete with other countries in terms of global economy, quality education and relevance of education, they are demanding conditions for present situations. To achieve these goals, teachers are very important actors or actresses because their profession is the stepping stone for pursuing other knowledge and skills. If they are no qualified teachers and if they do not pay attention to their teaching, Cambodia cannot reach her national goals in providing learners with quality education. Teachers who are not qualified with good pedagogy in teaching are contributive factors in the realization of education policies in Cambodia. The education policies are: (1) ensuring quality education, equity, inclusion and promoting life-long education (2) ensuring the efficiency of all education leaders and officials for decentralization (ESP 2014-2018). More importantly, if there are no teachers, there is no life-long learning and no knowledgeable and prosperous society. To reach the goals, teachers´ utilization, allocation and management must be effective because this is a key to the realization of the above mentioned national goals. Nowadays, MoeYS has made some significant reforms so as to ensure and strengthen the quality of

education which can keep up with regional and global education trends especially the 21st century education. A lot of legal documents especially teachers´ policies action plan on teachers´ policies and teachers´ career pathway have been formulated in the sense of facilitating effective teachers´ selection, teacher training, teachers´ allocation and utilization and teacher management because the effectiveness of teacher management has been reflected through teacher selection, teacher training, teacher motivation, teacher deployment, teacher retention, teacher in-transfer and out-transfer. In this sense, the needs to use teachers effectively are necessary for quality education and they are concerned with considerable factors: input and the reduction of student-class norm and student-teacher norm. According to OECD (2005), it revealed that teachers are the main work force in comparison with other fields and most current expenditure of education field is spent on teachers´ salary. Based on the same source of information, it showed that to attract graduates to apply for competitive positions as teachers is to have teachers´ career pathway or the society needs to highly value teachers. The expansion of supportive resources from various sources as well as the selection of qualified human resources to work as teachers is feasible through the increase in incentives, support budget especially for those who volunteer to teach in remote and disadvantaged areas since teachers are the foundations in terms of teaching process and quality of teaching is a factor to determine quality education. This means that teachers are the main factor influencing the quality of education. Teachers are the center of teaching process and they impart the quality of learning and students´ learning outcomes. The effective teacher management is essential to successful achievement of education management system. The effectiveness of public expenditure is also important as stated in the reports of most countries in the world saying that the actual expenditure figure on teachers´ salary consume two third of the national budget on education sector (IIEP, 2015). To effectively allocate and utilize upper secondary school teachers, education officers especially school principals and administrators have to prepare their school long-term and medium-term strategic plans. Education diagnosis on teacher requirements, quota, utilization, and efficiency of teacher allocation is a key indicator to determine the levels of human resource utilization and workforce attrition is also a necessary factor.

Unfortunately, for Cambodia under three years, eight months and twenty days regime which was governed by Khmer Rouge, 80% of human resources especially teachers and doctors were killed because this regime regarded teachers and doctors as the achievements of capitalism and they were targeted for execution. The whole education system was closed and all superstructures

were turned into prisons and warehouses. After the liberation on 7 January 1979, in response to the reopening of education system and massive enrolment, a lot of were constructed then and classes were opened for pupils and students. A lot of teachers were selected and trained using different training formulas. At that time, there was a saying stated that "those who know more teach those who know less and those who know less, teach those who know nothing." This slogan was used throughout the country. At the meantime, the mobilization of human resources who survived the Khmer Rogue regime were employed in the education system and this doing was carried out gradually. In this regards, the deployment and allocation of teachers at that time did not thoroughly follow the norm such as student-class ratio, teacher-class ratio and teacher's qualifications. In so doing, it has resulted in a lot of problems these days. The present challenges of teacher management in Cambodia are: the increase in school-aged children, school expansion, the replacement of teachers from outside the system, the selection of qualified teachers, the selection and training of teachers, teacher deployment, working conditions, management, social recognition, and motivation especially schools in remote and disadvantaged areas. The quantity and quality of education is an important foundation at secondary education level. If we examine some indicators such as student-teacher ratio or student-class ratio, overall it seems there are no problems all over the country because based on the statistics from all education levels, there are approximately 3,500,000 students and pupils. There are more than 100,000 teachers (education indicator 2016-2017) but if we analyze the indicator of the utilization of secondary school teachers based on the standard (Bachelor + 1), the number of teachers with bachelor degree plus one is still limited (NIE-IIEP, 2013). On the one hand, if we examine the indicator of teacher utilization rate or teacher co-efficiency indicator (R2), there is still a big gap. Based on the report of secondary school teachers' utilization, still there is high percentage. Pertaining to teacher supply and requirements which are proposed by schools are not transparent to respond to the real needs since there is some exaggeration or the reduction of the proposed data and supply which lead to the shortage of specialized teachers (NIE-IIEP, 2013). Likewise, the methods of calculating teacher requirements are not agreed upon and the formulas of calculation are not clear. On the other hand, the improper demands and supply of teachers bring about the lack of teaching staff or surplus of teachers. The subjects which lack teachers face the same problem (vacant posts) and the subjects which surplus teachers remain the same. The shortage of information technology system, school maps, attrition rate, the rate of teachers returning to their work places, pension rate, rate of the increase in school-

aged population and improper regulations and guidelines cause surplus and shortage of teachers in certain areas. Medium and long-term planning and quantitative planning can impact the needs of education policy program and education for sustainable development. Prediction of teachers using simulation and projection is a key to sound solutions in order to identify the long-term needs of teachers. Teacher professional ethics, competencies, managers who haven´t received training in human resource management skills, teacher´s absenteeism, lack of resources, overlapped roles and responsibilities, unclear assessment, and controversial decision-making lead to poor teacher management. For newly-graduated teachers, they choose only jobs available in the cities and urban areas. The change of teachers´ workplace to accompany their spouse in time with their limited living conditions, motivation, and low salary is also another challenge of poor teacher management. Also, female teachers generally don´t choose their teaching posts in rural areas. This is also another challenge. Meanwhile, MoEYS has offered continual professional development workshops to build up education staff´s capacity at secondary level throughout the country. In spite of the professional development workshops, their capacity to undertake their tasks is still limited and does not meet the requirements of MoEYS in time with the education reform. This results in poor teacher allocation and utilization and this is also a cause of decrease in quality education. Up to now, there is no study to reveal the conditions of teachers´ allocation and utilization. That´s why this research exclusively focuses on teacher´s allocation and utilization in the context of upper secondary schools in Cambodia with the purpose of identifying realistic situations and various challenges of teacher management and of recommending feasible solutions to policy makers of the MoEYS to reduce these challenges.

2. Methodology

To conduct this study, both quantitative and qualitative research were employed. Quantitative data were collected through a questionnaire and school´s statistics. For qualitative data, they were collected through a semi-structured interview. The sample was 40 high schools approximately 10 percent representing for the whole kingdom. Schools are selected by using random sampling from 5 selected provinces as big, medium and small provinces (divided by Department of Planning in 2009). For the big ones, 20 schools were selected from Kompong Cham and Kompong Thom provinces. For medium ones, 14 schools were selected from Kompong chhnang and Kompot provinces. For the small one, 6 schools were from Phreah Vihear province. The sample selections were the representatives of the whole country because the number of schools were selected by categories.

The questionnaire was divided into 2 parts for principals to fill in. The first part consisted of school's statistics and second part used a semi-structured interview. The interview guide included statistics such as number of students by grades, number of teachers, teachers by subjects, qualified teachers (Bachelor +1), number of teaching hours by grades, teaching norm, number of subjects by grades. Within essential information, they would be able to understand current situations and challenges in teacher utilization in Cambodian high schools. For interview guide, open-ended questions were used to find out specific strategies for each solution, especially for teacher shortage and teacher surplus by subjects. For quantitative data, graphs, tables, and averages were used to analyze data by using Excel. For qualitative data, analysis data were studied by categories, listed topics based on opinions, the meaning similarities of sentences, and explanations as schemes. Making descriptions and drawing conclusions were also used based on merge schemes.

3. Results

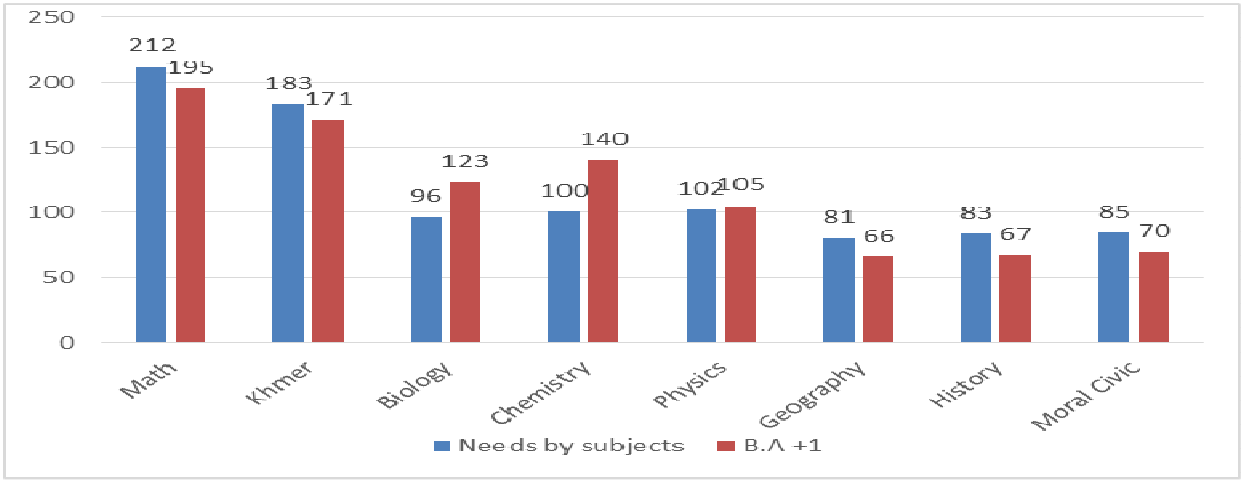
The results of research as shown in the first table 1 present the total number of students in the selected sample from 5 provinces is 29782. According to student/class ratio is 40 by norm, so number of classes is 745 (29782 divided by 40). By norm, student contact hours is 32 for each grade in high schools, so total number of teaching hours is 23840 (745 multiplied by 32) in which actual needs are 1490 qualified teachers Bachelor+1 (23840 divided by 16) for all subjects. By norm each teacher needs to teach 16 hours per week. But in the real practice, number of classes is reduced to 669 less than 76 by norm (754 minus 669). This indicates that, the use of student/class ratio is not appropriate with the norm, based on sample. As selected sample, number of qualified teachers (Bachelor+1) who teaches in high schools is only 1170, less than needed 320 (1489 minus 1170). It means that teacher shortage is 320 to be compared with norm and less than in the real practice 168 (669 multiplied by 32 and divided by 16). For solutions regarding problems above, each high school uses their own strategies such as: (1) Increase student/class ratio more than 40 if compared with norm, (2) Use teachers who are inappropriate for their levels or/and specialized subjects, and use additional teaching hours for specialized subjects.

Table 1. Statistics on number of students, grades, teaching hours, and number of teachers by norm, and practices

Number	Norm	Practice
Students	29782	
Classes	745	669
Teaching hours	23536	20977
Teachers	1475	1301
Qualified teachers (Bachelor+1)	1170	

But if it is closely looked, even though there is a shortage of qualified teachers, it is not for all specialized subjects because if we calculate the total number of teachers with norm and the number of teachers in real practices, some subjects is balanced, some are in shortage, and others are of surplus. As shown in graph 1, number of teachers in mathematics in sample is 212 but number of qualified teachers (Bacher+1) in mathematics is only 195. The same condition for others subjects such as Khmer, Geography, History, and Moral Civic also face teacher shortage respectively.

Graph 1: qualified teachers (Bachelor+1) by subjects with norm and real needs



On the other hand, for Physic, Chemistry, and Biology, there is a surplus of qualified teachers (Bachelor+1). The needs are 102, 100, and 96 respectively. Meanwhile qualified teachers (Bachelor+1) is 105, 140, and 123 respectively. This shown the supply side and allocation for targeted schools in selected sample is ineffective; especially, for Chemistry and Biology there are a surplus of qualified teachers (Bachelor+1) in the real practice. This research study examined deeply on variables related to provinces and schools and results will come up with:

- Situations on teacher utilization in high schools for the first province:

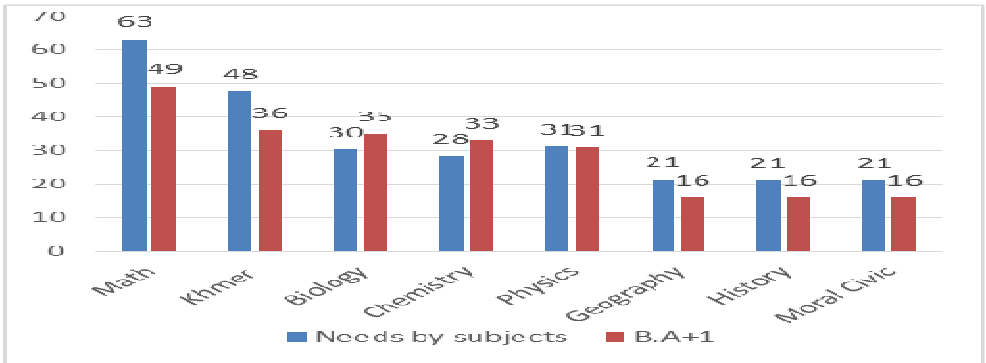
For the first province, sample selection is 12 schools with 8425 students. By norm, it equals 211 classes within 6752 hours of teaching provision. The needs of qualified teachers (Bachelor+1) for all subjects are 422. But in the real practice, this province has only 282 qualified teachers, with the remains of 142 teacher shortage for 12 schools. This means that teacher allocation for the first province is ineffective. For solutions, each school in first province raised strategies such as: increasing student/class ratio above the norm, to reduce number of classes from 211 to 188, reduce teaching hours from 6752 to 5967 a week, and decrease teaching staff from 422 to 366. Even though strategies have been applied, the shortage of for qualified teacher (Bachelor+1) still remains 81 (363 minus 282). So schools may use below the qualified teachers to fill the gap.

Table 2. Number of students, classes, hours, and teachers by norm and real practice (Province 1)

Number	By norm	Practice
Students	8425	
Classes	211	188
Teaching hours	6752	5967
Teachers	422	363
Qualified teachers (Bachelor+1)	282	

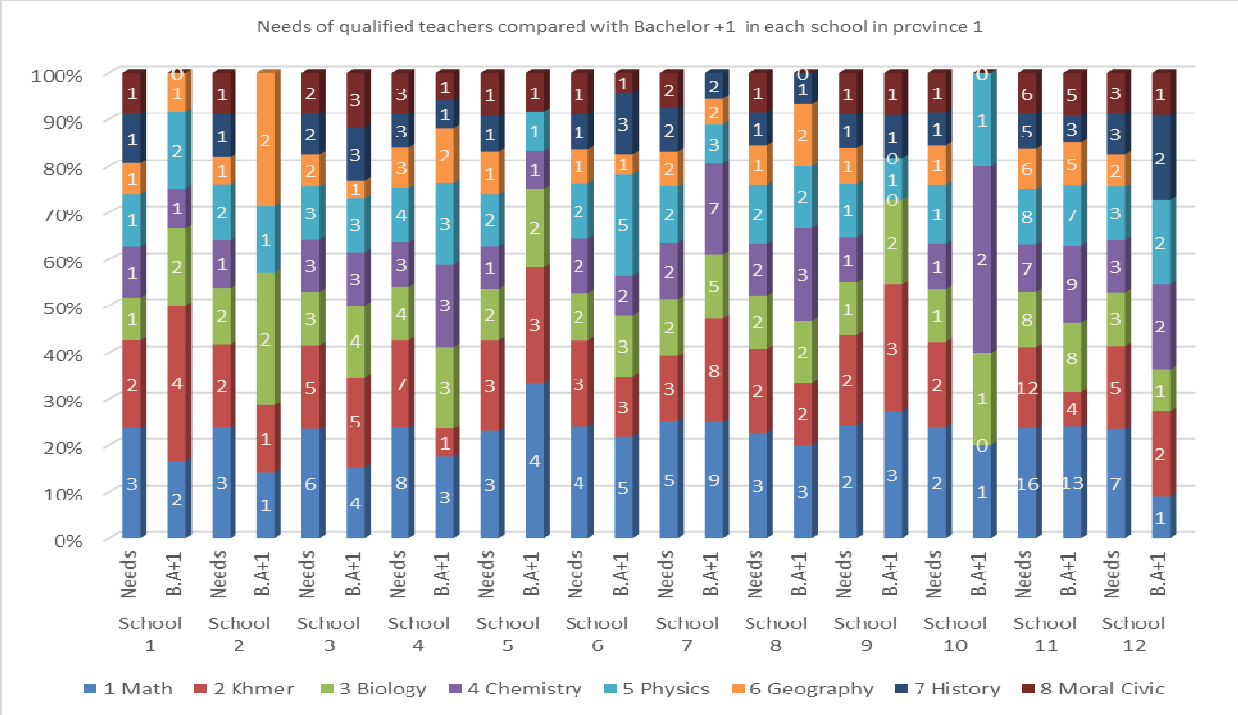
Graph 2 showed the teacher needs by norm and qualified teachers (Bacher+1) on 8 specialized subjects including Maths, Khmer, Physic, Chemistry, Biology, Geography, History, and Moral Civic for province 1. The graph presented the surplus of qualified teachers (Bachelor+1) in Chemistry and Biology within norm. In contrast, Maths, Khmer, Geography, History, and Moral Civic, the number of qualified teachers was less than the actual needs. This showed that teacher allocation and teacher utilization in province 1 is ineffective and limited.

Graph 2. Qualified teachers (Bachelor+1) for each subject by norm and real needs for province 1



This study is also examined on variable related to each school about number of teachers within 8 specialized subjects in order to compare with number of qualified teachers (Bachelor+1) and the number of teachers needed by norm. As shown in the results, some schools had surplus of teachers by subjects and the others had shortage of teachers by subjects in terms of qualified teachers, and a few of them are equivalence. For example, for Khmer language in the first school, two teachers were needed but 4 qualified teachers remained in school. For seventh school, the need of teachers is 3, but 8 teachers remained (in stock), and the ninth school, the need was 2, but 3 teachers also remained. On the other hand, for the same subject (Khmer language) the second school needed 2 teachers, but only 1 teacher remained in school. For the fourth school, the real needs were 7 teachers, but only 1 teacher remained in school. For the tenth school, the needs of teachers were 2, but 0 qualified teacher (Bachelor+1) remained in school for this subject. For the eleventh school, the needs of teachers were 12 teachers, but only 4 teachers remained in school, and for the twelfth school, the needs were 5, but only 2 teachers remained in school as shown in graph 3. The results showed ineffective teacher allocation to schools in this province. This factor may affect ineffective use of teaching staff for school management level, and it may affect the quality of education.

Graph 3: requirements of qualified teachers (bachelor +1) by subject in each secondary school of province1



- The Situation of USST´s Utilization in Province 2:

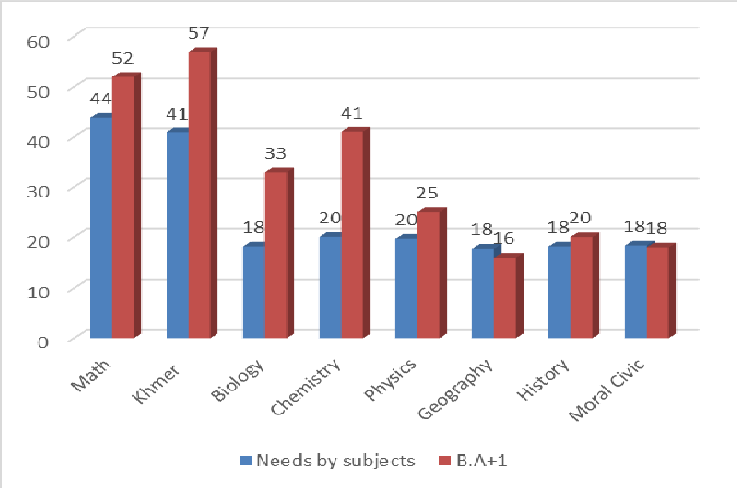
In province 2, there were eight high schools which had been chosen with 6220 of total students, 156 of the teacher-classroom norm, 4992 of teaching-hours norm per week, and 312 of the teacher-class norm. According the tactical statistics, there were 313 of higher teachers in this province, one teacher was over the norm is represented. This result showed that the teachers with higher quality (Bachelor+1) in province 2 respected to the norm. But if we examined the three variables of the number of teaching-classroom, teaching-hours, and number of teachers with higher (Bec+1), the utilization of teachers showed that only 138 teaching-classroom and 18 fewer than teaching-class norm, 4416 teaching hours, 575 of less than the teaching-hours norm. The total of 272 teachers with higher quality (Bachelor+1) were teaching in province 2. The student-class ratio was 41 over the teachers-norm. This trend showed that even though the number of teachers with higher quality (Bachelor+1) was enough, the teaching-classroom norm was over the standard. Therefore, the teacher´s utilization was not efficiency yet.

Table 3. the statistics of teaching-classroom norm, teaching-hours norm, and totally by norm in province 2

Number	Norm	Tactical statistics
Students	6220	
Classes	156	138
Hours	4992	4416
Teacher	312	272
Teacher with higher quality (Bachelor+1)	313	

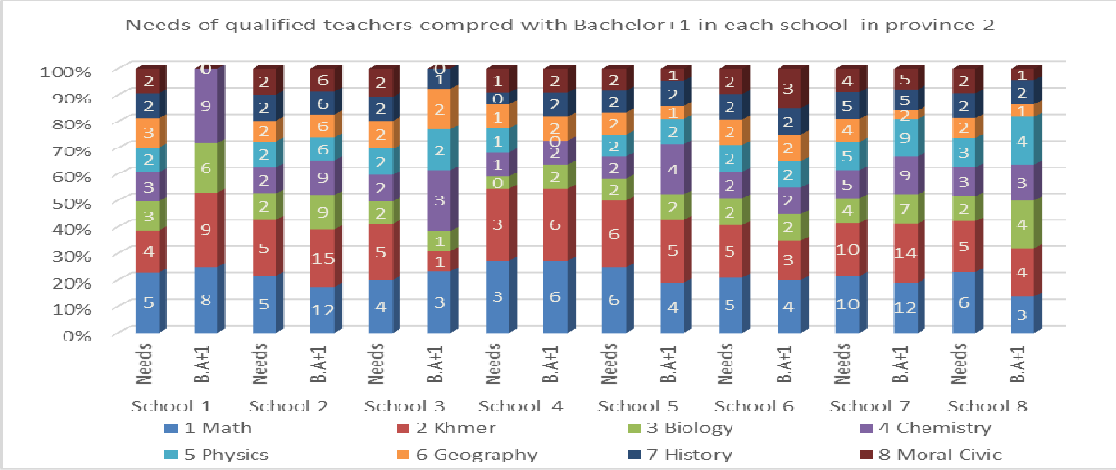
In the figure 4, it described the teacher norm and number of teachers with higher quality (Bachelor+1) from eight subjects including Mathematics, Khmer Literature, Physics, Chemistry, Biology, Geography, History, and Morality. This figure also showed that the teachers with higher quality (Bachelor+1) norm was over needed in Mathematics, Khmer Literature, Physics, Chemistry, and Biology; while the Moral Civic was consistent with the norm. Overall, only Geography is less than the norm. This situation showed that the USST´s utilization was aligned with the norm in this province 2.

Figure 4. the situation and norm of teachers with higher quality (Bachelor+1) through eight subjects in province 2



This research was deeply studied in each of eight upper secondary schools about number of teachers in eight main subjects the same as in province 1. The result showed that some schools were of surplus, some schools were of shortage; while some schools had enough teachers with higher quality (Bachelor +1). For instance the mathematics teachers (Bachelor +1) were 5 as prescribed by the norm, but there were 8 teachers in one class in school 1. The norm was 5. There were 12 teachers per class in school 2; while the norm was 3. In school 4, there were 6 teachers per class. There norm was 10. For school 7, there were 12 teachers, but the norm was 10. In contrast, in the order of schools 3, 5, 6 and 8, the norm are 4, 6, 5, and 6 respectively, but the qualified teachers (Bachelor+1) per class were 3, 4, 4, 3 only (Figure 5). This result described that even though teachers with higher quality (Bachelor+1) were provided by MoEYS to this province 2 was enough, but it showed the ineffectiveness each schools' teacher utilization provided by DoEYS.

Figure 5: the needs of teachers with higher quality (Bec+1) by subjects in each school in province 2.



- The Situation of USST´s Utilization in Province 3:

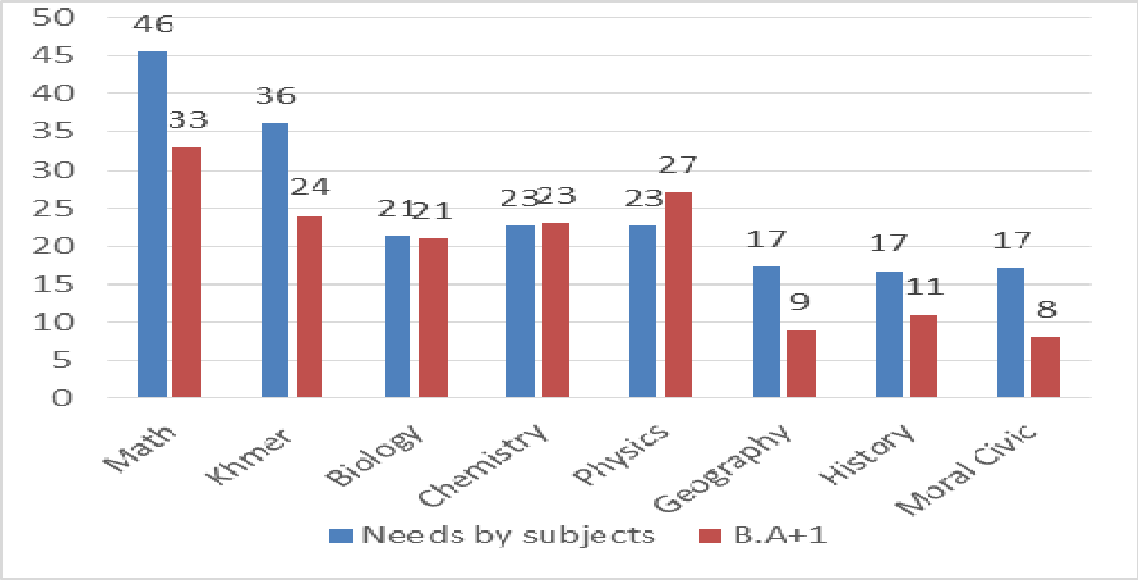
The samples in province 3 has been recorded from 7 upper secondary schools, 6564 of total students, 164 teaching-classroom norm, 5248 of teaching-hours norm per week, and 328 of teachers with higher quality (Bachelor + 1) norm (table 4). But for the real situation, there are only 200 of teachers with higher quality (Bachelor + 1), therefore 128 teachers were lacked throughout the province. On the other hand, there are 146 of tactical teaching-classroom, 18 teachers teach less than teaching-classroom norm, 4560 of tactical teaching hours per week, 688 are less than the teaching hour norm, while 285 of tactical teachers with higher quality (Bachelor +1), 85 teachers teach more than teacher-classroom norm (Table 4). This means that the real USST´s utilization in this province 3 is the same as province 1 and province 2 where they increased the number of student-class ratio that is contradictory to the norm provided by MoEYS. Whereas, 85 of teachers who have low quality than Bachelor +1 degree are utilized in the province.

Table 4. the statistics of students, teaching classroom, teaching hours, and teacher classroom by norm and actual utilization in province 3.

Number	Norm	Tactical utilization
Students	6564	
Class	164	146
Hours	5248	4560
Teachers	328	285
Teacher with higher quality (Bec+1)	200	

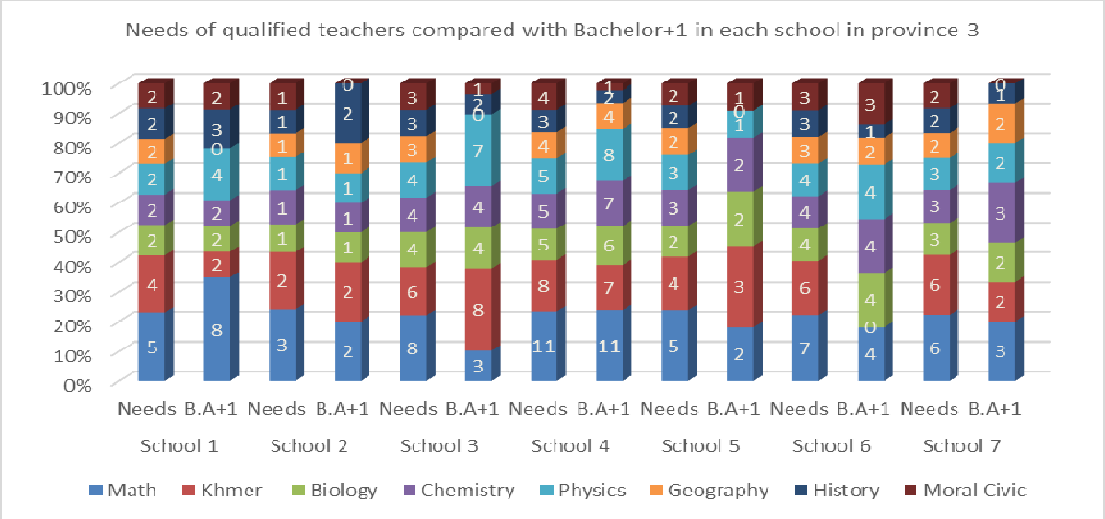
Figure 6 showed the needs of teachers with higher quality (Bachelor+1) by norm and real teachers-classroom ratio of eight disciplines including Mathematics, Khmer literature, Physics, Chemistry, Biology, Geography, History, and Morality. This figure showed that only Physics that had the surplus of the teachers with higher quality (Bachelor+1), while other seven subjects lacked teachers. This result indicated that USST´s utilization which provided by DoEYS in this province is still a problem.

Figure 6. the teachers with higher quality (Bachelor + 1) by subjects by norm and real utilization in province 3



If closed looked at each schools on number of teachers in the eight subjects of province 3 pointed out that the DoEYS´s assignment on teachers with higher quality (Bachelor +1) is ineffective because schools lacked the teachers in some subjects; while some schools had surplus of teachers. For example Mathematics, five teachers are needed in each school 1 and school 2, but there are eight of mathematics teachers (Bachelor +1) in each school, while in order 8, 5, 7, and 6 teachers (Bachelor +1) are needed in schools 3, 4, 5, 6 and school 7 respectively; only 2, 3, 2, 4, and 3 of teachers (Bachelor +1) are real teaching hours. This trend in province 3 is also a bit similarity to other seven subjects which showed that USST´s utilization of DoEYS´s provision is not yet efficient in any subjects throughout the province.

Figure 7: the needs of teachers with higher quality (Bachelor + 1) by subjects of the seven schools in province 3.



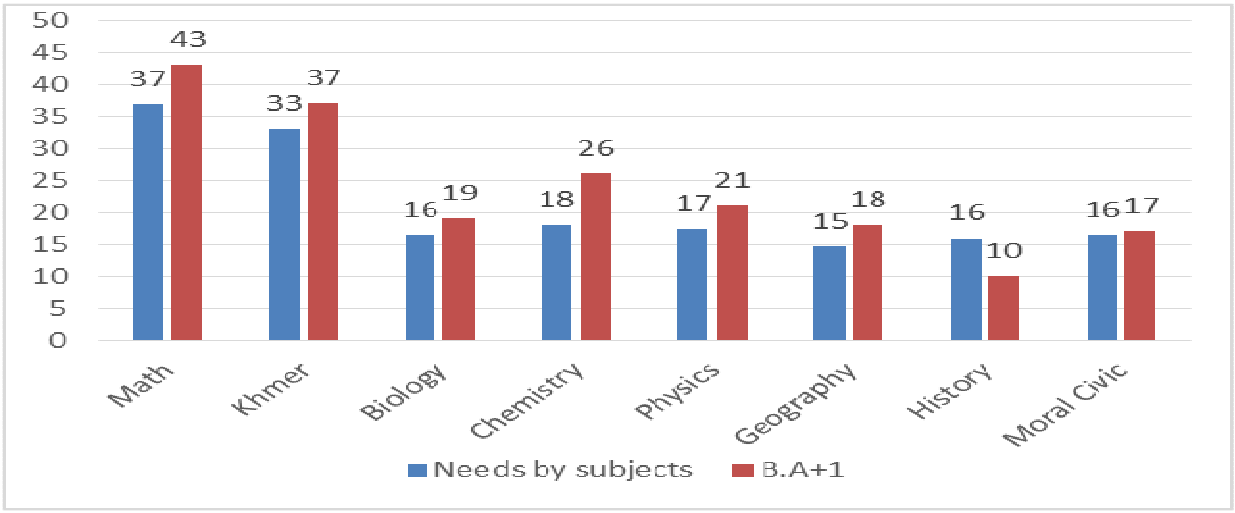
- The status of the use of upper secondary school teachers in province 4:

The sample selected in the fourth province consisted of six high schools, with a total of 5338 students, according to the standard, 134 classes equal to 4288 hours per week, using 268 higher education teachers. (Bachelor +1). According to the actual situation, the province has a total of 119 classes with less than 15 classifications, with an hourly average of 3596 hours less than 692 hours of usage and 227 higher education teachers (Bachelor +1) with less than 41 standards. The results indicate that the use of student benchmarking is beyond the regulatory norm, reducing the number of classrooms and hours per week. Overall, it is appropriate to use the teacher because the teacher is actually teaching 225 versus 227 higher education teachers, as shown in Table 5. To find out more about the effectiveness of the use of higher education teachers in the province, the researchers examined the number of higher education teachers in eight subjects, as in the case of the three provinces, and found the results as shown in Figure 8.

Table 5: Student-classroom ratio according to the norm and in reality in province 4

Number	Norms	Reality
Students	5338	
Classes	134	119
Hours	4288	3596
Teachers	268	225
Higher education teacher (Bachelor + 1)	227	

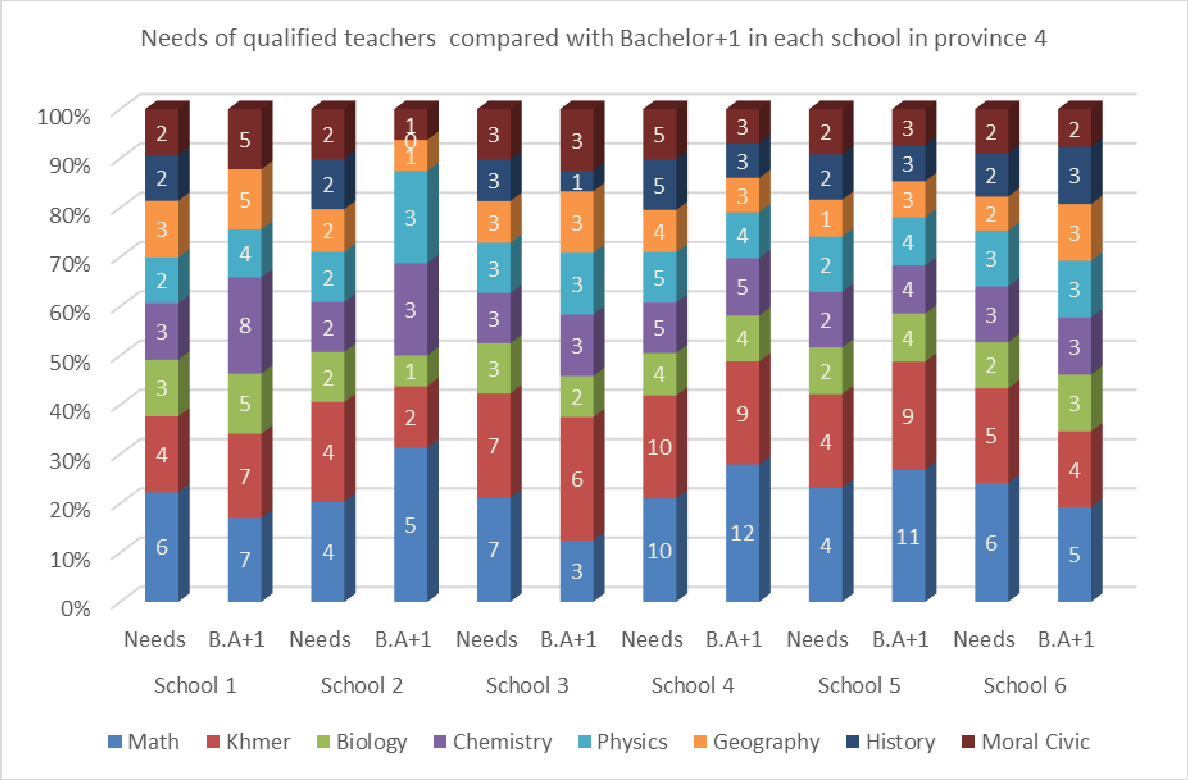
Figure 8. Higher education teachers of each subject in accordance with the norm and in practice in province 4.



This graph shows that only the subject of history is less than the requirement of higher education teachers; besides, there are more than enough demands. Mathematics, Khmer literature, Physics, Chemistry, Biology, Geography and Moral Civics have different requirements such as 37, 33, 16, 18, 17, 15, and 16 respectively, but higher education teachers in each subject are 43, 37, 19, 26, 21, 18, and 17 respectively. In contrast, the requirements of history subject are 16 higher education teachers, but there are only 10. This shows that the effectiveness of teacher division and utilization in this fourth province, even if the higher education teachers are sufficient, are still very much problematic because these six high schools have a high number of teachers, so it is clear that other high schools in the province and not selected as sampling in the study will experience a shortage. Here, especially specialists in the above seven specialized subjects.

For a deeper understanding, the researchers also compared the number of eight specialized teachers each of which corresponds to the actual needs and found in the 9th graph.

Graph 9: Qualified teachers' qualifications (bachelor´s degree) in each and every secondary school in province 4



According to the results shown in Figure 9, as well as in the case of the three provinces, the ratio of higher education teachers at the upper secondary level in each of the fourth province is not accurate yet; some of the secondary schools lack

teachers, but some secondary schools have more than the same specialist teachers. For example, mathematics in schools 1, 2, 4, and 5 have the number of higher education teachers exceeded actual needs. In contrast, the third and sixth-schools lacked the specialists. Khmer literature in schools 1 and 5 has a high number of higher education teachers; while the second, third, fourth and sixth schools lacked many specialized teachers.

- The status of the use of secondary school teachers in province 5

Samples selected in 5th out of 5 provinces consisting of eight high schools, with a total of 3235 students, according to the standard, 81 classes equal to 2592 hours per week, using 162 higher education teachers. However, according to the provincial situation, there are 78 classes less than the 3-grade standard course hours, 2496 hours less than 2496 hours in a week, using 96-hour norms, and 150 less than 12 teachers. The actual use of the practical teachers in the province is up to 156, above the number of 6 higher education teachers. The results showed that the use of student benchmarking is more than the norm set by the law, resulting in reduced number of classrooms and the number of hours to be taught and learned. The use of teachers is still limited by the use of teachers with a degree of qualification lower than the bachelor´s degree + 1.

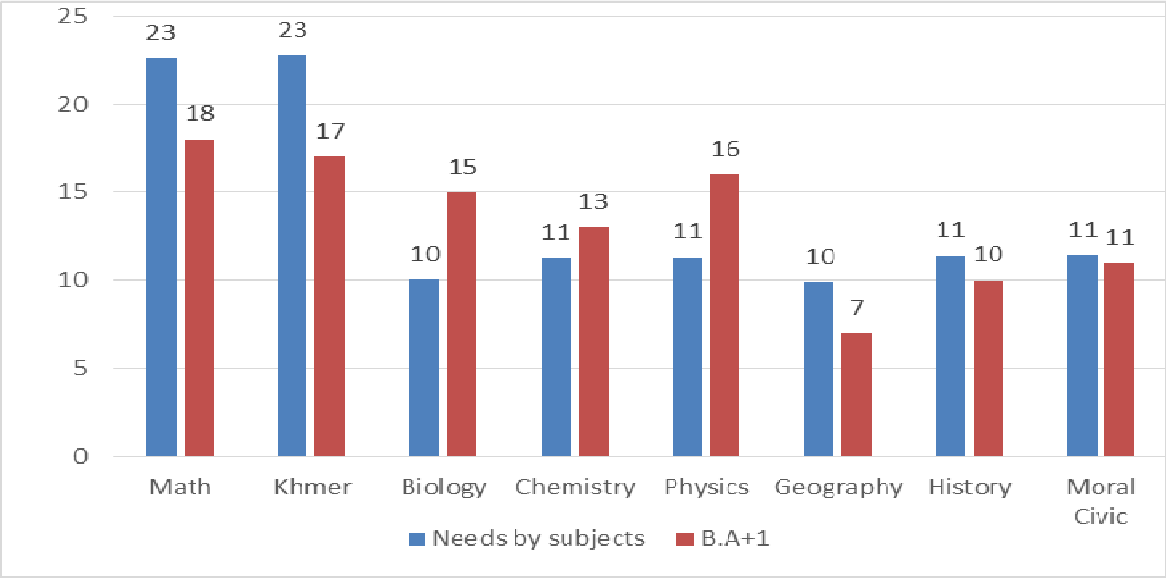
Table 6: Student statistics, classes, hours and total teachers according to the norm in province 5

Number	Norms	Reality
Students	3235	
Classes	81	78
Hours	2592	2496
Teachers	162	156
Higher education teacher (Bachelor + 1)	150	

Figure 10 below shows the needs of the teachers and the number of teachers with a bachelor's degree +1 on 8 subjects, including Mathematics, Khmer literature, Physics, Chemistry, Biology, Geography, History, and Moral Civic for the 5th province, as in the case of provinces 1, 2, 3, and 4 respectively. Through this graph shows that science subjects, including physics, chemistry and biology teachers with higher education (Bachelor + 1) exceeds the standard requirements, Physics teachers were demanded 11 but up to 16, Chemistry teacher´s requirement was 11 but up to 13, and Biology teachers were demanded 10 but up to 15. On the other hand, mathematics, Khmer literature, Geography and History teachers with higher education (Bachelor +1)

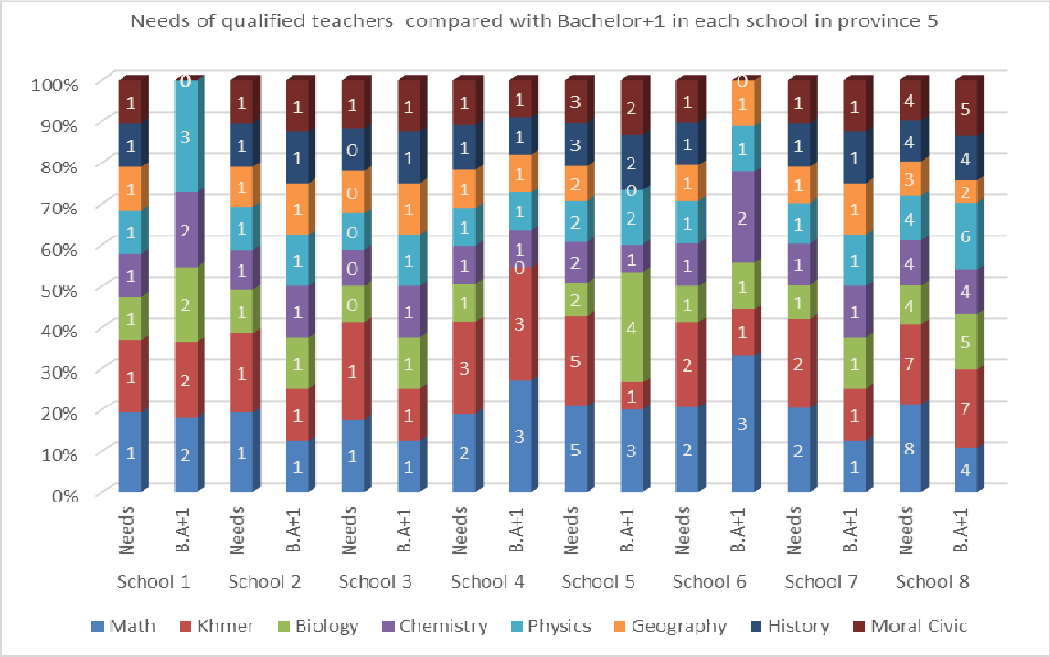
were less than the demand, namely 23 mathematics teachers were needed but the actual were 18, Khmer literature required 23 teachers but in reality 17, Geography requires 11 but in real practice 7, and History needs 11 teachers but the real needs were 10, except for Moral citizens subjects that were equal to the required number. This shows that the effectiveness of allocation and utilization of teachers in this fifth province is not yet appropriate.

Graph 10. The higher education teachers (Bachelor + 1) of each subject in accordance with the norm and in practice in province 5



As in the case of provinces 1, 2, 3, 4, the study examined the ratio of teachers in eight subjects, each high school in the 5th province, the result is shown in Figure 11. Graph 11: Mathematics at schools 1, 4, 6 is exceeded. Second and third schools have the required number of requirements. The fifth, seventh and eighth schools are less than the demands, especially in the 8th school, with a requirement of eight, but only four higher education teachers (Bachelor +1)). For Khmer literature in first school, there is more than one requirement, while fifth school needs 5 teachers, but there is one teacher, sixth school needs 2, but there is only one, and seventh school needs 2 teachers, but there is only 1 teacher. Besides, there are a full number of teachers. This shows that the efficiency of the utilization and allocation of upper secondary school teachers to each school in this fifth province is not good.

Graph 10: Requirements of higher education teacher (Bachelor + 1) by subjects and each high schools in Province 5



4. Conclusions and suggestions

Overall, calculating teachers' needs and limiting the number of quota allocation and the use of high school teachers in Cambodia is still limited. Methods used by the principals are traditional such as calculating the coefficients of the ratio of the student's gross enrollment, the grade or the actual needs, without a specific formula or formulas. This practice may be unclear, a loss of resources, a loss of employment, the national budget cannot be provided for equitable and quality education and cannot make sustainable development. Systematic calculations, principles or formulas on the basis of specific benefits to the development of sustainable education need to be employed. In this situation, the use of the correct calculation methods will provide justice and transparency in setting quotas, classifying teachers and employing teachers in accordance with the practical needs. Through this strong foundation, it has helped to develop on other areas such as school building, renovation, classroom expansion, classroom materials, and other expenses. Equity in providing educational services will help to improve the quality of education by allocating and using talented teachers to disadvantaged small-scale schools. In the case of a city with more than wealthy teachers, rural schools lacked teachers or secondary school teachers, so the study results were hard to compete between the two schools.

As a cross-sectional recommendation, there are some challenges to be addressed, such as: (1) the excess of teachers, especially in urban areas and lack of teachers in rural schools. (2) Classrooms are

organized according to the standard but do not have qualified teachers with bachelor´s degrees. (3) Classrooms are not standardized (standardized) and are characterized by lack of teachers and lack of classrooms; and (4) newly opened high school, with low enrollment and school principal (Grade 10, 11 and 12). Therefore, each class has fewer students or fewer teaching hours than students. This makes the use of teachers less effective in this context.

In order to improve the efficiency of the allocation and utilization of teachers, there must be strategic planning to manage the educational resources of the system through the use of a teacher's method of calculation, such as the formulation and use of certain formulas. The proper classification and utilization of teachers will value the institution and the national budget.

The training of principals on the management and allocation and utilization of educational resources is necessary because the principals are direct and permanent practitioners. The above-mentioned training will promote the implementation of policies, management of teachers, empowerment, responsiveness and consistency between internal inspection and external inspection.

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The personal excellence competence of Cambodian school head of high school compare to the competency standards of ASEAN school heads

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Abstract

The Personal Excellence competence for ASEAN school head has been intensified in recent years, due to a range of competency standards for school head from a changing policy environment. This study is comparing the levels of personal excellence competence for school head of high schools in Cambodia to the competency standards for ASEAN school heads. Through the review of the competency standards of ASEAN school heads, the personal excellence competence has three competencies, including managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development. Regarding this, researchers collected data from 17 school heads, 33 deputy school heads, 40 non-teaching staff, and 323 teachers, from 17 high schools and 4 provinces in Cambodia, through the completion of 1-5 Likert scale questionnaire and the focus group discussion. All collected data were analyzed with the independent t-test and one way ANOVA of IBM SPSS Statistics 21. This study indicated that the levels of the three competencies of personal excellence competence of Cambodian school head are lower than the competency standards for ASEAN school heads with the mean score of 4.05, 4.08, and 3.77: 5.00. This study will provide the critical feedback to the Cambodian school heads, non-teaching staff, teachers, and stakeholders of high schools in education in order to reflect that the Cambodian school heads of high schools requires getting future training on the personal excellence competence.

Keywords: School principal, Competence, Personal excellence, Personal excellence competence, Managing personal effectiveness, Acting on challenging and possibilities, Pursuing continuous professional development.

1. Introduction

In response to the trends of global educational in ensuring the education for sustainability (the Millennium Development Goals of the United Nations after 2015) and the ASEAN Community Focus (2015)

focusing on the economic community, including: labor flows, labor forces, and human resources, the Royal Government of Cambodia has introduced a rectangular strategy in which the fourth rectangular focused on Capacity building and human resource development, especially the youth to become full, capable, precise and professional citizens for contributions in promoting the national economy from the current lower-middle income to a middle income country by 2030 and to a developed country by 2050 (the Government's Rectangular Strategy phase Goal 3).

To achieve this goal, the Ministry of Education, Youth and Sport have developed an Education Strategic Plan 2014-2018, with three major policies, in which one policy focusing on institutional development and capacity for education administration officials, and has launched 15 deep reform initiatives.

In order to process school management to be successfully implemented, all education managers, especially school head, must have five ASEAN competence standards, including Strategic Thinking and Innovation (STI), Instructional Leadership (IL), Personal Excellence (PE), Stakeholder Engagement (SE) and Managerial Leadership (ML). The five core competencies of school head are developed by the ten ASEAN members of SEAMEO INNOTECH, to ensure the education quality in the country of ASEAN region for achieving one community and one destiny. Among the five core competencies of the school head, Personal Excellence competence is the fourth competence and the crucial competence of school head to ensure the management of a school, achieve the student´s academic achievement, and promote the management, teaching and learning for the best results. Therefore, all school head should focus on three key competencies, including managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development.

In the ASEAN community, there is approximately half a million school head. Even in a mixed culture and context, the head of ASEAN schools faces similar challenges and opportunities. The first challenge is to provide quality education to students, regardless of their limited resources. The second challenge, however, is how to lead and how to manage schools effectively in the context of ongoing education reforms in the region.

School head refers to school´s leaders or managers. Personal excellence refers to the ability to create solutions to difficult situations to help oneself overcome these situations successfully. Competence refers to the combination of knowledge, skills, attitudes, and values that are essential for a successful work process. The personal excellence competence of school head refers to the ability to manage personal effectiveness, act on challenges and

possibilities, and pursue continuous professional development (SEAMEO INNOTECH, 2016). The personal excellence competence of school head is considered an important ability to lead and manage schools. Helping youth toward achieving full potential is also the strategic role of school head. This indicates that school head plays an important role in effective school operations.

In Cambodia, the Ministry of Education, Youth and Sport has developed a number of legal documents to ensure the quality and effectiveness of the management of educational institutions. These legal documents include: Professional Standards for Teachers (Teacher Training Department, 2011), Competence Standards for Directors of Teacher Training Centers (Ministry of Education, Youth and Sport, 2010), and Role and Responsibility of School Head, Deputy School Head and School Secretary (Ministry of Education, Youth and Sport, 2011).

The *Professional Standards of Teachers* document depicts professional knowledge, professional practice, professional learning and professional ethics, and details the capacity building, professional development, and professional improvement of a teacher to strengthen the quality of teacher´ teaching and the quality of Cambodian students´ learning.

The *Competence Standards for Directors of Teacher Training Centers* described the leadership, administrative work, academic activities, educational staff professional development, staff capacity building, education facilities, professional ethics, and the structure and competence standard components of school head. Competence standards for directors of teacher training centers are developed to improve the competence of school head in a better managing and leading work, in developing the teaching of teacher and learning of student to achieve good performance and right standard, and improving the positive relationship with the national and international community for the sustainability of the institution´s development plans. Meanwhile, the competency standards of school head help to work in schools in preparing the appropriate evaluation for achieving the goals and objectives of the organization, and is useful for providing the vision in the development of institutions, organizing a professional development, building capacity, improving management of the institution, providing the foundation to follow up, assessment and self-evaluation, and providing the way to use the budget appropriately and transparently.

The *Role and Responsibility of school head, deputy school head, and school secretary* described the evaluation criteria for the nomination, roles and responsibilities of the school head, deputy school head, and school secretaries, and provided details of the terms of the nomination of school head includes: qualifications, work experience, and professional ethics. School head is

nominated among the lowest education graduates just bachelor degree with a minimum of four years of experience as deputy school head, knowledge of managing employees, leadership, knowledge of information technology, good discipline, and ethics, and patient in working as well. The nomination of the deputy school heads also requires the same criteria as the nomination of the school head, with the exception of having worked as a head of a subject or as a school secretary at least four years. Particularly, for the nomination of a school secretary, the leadership, work experience, and qualifications are not focused much on the nomination of school head and deputy school head.

Reflections on personal excellence, roles and responsibilities of school head, which has been implemented and is implementing, including: leadership, administration, academic activities, education staff professional development, capacity building, education facilities, professional ethics, building school´s vision, mission and action plan, delivering action plan, inspecting on teaching and learning, organizing the council and the committee, resolving problems, and eventually communicating with stakeholders in the delivering decision (MoEYS, 2011).

But in reality, the personal excellence of some Cambodian school head is limited, as they are selected and nominated through teaching and learning experience, without having undergone initial training on the personal excellence competence (Long, N., 2014). In addition, the level of qualification of school head is limited as well as a factor affecting the quality of education in Cambodia (EEQP project report, 2013-2014).

At the same time, the Ministry of Education, Youth and Sport have developed a series of in-service training programs to strengthen professional competence for school head, especially in schools across the country. But, despite a series of in-service training, the personal excellence competence of school head was not yet responded to the reform of Ministry of Education, Youth and Sport, and so far have not had any studies have shown up the personal excellence standard of school head in Cambodia compare to the personal excellence competence of ASEAN schools head exist, especially in high school level.

This study focuses on comparing the personal excellence of the Cambodian school heads of high school to the personal excellence of ASEAN standards for school head that has three competencies, including: managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development. The objectives of this study are: (1) to find the levels of the personal excellence competence of Cambodian school head of high schools on managing personal effectiveness, acting on challenges and

possibilities, and pursuing continuous professional development; and (2) to compare the levels of the personal excellence competence of the Cambodian school head of high schools to the personal excellence competence of ASEAN standards for school head.

To achieve these above objectives, the research focuses on one research questions: What is the level of the personal excellence competence of Cambodian school head of high school regarding the managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development compared to the ASEAN standards for school head?

2. Methodology

2.1. Samples

This research questionnaires are divided into two types: the first type for school head, deputy school head, non-teaching staff and teacher of high school, and the second type is for focus group discussion among school head of high school him/herself, the deputy school head of high school themselves, non-teaching staff of high school themselves, and teacher of high school themselves. The participants were asked to fill and focus on three competencies of the personal excellence of school head of high school, including managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development.

2.2. Data collection

This research uses both quantitative and qualitative data. The quantitative data is collected by completing the close-questionnaire. The qualitative data is collected by completing the open-questionnaire. Both of the above data were collected from school head, deputy school head, non-teaching staff and teacher of high school totally 414. Among these number, school head of high school 4.10% (n=17), deputy school head 7.90% (n=33), non teaching staff 9.90% (n=41) and teacher of high school 78.00% (n=323). Those samples were selected from four provinces, including one small province, two medium provinces and one large province (Department of Planning, 2009), which may represent samples of nationwide.

2.3. Data Analy

All data derived from this research is used to understand the current status of school head of high school in duty and role. For qualitative analysis, frequency and mean score is used to assess the levels of the personal excellence competence of school head of high school through the comparison analysis by different variables of gender, provinces, areas, age ranges, and degree of qualifications, total period as in the current role, and total period of work experience in education. Additionally, independent T-Test analysis and One-Way ANOVA statistics are also used as the basis for this analysis

through the IBM SPSS Statistical 21. At the same time, this multi-dimensional data analysis is grouped and categorized based on the concepts and meanings of all similar terms. For the classification and meaning of the statements, the researchers read and analyzed the essence of each sentence in detail. Then the researchers deliver and explain each concept.

3. Results

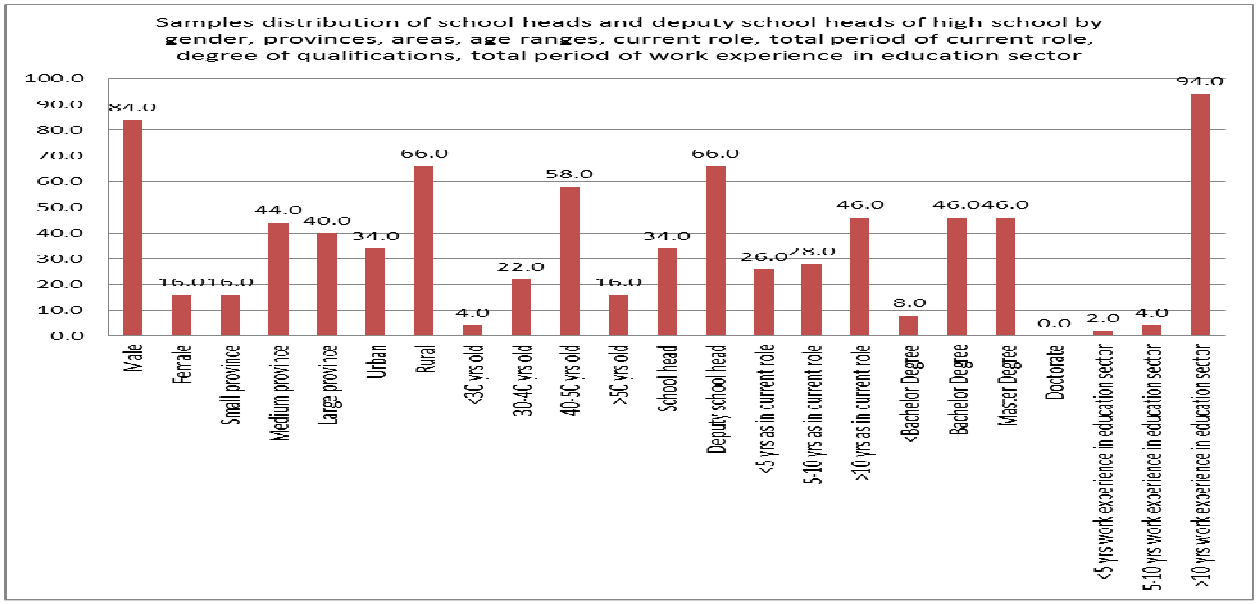
This research focuses on the personal excellence competence of school head of high school in which has three competencies, including managing personal effectiveness (A), acting on the challenges and possibilities (B), and pursuing continuous professional development (C). The first competence, *Managing Personal Effectiveness,* was analyzed five detailed enabling competencies, including leading by example (A1), demonstration transparency and accountability (A2), practice a balanced healthy lifestyle (A3), taking pride in one´s profession (A4), and delivering the result (A5). The second competency, *Acting on Challenges and Possibilities*, was analyzed three key detailed enabling competencies, including managing priorities (B1), exhibition decisiveness in addressing challenges (B2), an exhibition an enterprising attitude (B3). The third competence, *Pursuing Continuous Professional Development*, was analyzed two key detailed enabling competencies, namely: taking responsibility for lifelong learning (C1) and advocating ASEAN values and perspectives (C2). The three competencies of personal excellence competence are set out in the Guidebook for Competence for ASEAN School Head of Regional Center of Education Ministers, Innovation and Technology (SEAMEO INNOTECH, 2016), in which Cambodia is also a member of this community (Cambodia-Asean Membership, 1999).

3.1. Data Description

The data from the questionnaire shows participants complying with the category of descriptions, including gender, provinces, areas, age ranges, current position, total years as in the current position, degree of qualifications, and total years of educational experience.

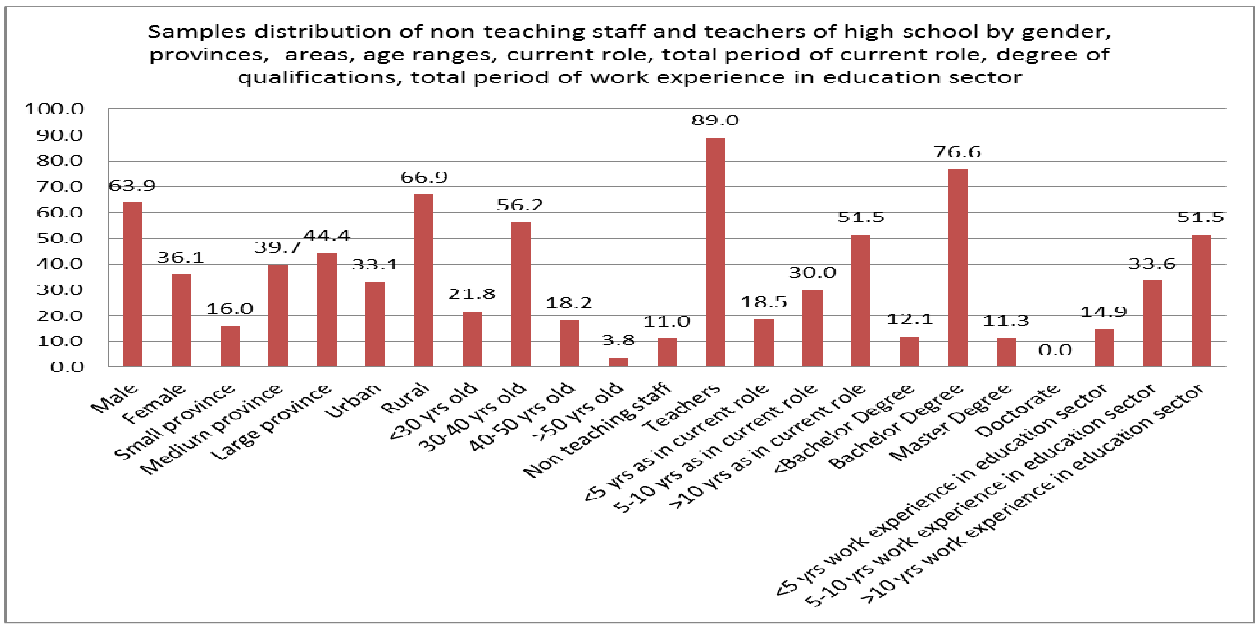
Graph 1 below shows the data on school head and deputy school head of high school: male 84.0% (n=42), and female 16.0% (n=8); in small province 16.0% (n=8), in medium province 44.0% (n=22), and in large province 40.0% (n=20); in urban areas 34.0% (n=17), and in rural areas 66.0% (n=33); current role as a school head of high school 33.3% (n=17) and as a deputy school head of high school 66.7% (n=33); aged less than 30 years old 4.0% (n=2), between 30 and 40 years old 22.0% (n=11), between 40 and 50 years old 58.0% (n=29), and more than 50 years old 16.0% (n=8); total period as in the current role for less than 5 years 26.0% (n=13), between 5 to 10 years 28.0%

(n=14), and more than 10 years 46.0% (n=23); degree of qualifications of under bachelor 8.0% (n=4), bachelor 46.0% (n=23), master 46.0% (n=23), and doctorate 0.0% (n=0); and total period of work experience in education sector for less than 5 years 2.0% (n=1), between 5 to 10 years 4.0% (n=2), and over 10 years 94.0% (n=47).



Graph 1. Samples of school head of high school

Graph 2 below shows a data sample of non-teaching staff and teachers of high school, including: male 63.9% (n=232) and female 36.1% (n=131); in small province 16.0% (n=58), in medium province 39.7% (n=144), and in large province 44.4% (n=161); in urban area 33.1% (n=120) and in rural area 66.9% (n=243); current role as non-teaching staff 11.0% (n=40), and as teachers of high school 89.0% (n=323); age ranges less than 30 years old 21.8% (n=79), between 30 and 40 years old 56.2% (n=204), between 40 and 50 years old 18.2% (n=66), and more than 50 years old 3.9% (n=14); total period as in the current role for less than 5 years 18.5% (n=67), between 5 and 10 years 30.0% (n=109), and more than 10 years 51.5% (n=187); degree of qualifications of under bachelor 12.1% (n=44), bachelor 76.6% (n=278), master 11.3% (n=41), and doctorate 0.0% (n=0); and total period of work experience in education sector for less than 5 years 14.9% (n=54), between 5 to 10 years 33.6% (n=122), and over 10 years is 51.5% (n=187).



Graph 2. Samples of non-teaching staff and teachers of high school

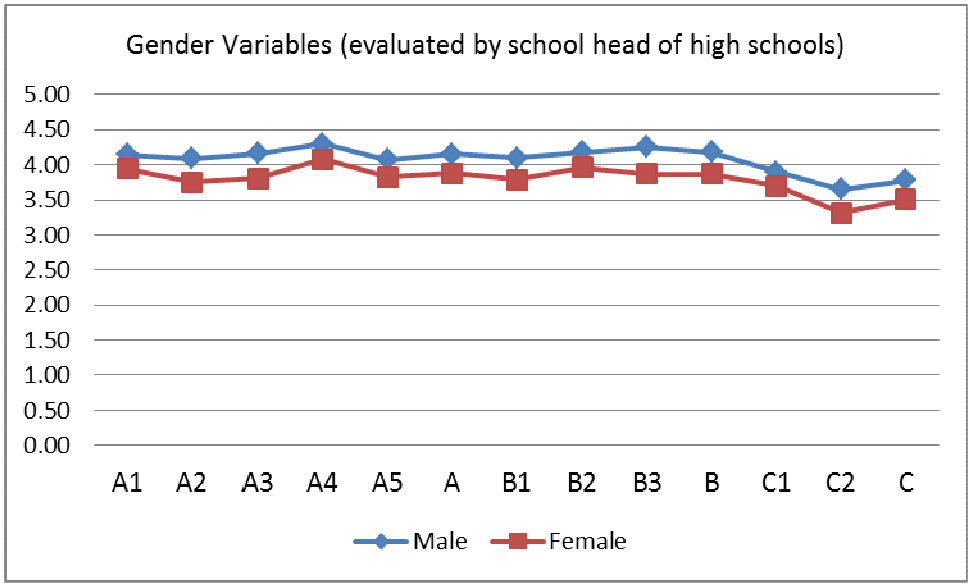
3. 2. Reliability of Research Tools

As mentioned above, the researchers used two types of questionnaires. Each questionnaire was tested to check the level of reliability by using Cronbach's alpha. As a result, the questionnaire for school head and deputy school head of high school has a confidence level of 0.931 and the questionnaire for non-teaching staff and teacher of high school is at 0.945. These figures are the best value that the questionnaire can use in this research. Data obtained through completing this questionnaire can be used to analyze the sectors.

3.3. Personal Excellence Competence by Variables

A. Gender Variables

In gender variables, this study divides into two categories: male and female. The analysis and comparison of gender variables evaluated by school head of high school show that the male school head of high school has a higher average score than the female school head of high school for all components of the personal excellence competence (4.03 and 3.75) (Graph 3). This trend shows that the male school head of high school has a higher level of the personal excellence competence than the female school head of high school in all competence of the personal excellence competence, including managing personal effectiveness, acting on the challenge and possibilities, and pursuing continuous professional development.



Graph 3. Gender Variables (evaluated by school head of high schools)

Note:

A: Managing personal effectiveness

A1: Lead by example

A2: Demonstrate transparency and accountability

A3: Practice a balanced healthy lifestyle

A4: Take pride in one's profession

A5: Deliver results

B: Acting on challenges and possibilities

B1: Manage priorities

B2: Exhibit decisiveness in addressing challenges

B3: Exhibit an enterprising attitude

C: Pursuing continuous professional development

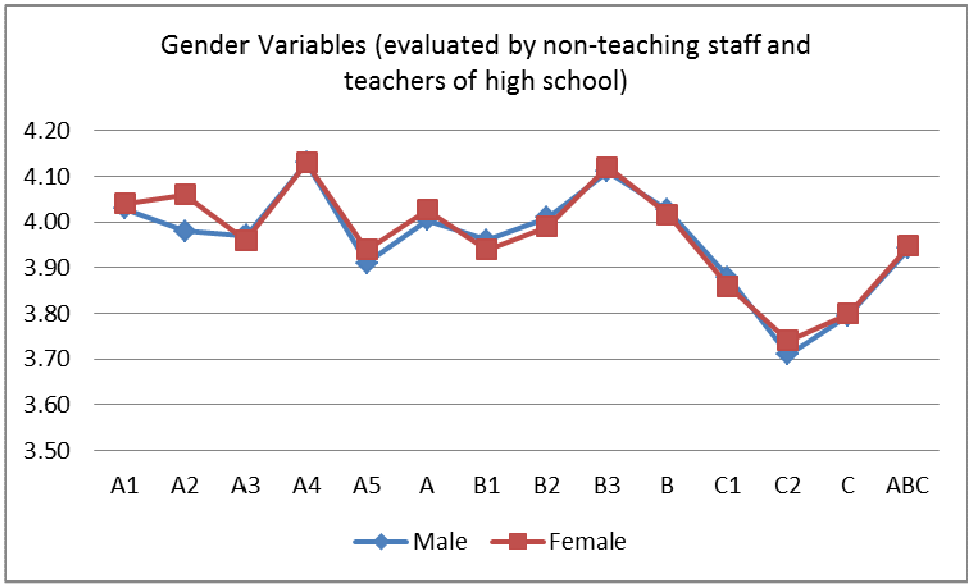
C1: Take responsibility for lifelong learning

C2: Advocate ASEAN values and perspectives

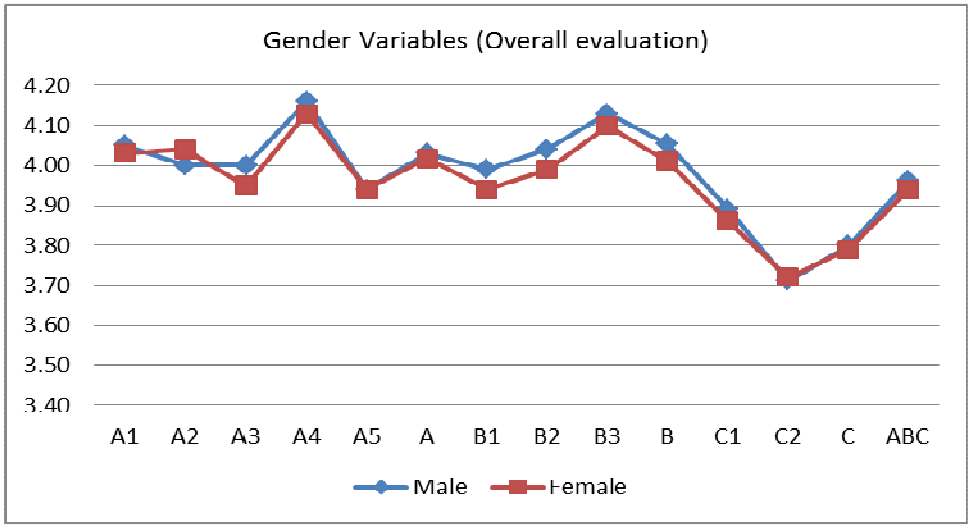
In the same analysis, the results seem to contradict the results evaluated by school head of high school. Non-teaching staff and teacher of high school show that female school head of high school has a higher average score (3.95 and 3.94) (Graph 4). As a result, the female school head of high school has a higher competence of the personal excellence, although the non-teaching staff and teacher of high school showed lower average score on a certain enabling competencies of the female school head of high school, including: practice a balanced healthy lifestyle (A3), manage priorities (B1), exhibit decisiveness in addressing challenges (B2), and take responsibility for lifelong learning (C1).

However, the overall evaluation results show that the male school head of high school has a higher average score than the female school head of high school for all competence of the personal excellence (3.96 and 3.94) (Graph 5). This trend is likely the personal excellence competence of the female school head of high school is lower than or similar to the male school head of high school on some enabling competencies, including the ability to: lead by example (A1), practice a balanced healthy lifestyle (A3), take pride in one's profession (A4), manage priorities (B1), exhibit decisiveness in addressing challenges (B2), exhibit an

enterprising attitude (B3), and take responsibility for lifelong learning (C1). However, this result only shows in a number of the sample of this research, it cannot draw the overall conclusion of the personal excellence competence levels of school head of high school across Cambodia because the results of T-test analysis of gender variables indicate that there is no significant difference between the personal excellence competence level of the male and female school head of high school (no significant difference between groups), and gap between average score is very small (for school head of high school is 3.89 and for non- teaching staff and teacher of high school is 3.94).



Graph 4. Gender Variables (evaluated by non-teaching staff and teachers of high school)

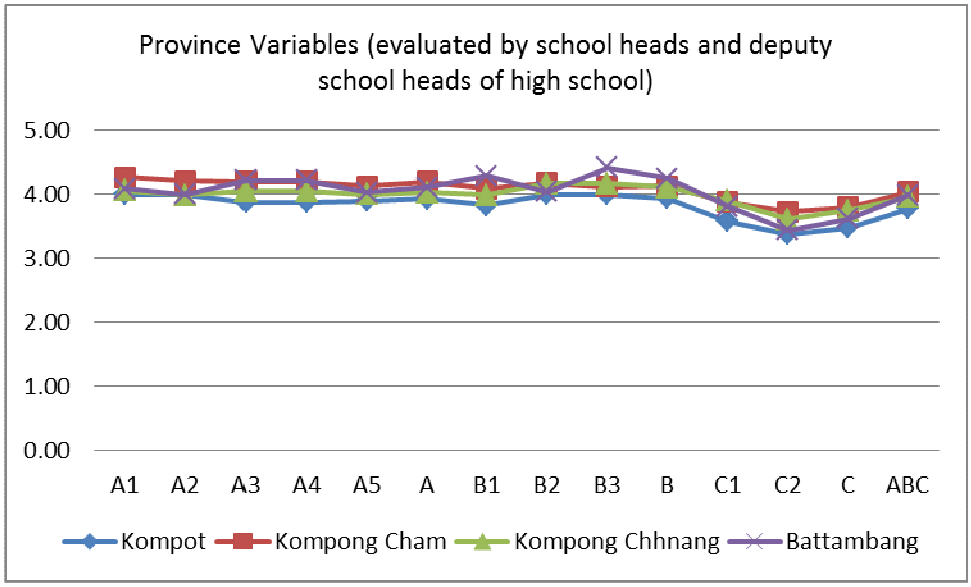


Graph 5. Gender variables (overall evaluation)

B. Province variables

In the province variable, the researchers recruited four provinces: Kampot (small province), Kampong Cham (large province), Kampong Chhnang (medium province) and Battambang (medium

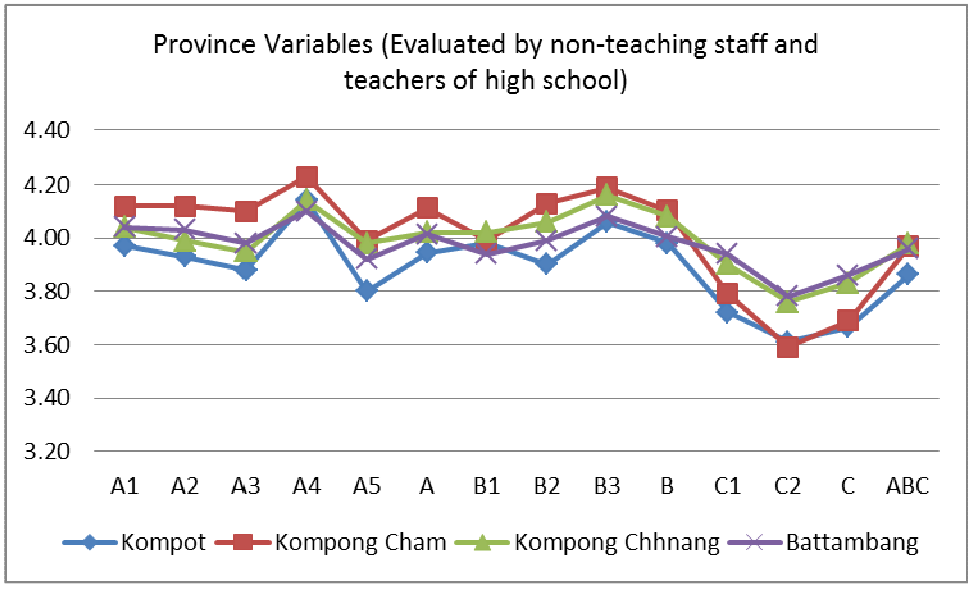
province) (Department of Planning, 2009). The analysis and comparison of province variables, the evaluation made by school head of high school shows that school head of high school in Kompong Cham get the highest average score, and school head of high school in Kampot get the lowest average score, school head of high school in Battambang get the second highest average and school head of high school in Kompong Chhnang get the third highest average score (4.05, 4.00, 3.97 and 3.79) (Graph 6). This trend shows that school head of high school in Kampong Cham has the highest personal excellence competence, while school head of high school in Kampot has the lowest personal excellence competence, school head of high school in Battambang has the second highest personal excellence competence, and school head of high school in Kompong Chhnang has the third highest personal excellence competence. As a result, this means that school head of high school in a large province have a higher personal excellence competence than school head of high schools in medium and small provinces.



Graph 6. Province variables (evaluated by school heads and deputy heads of high school)

In the same analysis, the results seem to contradict some of the results evaluated by school head of high school. Non-teaching staff and teacher of high school show that school head of high school in Kompong Chhnang get the highest average score, and school head of high school in Kampot get the lowest average score, while school head of high school in Kompong Cham get the second highest average score, and school head of high school in Battambang has the third highest average score (3.98, 3.97, 3.96 and 3.86) (Graph 7). This trend shows that school head of high school in Kampong Chhnang has the highest personal excellence competence and school head of high school

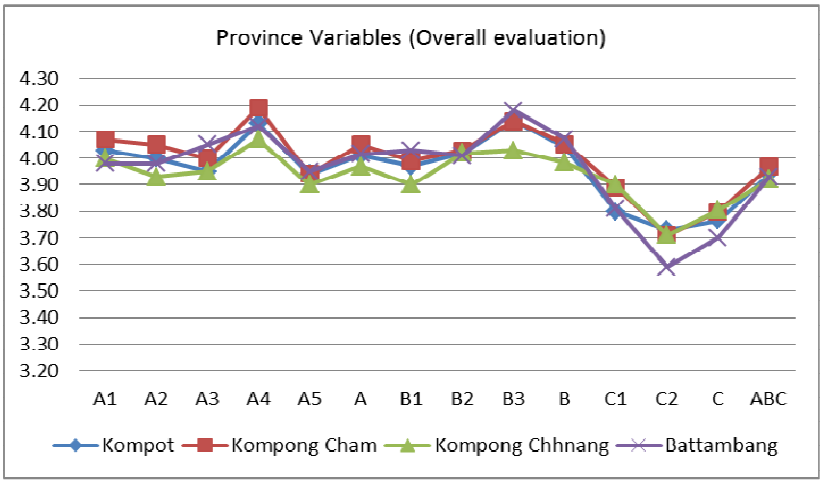
in Kampot has the lowest personal excellence competence, while school head of high school in Kampong Cham has the highest personal excellence competence and school head of high school in Battambang has the highest personal excellence competence. As a result, school head of high school in medium province have a higher personal excellence competence than school head of high school in smaller and larger provinces.



Graph 7. Province Variables (evaluated by non-teaching staff and teacher of high school)

However, the overall evaluation results show that school head of high school in Kampong Cham has a higher average score than school head of high school in Kompong Chhnang (3.97 and 3.92) (Graph 8). This trend implies that school head of high school in the large province has higher personal excellence competence than school head of high school in the medium province. However, school head of high school in all provinces demonstrates that the personal excellence competence in their current position is limited. This may mean that all school head of all high schools has little responsibility for their lifelong learning, as well as their non-teaching staff and teacher of high school who manage and support little to the vision and value of ASEAN. This may indicate that school head of high school has little competence on pursuing continuous professional development competence. This competence focuses on two enabling competence that school head of high school must possess, such as taking responsibility for lifelong learning and advocating ASEAN values and perspectives, in which including maintaining the curiosity and interest in the current and future trends, gaining the prescribed professional qualifications and competencies, seeking a mentor who gives feedback and provides lifelong leadership and development support, engaging in self-

learning through ICT and other multimedia resources, participating in learning activities sponsored by institutions and organizations that impact education, developing a personal and professional learning network, demonstrating understanding of the rationale behind the ASEAN framework, sharing knowledge on policies in education in support of ASEAN integration, promoting multicultural understanding and respect for diversity, and developing skills and values in using a language that connects the ASEAN region.

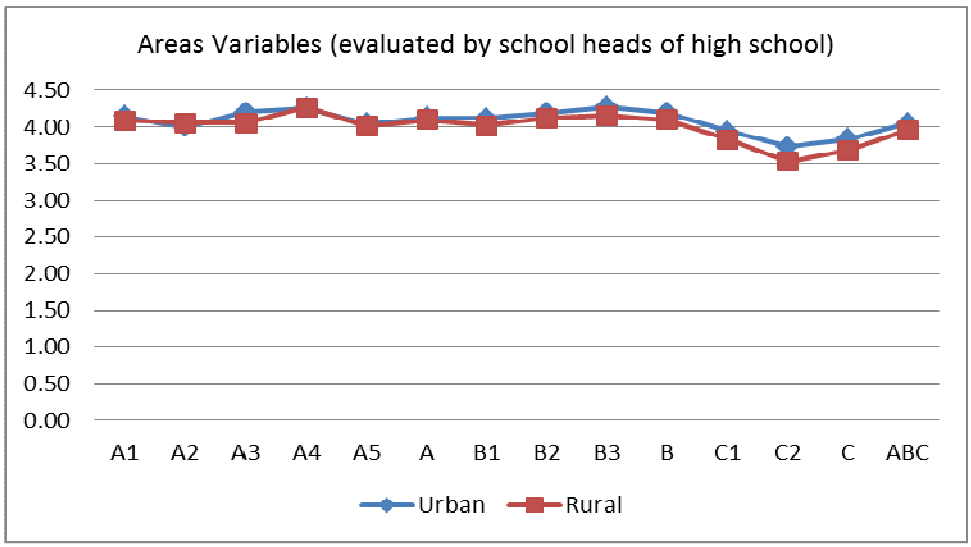


Graph 8. Province variables (overall evaluation)

However, the results of the province variables can only be discussed in the form of this study, but it does not necessarily reflect the personal excellence competence of school head of high school across Cambodia, because the One Way ANOVA analysis shows no significant difference between province variables of the personal excellence competence of school head of high school (or less than 1) and the gap between average score is very low (for school head of high school is 3.95 and for non-teaching staff and teacher of high school is 3.90).

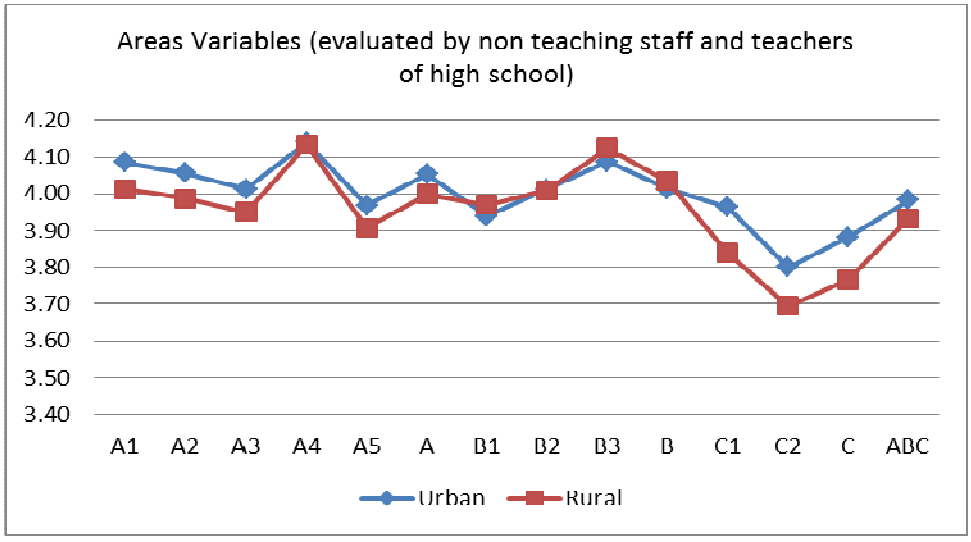
C. Area Variables

This research recruited participants from two areas: urban areas (high schools in the provincial capital) and rural areas (high schools in the districts). The tendency of area variables has shown somewhat different and respects on all competence of the personal excellence competence of school head of high school in both urban and rural areas. An analysis and comparison of area variables that evaluated by school head of high school show that school head of high school in urban areas has a higher average score than school head of high school in rural areas (4.06 and 3.96) (Graph 9). This trend shows that school head of high school in the urban areas is more competence in the personal excellence than school head of high school in the rural areas.



Graph 9. Area variables (evaluated by school head of high school)

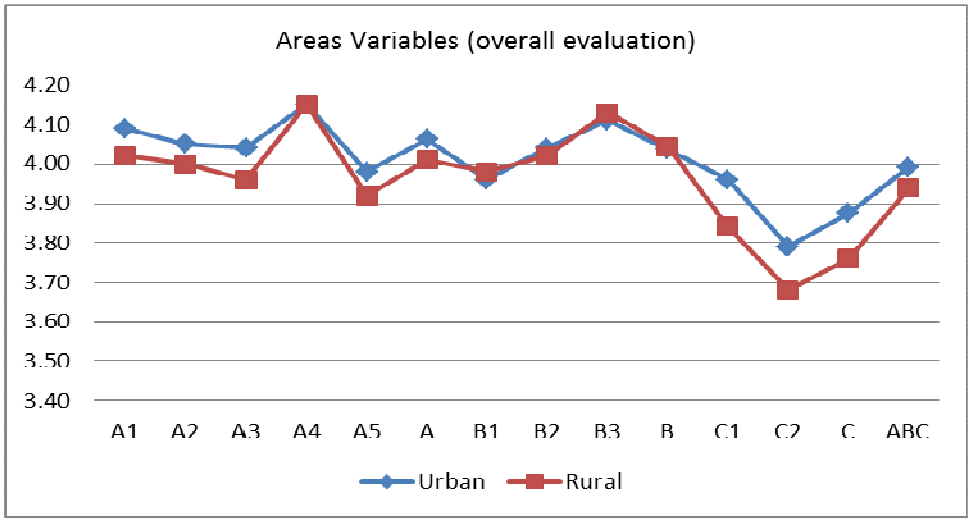
In the same analysis, the area variable results show the same as the evaluation by school head of high school. Non-teaching staff and teacher of high school show that school head of high school in the urban area has a higher average score than school head of high school in the rural areas (3.98 and 3.93) (Graph 10). This trend shows that school head of high school in the urban areas (high schools in provincial capital) is more competence in the personal excellence than school head of high school in rural areas (high schools in the district).



Graph 10. Area variables (evaluated by non-teaching staff and teacher of high school)

However, the overall evaluation results show a similarity in all respects of the personal excellence competence of school head of high school in urban and rural areas. Graph 11 shows that the personal excellence competence of school head of high school in urban areas has a slightly higher average score than school head of high school in rural areas (3.99 and 3.94).

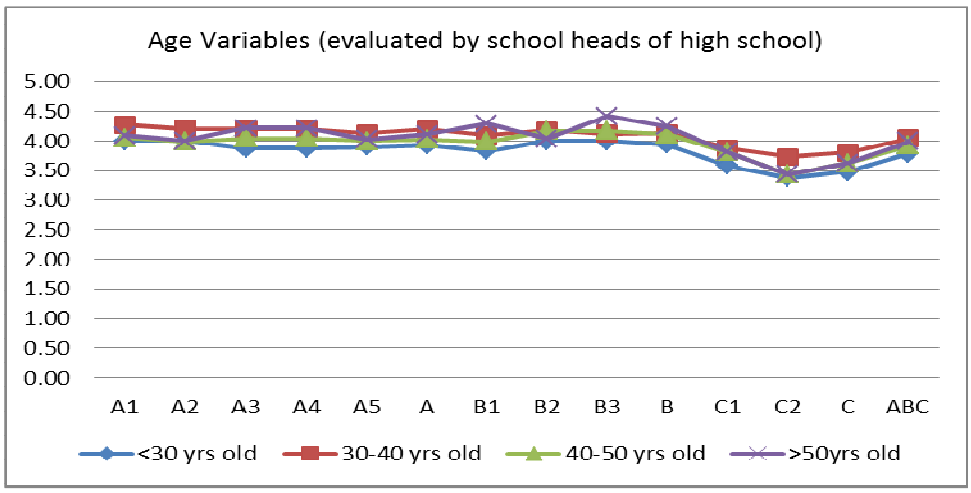
Based on this result, there is a debate that school head of high school in urban areas is more competence on managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development that school head of high school in rural areas, resulting in a higher personal excellence competence than school head of high school in rural areas. But based on T-test analysis from school head of high school, non-teaching staff and teacher, it showed no significant differences between school head of high school in urban and rural areas because of the smallest gap between average scores (for school head of high school is 4.01 and for non-teaching staff and teacher of high school is 3.95).



Graph 11. Area Variables (overall evaluation)

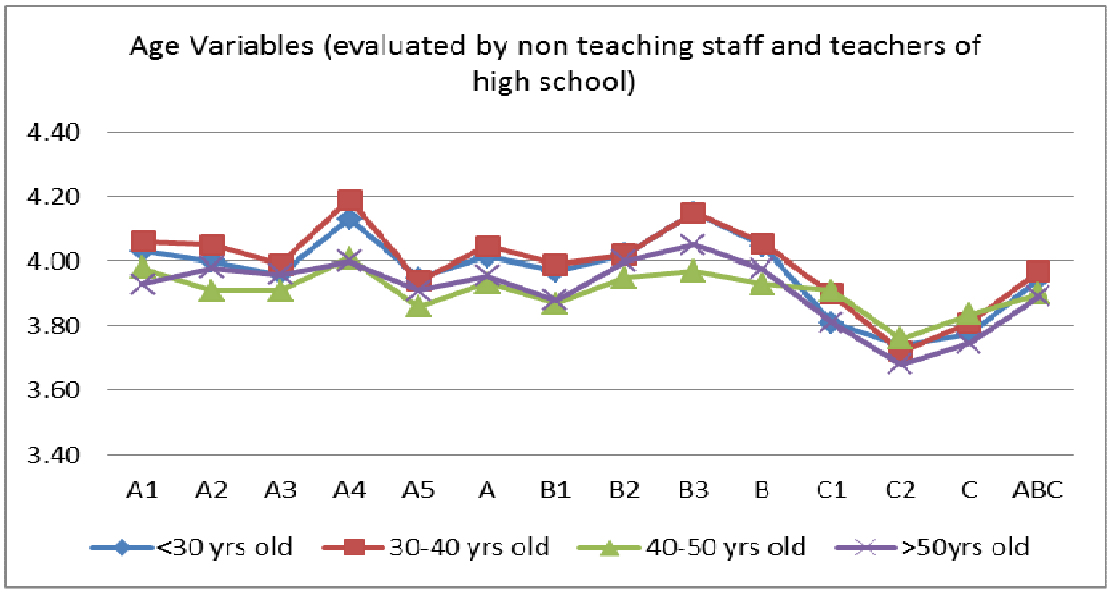
D. Age Variables

The study divided participants into four different age ranges, including less than 30, between 30 and 40, between 40 and 50 and over 50 years old of age. The Analysis and comparison of age variables that evaluated by school head of high school indicates that school head of high school between 30 and 40 years old of age has the highest average score (4.05) and school head of high school who aged less than 30 years old has the lowest average score (3.79) (Graph 12). As a result, school head of high school seems to show that school head of high school aged between 30 and 40 years old have a higher personal excellence competence than school head of high school who are under 30, between 40 and 50 and over 50 years old of age. This means that middle age school head of a high school is more competence in the personal excellence than younger and older age school head of high school.

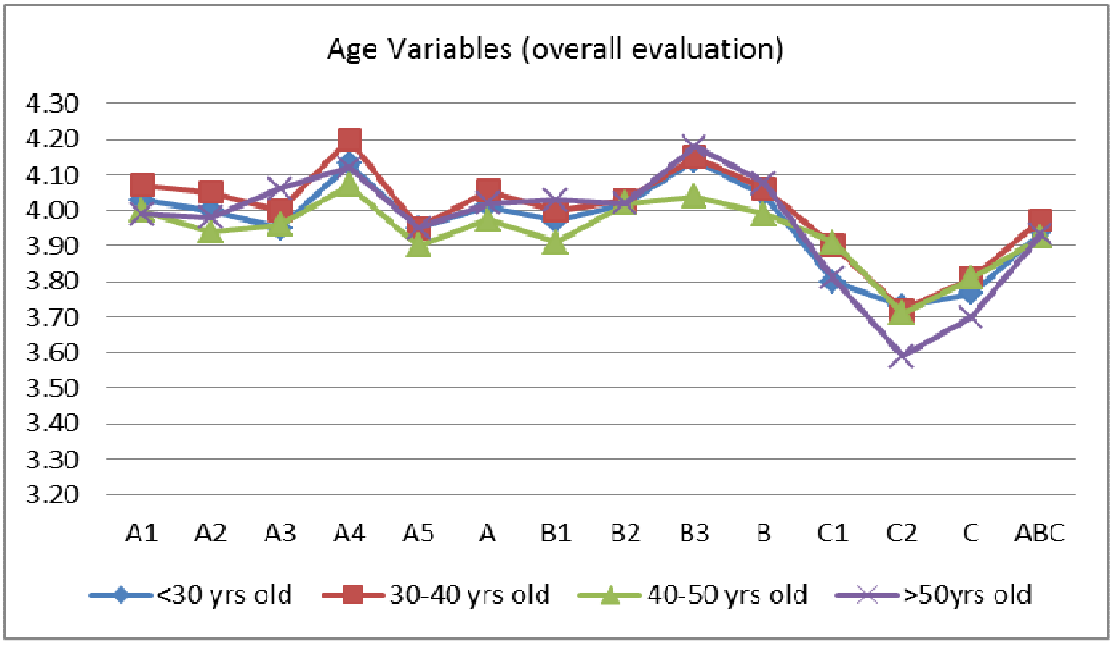


Graph 12. Age variables (evaluated by school head of high school)

In the same analysis, results show a similarity to the result evaluated by school head of high school. Non-teaching staff and teacher of high school show that school head of high school who is between 30 and 40 years old of age still has the highest average score (3.97), but school head of high school age over 50 years old has the lowest average score (3.79) (Graph 13). As a result, non-teaching staff and teacher seem to show that school head of high school aged between 30 and 40 years old have a higher personal excellence competence than school head of high school that is over 50, between 40 and 50 and less than 30 years old of age. This means that middle age school head of a high school is more competence in the personal excellence than older age school head of high school.



Graph 13. Age variables (evaluated by the non-teaching staff and teacher)



Graph 14. Age variables (overall evaluation)

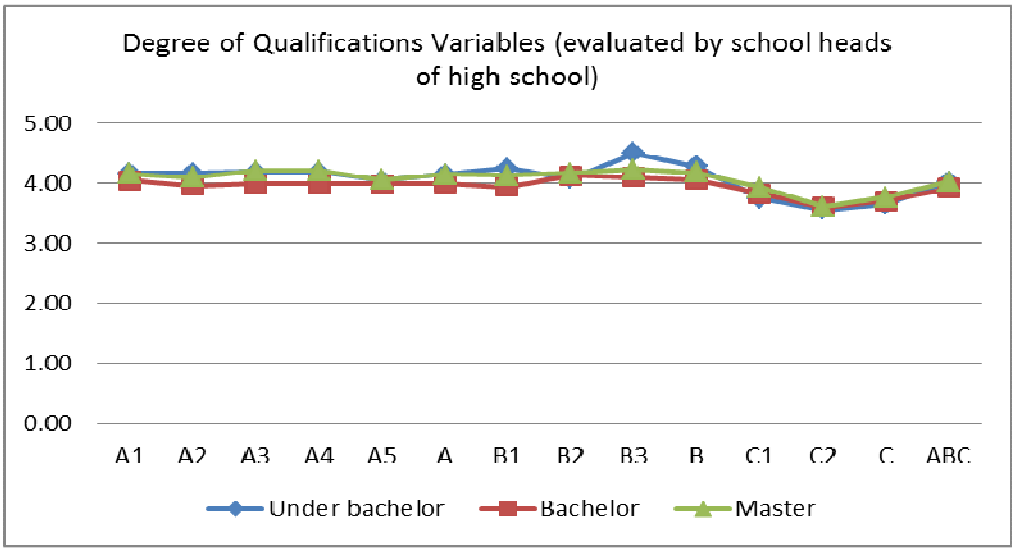
However, the overall evaluation results indicate a similarity to those evaluated by school head of high school and by non-teaching staff and teacher of high school. The trend suggests that school head of high school aged between 30 and 40 years old still has the highest average score (3.97), but school head of high school aged between 40 and 50 years old, has the lowest average score (3.92) (Graph 14). As a result, both school head of high school and non-teaching staff and teacher of high school seem to show that school head of high school aged between 30 and 40 years old have a higher personal excellence competence than school head of high school that is between 40 and 50 years old of age. This means that middle age school head of high school have a higher personal excellence competence than older age school head of high school. Based on this result, there is a debate that middle age school head of the high school is likely to be able to manage personal effectiveness, act on challenges and possibilities, and pursuing continuous professional development, thereby making them have a higher level of the personal excellence competence than older age school head of high school. But, T-Test analysis showed no significant difference between middle age school head of high school and older age since the gap between average score is very small (for school head of the high school is 3.94 and for non-teaching staff and teacher is 3.93).

E. Degree of Qualification Variables

Discussion on the degree of qualification variables, it shows certain differences between the high and low degree of qualification of school head of high school. This study scaled the degree of qualification variables into four categories, including

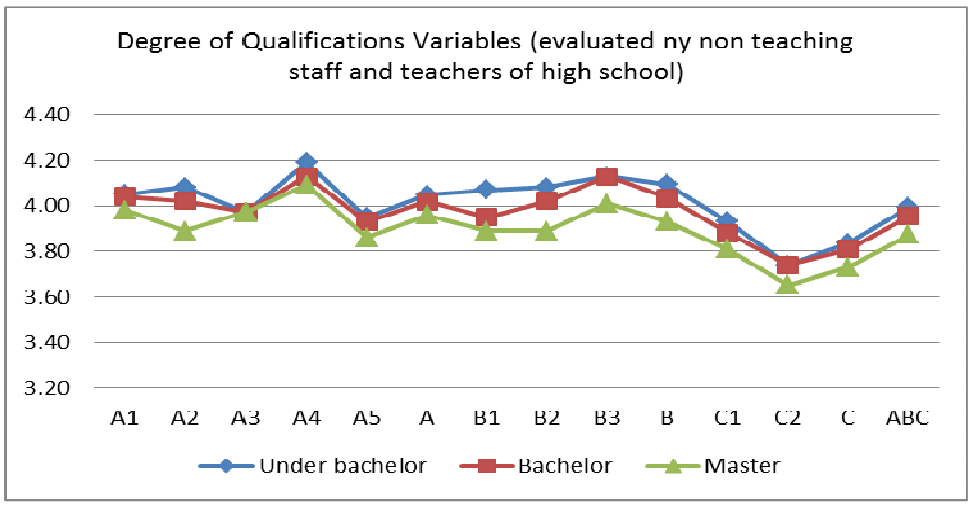
degrees of under bachelor (high school diploma or associate), bachelor, master, and doctorate.

Analysis and comparison of the degree of qualification variables that evaluated by school head of high school show that school head of high school with a degree of under bachelor and master has a higher average score than school head of high school with a degree of bachelor (4.03 and 3.92) (Graph 15). This trend means that school head of high school with a higher degree of graduation is more competence in the personal excellence than school head of high school with a lower degree of graduation.

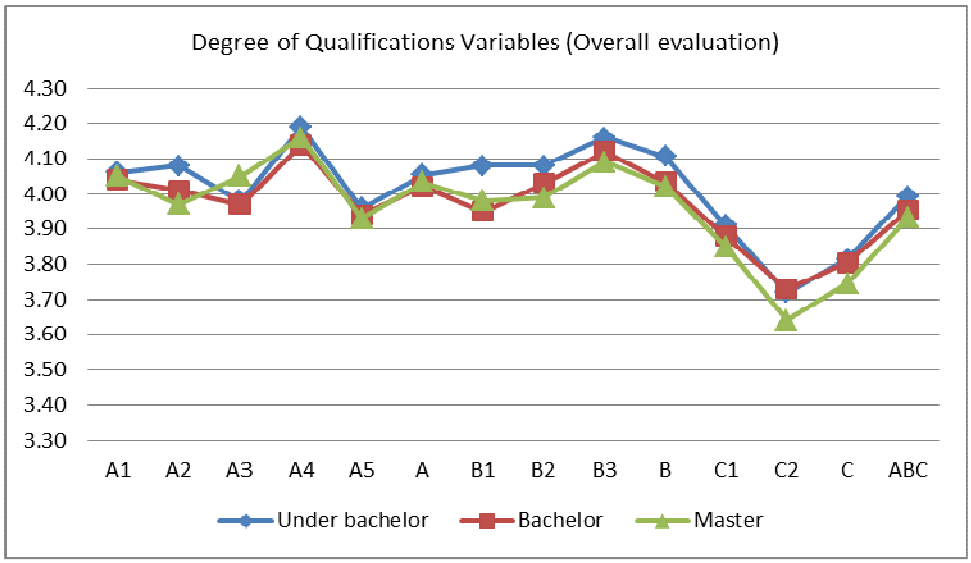


Graph 15. Degree of graduation variables (evaluated by school head of high school)

In the same analysis, the results seem to contradict the results evaluated by school head of high school. Non-teaching staff and teacher of high school show that school head of high school with a degree of under bachelor have a higher average score than school head of high school with degree of bachelor and school head of high school with a degree of bachelor have a higher average score than school head of high school with a degree of master (Grade 16). This trend shows that school head of high school with a degree of under bachelor have a higher personal excellence competence than school head of high school with a degree of bachelor, and school head of high school with a degree of bachelor has a higher personal excellence competence than school head of high school with a degree of master. This means that school head of high school with a lower degree of qualification is more competence in personal excellence than school head of high school with a higher degree of qualification.



Graph 16. Degree of qualification variables (evaluated by non-teaching staff and teacher of high school)



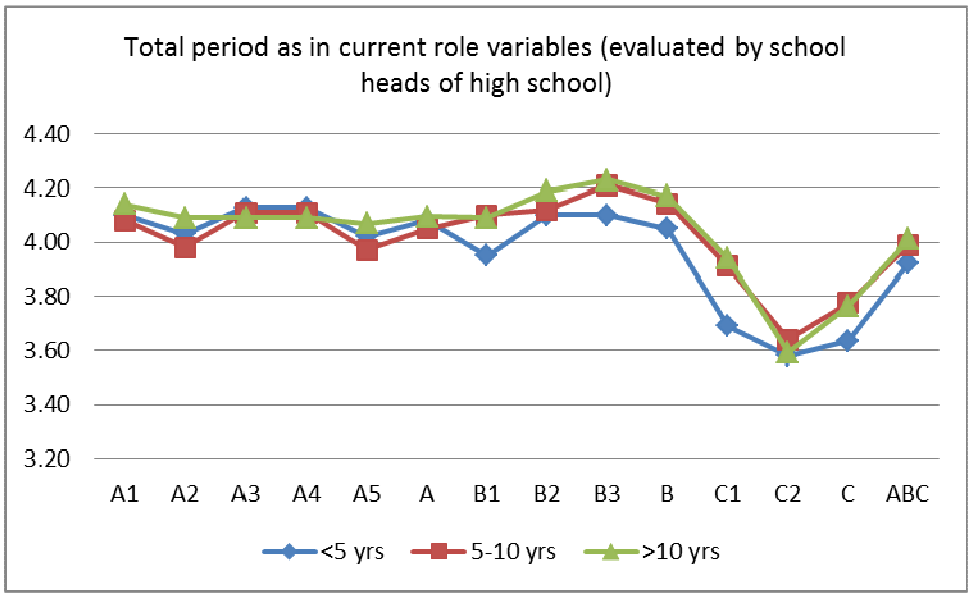
Graph 17. Degree of qualification variables (overall evaluation)

However, the overall evaluation results show that school head of high school with a degree of under bachelor has a higher average score than school head of high school with a degree of bachelor, and school head of high school with a degree of bachelor has a higher average score than school head of high school with a degree of master (Graph 17). This result shows that school head of high school with a degree of under bachelor is more competence in the personal excellence than school head of high school with a degree of bachelor, and school head of high school with a degree of bachelor is more competence in the personal excellence than school head of high school with a degree of master. This means that school head of high school with a lower degree of qualification is more competence in the personal excellence than school head of high school with a higher degree of qualification. But, based on T-Test analysis, the results showed no significant difference

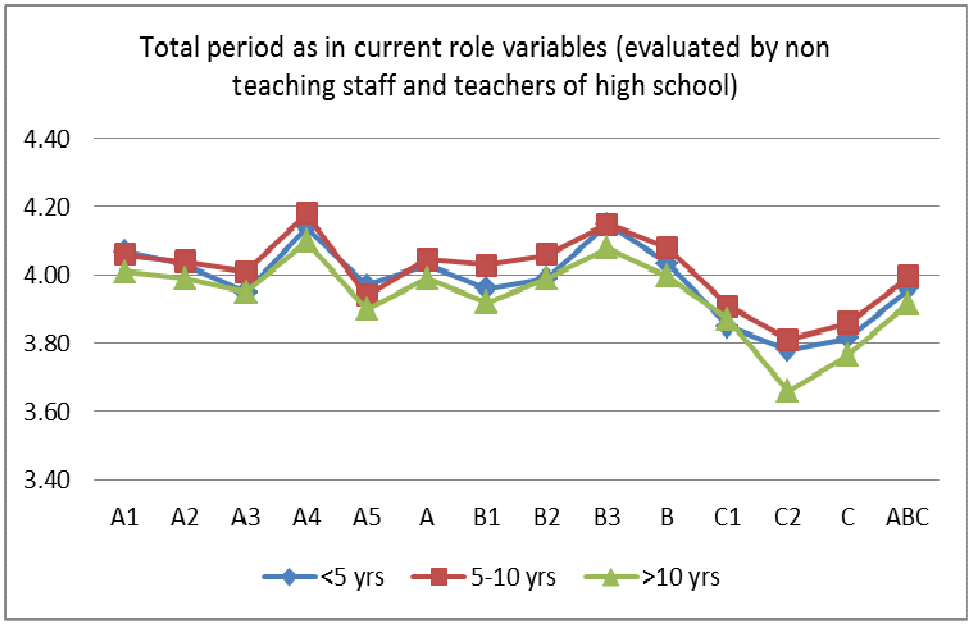
between school head of high school with a lower and higher degree of qualifications since the gap of the mean score is very small (for school head of the high school is 3.99 and for non-teaching staff and teacher of high school is 3.93).

F. Total Period as in the Current Role as School Head of High School Variables

Discussion on total period as in the current role as school head of high school variables, it shows certain differences between school head of high school that is in the current role for short, medium and long period in the personal excellence competence. The study divided the total period as in the current position as school head of high school into three different periods, including less than 5 years, between 5 and 10 years and more than 10 years of the period. Analysis and comparison of total period as is the current role as school head of high school variables that evaluated by school head of high school showed that school head of high school whose role more than 10 years of period has a higher average score than school head of high school whose current job roles between 5 to 10 years of period, and school head of high school whose job in the current role of between 5 to 10 years of period has a higher average score than school head of high school whose job in the current role for less than 5 years of period (4.01, 3.99 and 3.92) (Graph 18). This trend indicates that school head of high school with the longer period of role employment is more competence in the personal excellence than school head of high school that's with the shorter period of the role in current position.

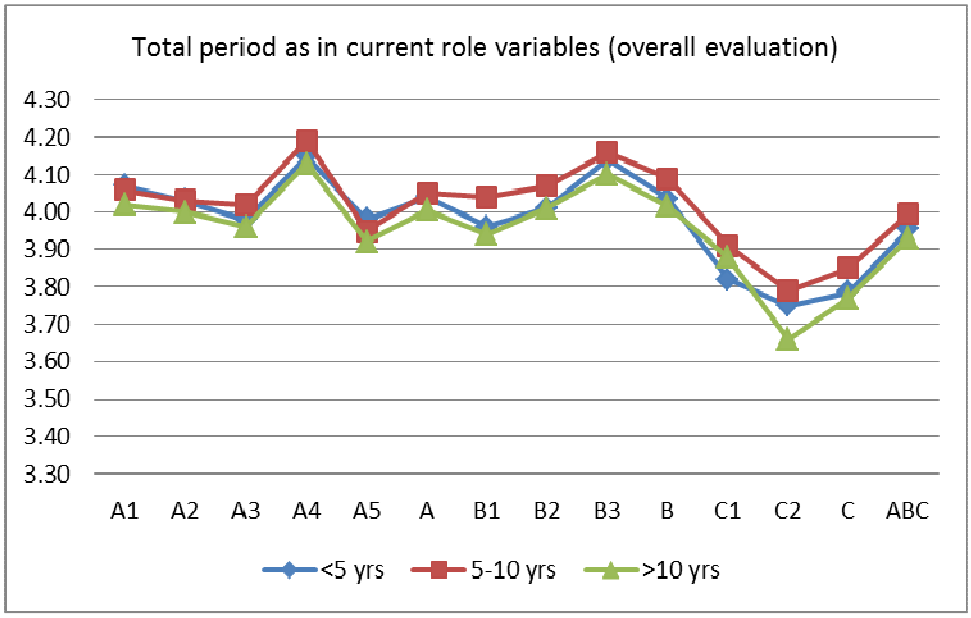


Graph 18. Total period as in the current role as school head of high school (evaluated by school head of high school)



Graph 19. Total period as in the current role as school head of high school variables (evaluated by non- teaching staff and teacher of high school)

In the same analysis, the results seem to contradict the results evaluated by school head of high school. Non-teaching staff and teacher of high school indicate that school head of high school with a current working term of between 5 to 10 years of period has a higher average score than school head of high school whose current term of office is less than 5 years, and school head of high school who is currently working less than 5 years has a higher average score than school head of high school in the current role over 10 years (Graph 19). This trend suggests that school head of high school whose current job roles ranging from 5 to 10 years have a higher competence in the personal excellence than school head of high school whose work in the current role for less than 5 years, and school head of high school who have job in the current role for less than 5 years have a higher competence in the personal excellence than school head of high school whose current role more than 10 years (4.00, 3.96 and 3.92). This means that school head of high school who plays the current role in a medium-period (between 5 to 10 years) is more competence in the personal excellence than school head of high school who has a current short period role (less than 5 years) and long period role (over 10 years).



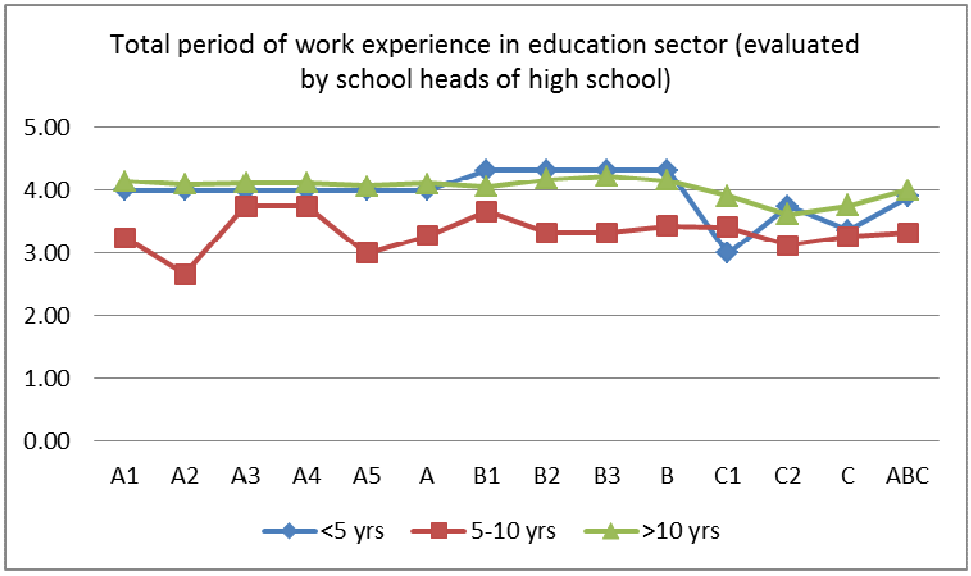
Graph 20. Total period as in the current role as school head of high school variables (overall evaluation)

However, the overall evaluation results show that school head of high school whose current working between 5 to 10 years has a higher average score than school head of high school who has a working term of less than 5 years, and higher average score than school head of high school who has a working term of more than 10 years (Graph 20). This trend shows that school head of high school who is currently employed in the current role of between 5 to 10 years is more competence in the personal excellence than school head of high school who have less than 5 years of professional roles, and more and more competence in the personal excellence than school head of high school whose current working positions exceed 10 years (4.00, 3.95 and 3.93). This means that school head of high school whose current role in a duration of medium-term (between 5 and 10 years) is more competence in the personal excellence than school head of high school in a current short-term role (less than 5 years) and a longer-term role (over 10 years). But based on t-test analysis from school head of high school, non-teaching staff, and teacher of high school, it showed no significant difference between school head of high school with short-term current role (less than 5 years), and school head of high school with long-term current role (over 10 years) since the gap between average score is very small (for school head of high school is 3.99 and for non-teaching staff and teacher of high school is 3.93).

G. Total Period of Work Experience in Education Sector Variables

Discussion on total period of work experience in education sector variables, the

results show that school head of high school with short-term, medium-term and long-term education experience has similar personal excellence competency. The study divided the total period of work experience in the education sector variables into three different periods, including less than 5 years, between 5 and 10 years and more than 10 years. An analysis of the total period of work experience in education sector evaluated by school head of high school shows that school head of high school with over 10 years of work experience in the education sector has a higher average score than school head of high school who has less than 5 years of work experience in the education sector and more higher average score than school head of high school who has a work experience in education sector between 5 and 10 years (4.01, 3.90 and 3.33) (Graph 21). This means that school head of high school that has longer work experience in the education sector is more competence in the personal excellence than school head of high school who have short and medium-term work experience in education sector.

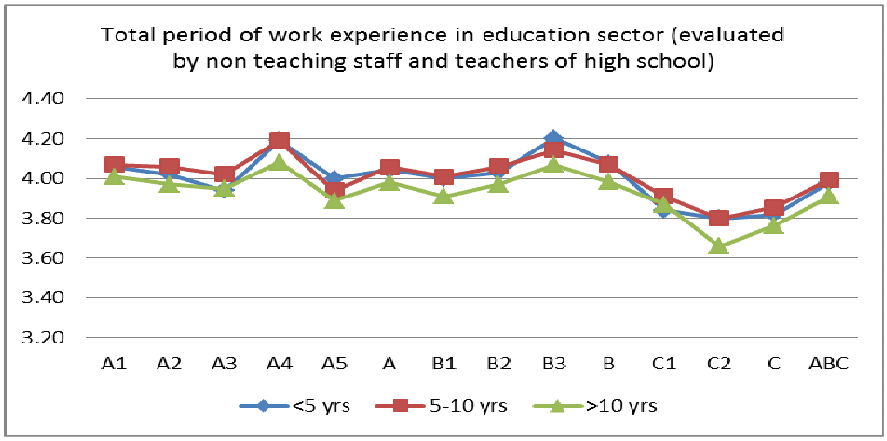


Graph 21. The Total period of work experience in education sector variables (evaluated by school head of high school)

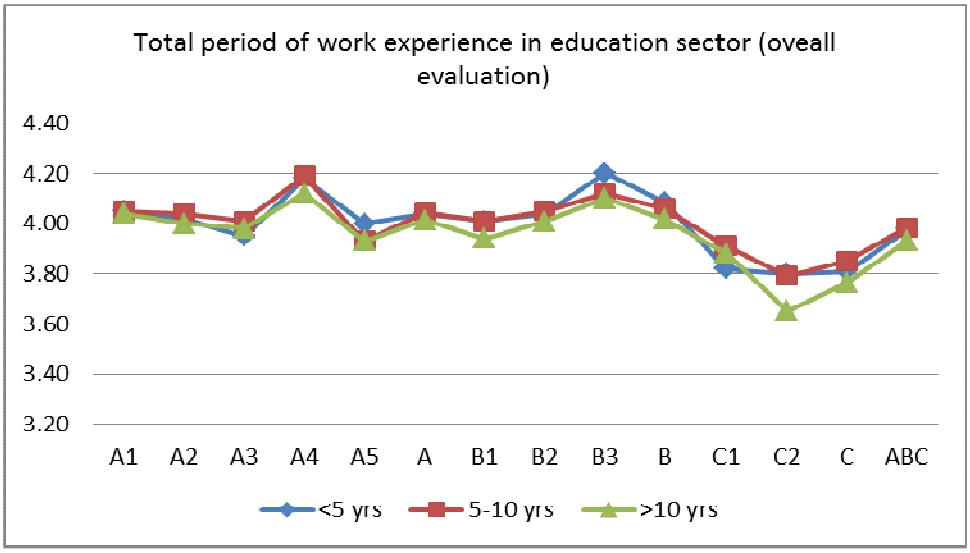
Contrary to the results evaluated by school head of high school, non-teaching staff and teacher of high school showed that school head of high school with work experience in education sector between 5 and 10 years had a higher average score than school head of high school with work experience in education sector for less than 5 years, and had more higher average score than school head of high school with work experience in education sector more than 10 years (Graph 22). This means that school head of high school who has 5 years of work experience in the education sector has a higher personal excellence competence than school head of high school who has less

than 5 years of work experience in education sector, and has higher personal excellence competence than school head of high school who has more than 10 years of work experience in education sector (3.99, 3.98 and 3.91). It is further stated that school head of high school who has experience in the medium-term education (between 5 and 10 years) has a higher personal excellence than school head of high school who has short-term (less than 5 years) and longer term (over 10 years) work experience in education sector.

However, the overall evaluation results show that school head of high school who has less than 5 years of experience in working in the education sector and between 5 to 10 years, has a higher average score than school head of high school who has more than 10 years of working experience in education sector (Graph 23). This trend shows that school head of high school who has less than 5 years of working experience in the education sector and between 5 and 10 years of age has a higher personal excellence competence than school head of high school who have more than 10 years of working experience in the education sector (3.98 and 3.93). This means that school head of high school that has short-term or less than 5 years of experience and 5 to 10-years´ experience with a higher personal excellence competence than school head of high school with a long-term education experience (over 10 years). However, based on t-test analysis from school head of high school, non-teaching staff and teacher of high school showed no significant difference between school head of high school with short-term (less than 5 years) of teaching and medium term (between 5 to 10 years) and school head of high school with experience in the field of education over 10 years since the gap between the mean score is very small (for school head of high school is 3.74 and for non-teaching staff and teacher of high school is 3.96).



Graph 22. The Total period of work experience in education sector variables (evaluated by non-teaching staff and teacher of high school)



Graph 23. The Total period of work experience in education sector variables (overall evaluation)

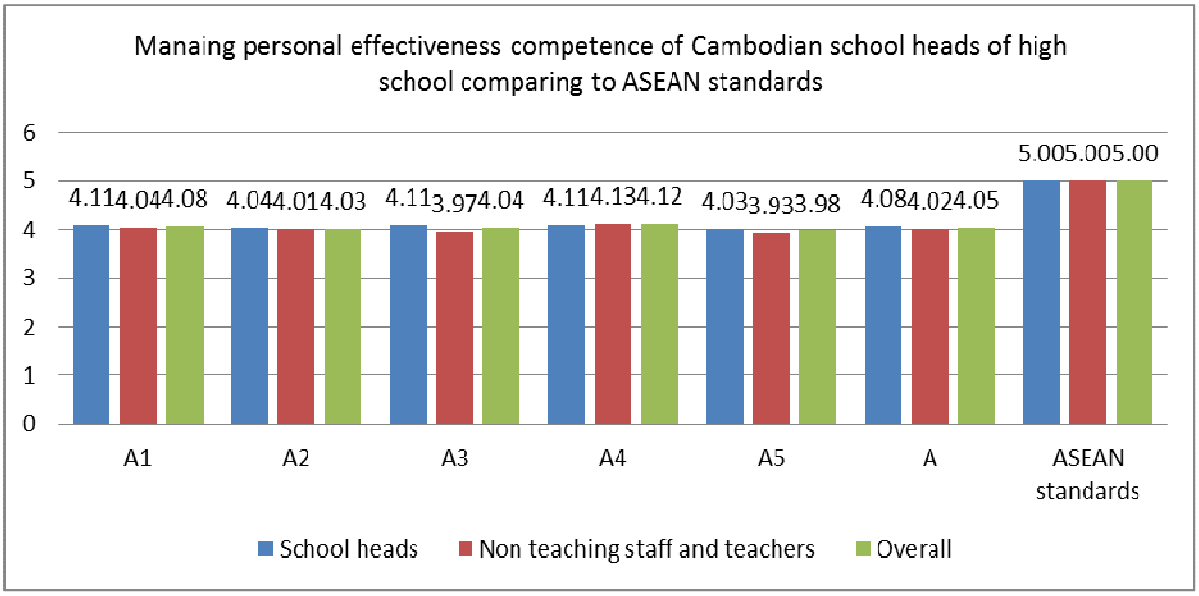
H. Managing Personal Effectiveness Competency of School Head of High School in Cambodia

Based on the competency standards on managing the personal effectiveness of school head of the high school of ASEAN, all school head must have five detailed enabling competencies, including leading by example, demonstrating transparency and accountability, practicing a balanced healthy lifestyle, taking pride in one´s profession, and delivering results.

In the 1-5 scale which is the standard of this research, self-evaluation of school head of high school scored an average score of 4.03 to 4.11, and as a result of the evaluation results by non-teaching staff and teacher of high school, school head of the high school is scored an average of between 3.93 and 4.13. This figure means that school head of high school´s enabling competency on managing personal effectiveness is lower than that of Southeast Asian school heads, and this competency is still the second issue of the three competencies of the personal excellence competence.

Graph 24 below shows that the personal effectiveness competency of school head of the high school is limited to 4.08, while the results obtained from non-teaching staff and teachers of high school have the similar level of competency as evaluated by school head of high school as 4.02. However, the enabling competency on delivering results is the lowest level of all five enabling competencies 3.93 (Graph 24). Based on this result, non-teaching staff and teachers of high school have thought that their school head of high school has a limited ability to disseminate results such as: aligning personal goals with organizational goals; setting targets and implement measures to achieve personal and organizational goals; staying focused on

achieving personal goals and objectives; taking calculate risks; and influencing others to contribute to the achievement of organizational goals. Overall, through both results above, the personal excellence competency of school head of high school in Cambodia on the ability to manage personal effectiveness is 4.05 compared to the ASEAN standard of school heads.



Graph 24. Level of enabling competency on managing the personal effectiveness of school head of high school (evaluated school head of high school, non-teaching staff, and teachers of high school)

Note *1-5 Likert scale measurement: 1=None, 2=Very Little, 3=Little, 4=Much, 5=Very Much.*

A: Managing personal effectiveness

A1: Lead by example

A2: Demonstrate transparency and accountability

A3: Practice a balanced healthy lifestyle

A4: Take pride in one´s profession

A5: Deliver results

The data from the open questionnaire on managing personal effectiveness indicates that the managing personal effectiveness of school head of the high school is at a limited level. This requires the school head of high school to have significant enabling competencies, including leading by example, demonstration transparency and accountability, practicing a balanced healthy lifestyle, taking pride in one´s profession, and deliver results. School head of high school demonstrated that leading by example is at a limited level by a number of activities, including demonstrating a strong belief that all children can learn, expressing and modeling professional ethics, values, and moral leadership, addressing areas for self-improvement and influencing the school population to follow own example. For the enabling competency of demonstration transparency and accountability, school head of high school also indicated limited due to lacking of inform stakeholders of his/her responsibilities and

report results, having not yet set a system of checks and avenues for feedback and communicate stakeholders to account for one´s work, and having not yet held oneself accountable for personal and organizational setbacks and shared learning points. In addition, school head of high school have not able to take their pride in their own profession and education staff, as they have not yet shown passion in demonstrating self-profession, self-confidence, self-optimism, and self-resiliency, and ability to accomplish tasks. These factors may be due to the inadequate dissemination of outcomes due to a lack of basis for setting personal goals, targets, objectives, exercising, calculating self-risks and organization´s responsibilities as a school head of high school, and lacking basic training in other people, especially the educational staff of their organization, to help achieve the goals of the organization.

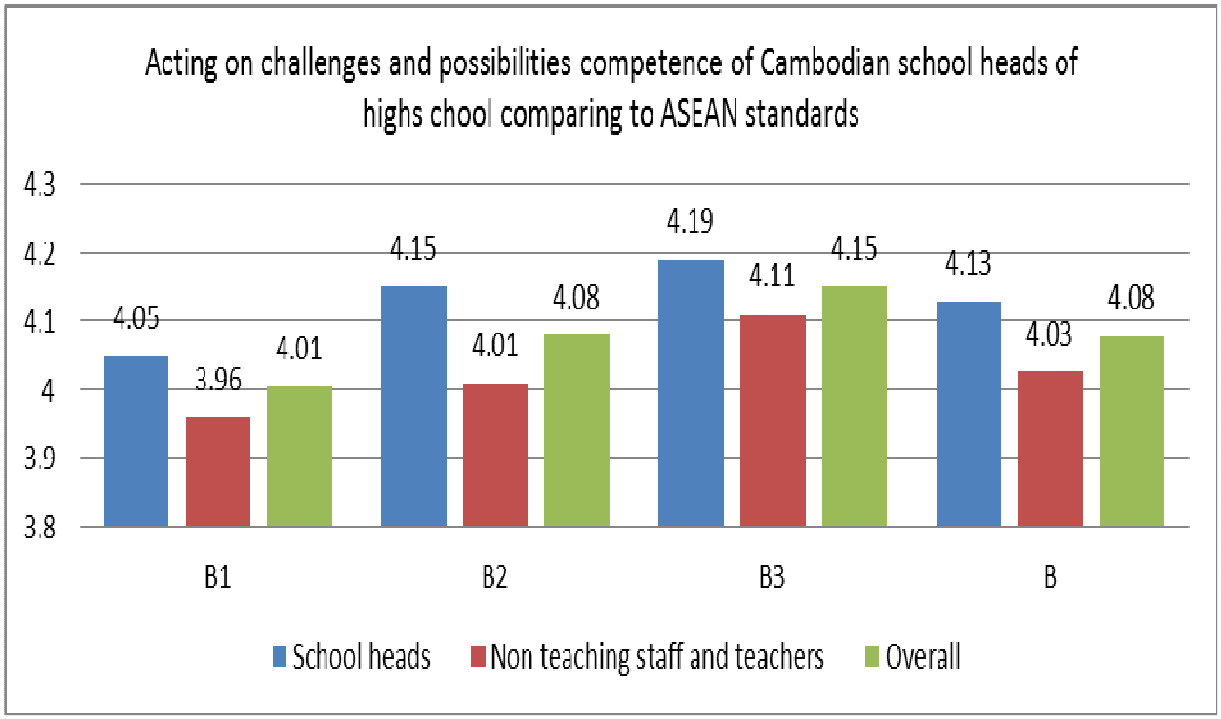
I. Competency in Acting on Challenges and Possibilities of School Heads of High School in Cambodia

Based on the competency on acting on challenges and possibilities of school heads of ASEAN standards, the school heads of high school need three enabling competencies, including the ability to manage priorities, exhibit decisiveness in addressing challenges, and exhibit an enterprising attitude.

In the 1-5 Likert scale which sets the standard for this research, the self-evaluation of school head of high school earn an average score of between 4.05 and 4.19, and as a result of the evaluations by non-teaching staff and teacher of high school, the school head of high school receive an average score of 3.96 to 4.11. This figure means that the competence of school head of high school in Cambodia is lower than that of school head standards in ASEAN, and this competency is still the third challenge among three competencies of the personal excellence of school head of high school in Cambodia.

The following graph 25 below shows overall that the competence of school head of high school on acting on challenges and possibilities is limited to 4.13, while the outcomes from non-teaching staff and teacher of high school show similar levels as evaluated by school head of high school 4.03. However, the enabling competency of school head of high school on management priorities was the lowest in all three enabling competencies, 3.96 (Graph 25). Based on this result, non-teaching staff and teacher of high school thought that school head of high school had a low competence on management priorities. This means that school head of high school has a lower or less competence on the three activities of management priorities, including demonstrating an understanding of what is important, what is not important, and what should be worked on; focusing attention on critical tasks and managing conflicting

demands; and using effective time management techniques and always be aware of timelines. Overall, through both data, school heads of high school in Cambodia has the competence to act on challenges and possibilities to 4.08 only compared to the school head standards in ASEAN.



Graph 25: Levels of acting on challenges and possibilities of school head of high school in Cambodia (evaluated by school head of high school, non-teaching staff, and teacher of high school)

Note *1-5 Likert scale measurement: 1=None, 2=Very Little, 3=Little, 4=Much, 5=Very Much.*

B: Acting on challenges and possibilities *B1: Managing priorities*

B2: Exhibiting decisiveness in addressing challenges *B3: Exhibiting an enterprising attitude*

The data from the open questionnaire on acting on challenges and possibilities shows that school head of high school does not have sufficient capacity to handle priority issues, although they clearly demonstrate the decision to identify challenges and entrepreneurship attitudes in their units. These factors can be attributed to the underlying level of knowledge, basic fundamental, and the management of priorities, time, using technics, capacity and availability resolution, and limited decision-making, even if they showed a meeting among his/her board of school head and educational staff.

J. Competency in Pursuing Continuous Professional Development of School Head of High School in Cambodia

Based on the competency on pursuing continuous professional development of ASEAN standards school heads, all school heads must have two

enabling competencies, including taking responsibility for lifelong learning and advocating ASEAN values and perspectives.

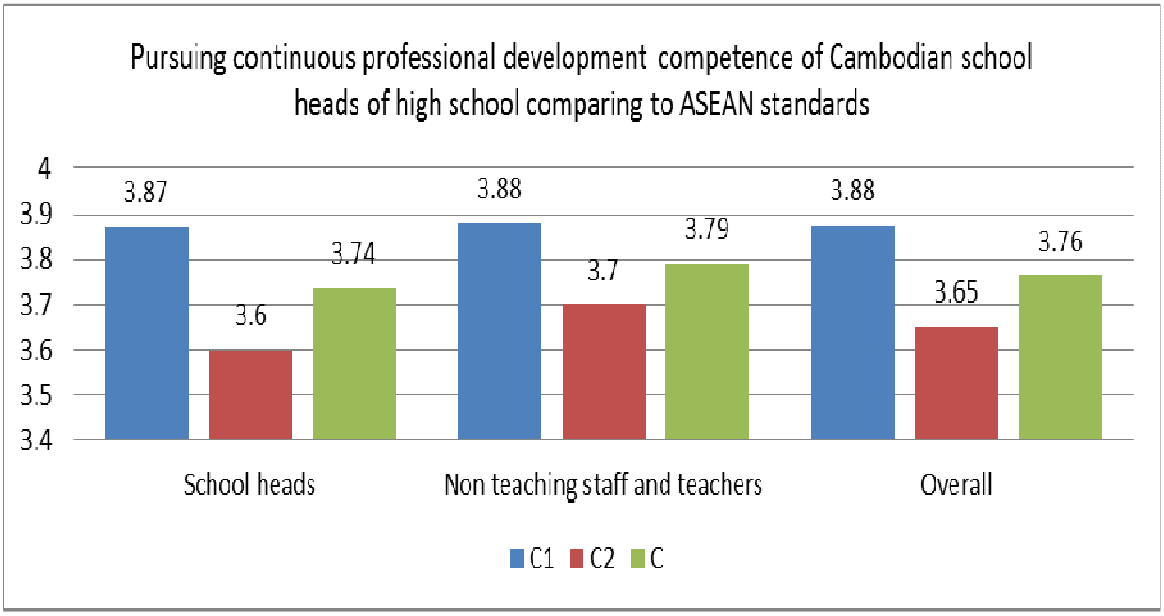
In 1-5 Likert scale which is the standard of this research, the self-evaluation of school heads of high school scored an average score of between 3.60 and 3.87, and as a result of the evaluation by non-teaching staff and teacher of high school, school heads of high school received an average score of between 3.70 and 3.88. This figure means that the competence to pursue continuous professional development is below the standards of school heads in ASEAN, and this competence is the most challenging of all three enabling competencies of the personal excellence of school heads of high school.

Graph 26 below shows overall that the competence to pursue continuous professional development of school heads of high school is limited to 3.74, while data obtained from non-teaching staff and teacher of high school has the same level as the self-evaluation by school heads of high school, 3.79. However, the competence to advocate ASEAN values and perspectives of school heads of high school in Cambodia is the lowest among the two enabling competencies of this section, 3.76 (Graph 26). Based on this result, non-teaching staff and teachers of high school thought that school heads of high school had a lower competence to support the vision and value of ASEAN. This means that school heads of high school in Cambodia little support ASEAN′s vision and values, which show in activities such as: demonstration understanding of the rationale behind the framework of ASEAN; sharing knowledge on policies in education in support of ASEAN integration; promoting multicultural understanding and respect for diversity; and development skills and values in using a language that connects the ASEAN region. Overall, through both data above, the overall results show that school heads of high school in Cambodia have the competence to pursue continuous professional development as low as 3.76 compared to ASEAN standards of school heads of high school.

The data received from the open questionnaire on the competence to pursue continuous professional development, indicating that school heads of high school is responsible for a lifelong learning and support the vision and value of ASEAN. This may be due to the fact that school heads of high school have learned and learned more over the weekend and during the long holidays of the academic year to improve their own qualifications and professional skills, and they are well aware of ASEAN′s vision and the ASEAN community.

In summary, on the basis of external data, the personal excellence of school heads of high school in Cambodia on the three main competencies, including competency to: manage personal effectiveness, act on challenges and

possibilities, and pursue continuous professional development compared to ASEAN standards school heads (3.97 : 5:00). Out of these three competencies, school head of high school in Cambodia has the competency to: manage personal effectiveness by 4.05, act on challenges and possibilities by 4.08, and pursue continuous professional development at 3.77. Graph 27 below shows levels of the three competencies.

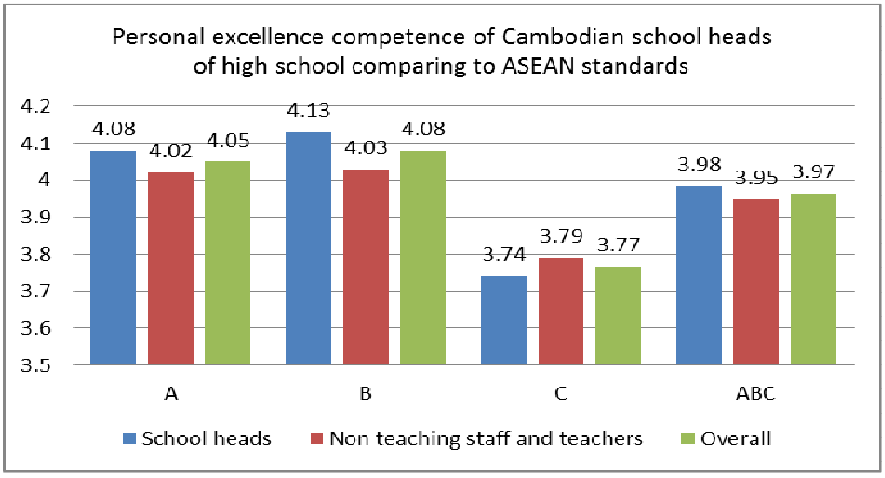


Graph 26: Levels of competency in pursuing continuous professional development (evaluated by school heads of high school, non-teaching staff, and teachers of high school)

Note *1-5 Likert scale measurement: 1=None, 2=Very Little, 3=Little, 4=Much, 5=Very Much.*

C: Pursuing continuous professional development *C1: Taking responsibility for lifelong learning*

C2: Advocating ASEAN values and perspectives



Graph 27: Levels of personal excellence competency of school heads of high school compared to ASEAN standards school heads (evaluated by school heads of high school, non-teaching staff, and teachers of high school)

Note *1-5 Likert scale measurement: 1=None, 2=Very Little, 3=Little, 4=Much, 5=Very Much.*

ABC: Personal excellence competency of school heads of high school

A: Managing personal effectiveness *B: Acting on challenges and possibilities*

C: Pursuing continuous professional development

4. Conclusion and recommendation

Although there are some concordances as mentioned above, it is still not possible to compare the maximum competency of the ASEAN standard. Therefore, the composition of roles and responsibilities of school heads and deputy school heads of high school in Cambodia are not yet guaranteed a reasonable standard.

The school heads, and deputy school heads of high school in Cambodia is likely to have no clear understanding of the personal excellence competency as in the roles and responsibilities as school heads and deputy school heads of high school, which requires three main competencies, including competence to manage personal effectiveness, act on challenges and possibilities, and pursue continuous professional development. Personal excellence competency that school heads have done is usually the practice of traditional or customary abilities. These factors may or may have been that some school heads have never received orientation training and professional training as school heads of high school or further training, yet they have not yet responded to practical leadership and system management requirements.

By analyzing through the independent t-test and One-Way ANOVA statistical analysis on all data, the results show that the male school heads of high school has a higher competency on personal excellence than the female school heads of high school head across all three competencies of the personal excellence, including managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development. The results also showed that school heads of high school who qualified with low and medium degree (just bachelor´s degree), has medium total period as in the current role as a school head of high school and medium total period of work experience in education sector between 5 to 10 years is more competence on personal excellence than school heads of high school who qualified with higher degree (master´s degree), has a shorter (less than 5 years) and a longer (over 10 years) period of total period as in the current role as a school head of high school and total period of work experience in education sector. In addition, the overall results also show that the school heads of high school in Cambodia has personal excellence competency on three competencies, including the competence to: manage personal effectiveness, act on

challenges and possibilities, and pursuing continuous professional development at a lower level by comparing to the ASEAN competency standards of school heads of high school (3.97:5.00).

Professional Orientation and vocational training to school heads of high school on personal excellence that focuses mainly on managing personal effectiveness, acting on challenges and possibilities, and pursuing continuous professional development, should be implemented to improve the effectiveness of high school management and the quality of education as the school heads of high school is the permanent administrator of each high school. Orientation and training on these three fundamentals will promote policy implementation and strengthen competencies, capacities, and responsiveness, as well as improve the good relationships and consistency between leadership, management, teaching, learning, internal inspection and external inspections. Additionally, the training on personal excellence to school heads of high school will enhance the personal potential and professional, self-change, the skill of leadership, clever decision, effective collaboration, attitude as a school head of high school, achieving goals and self-management.

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The effects of nonspecialized subject teachers on achievement of high school students in Cambodia

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Abstract

This research will find out the effects of nonspecialized subject teachers on the achievement of their Cambodian high school students. The study covered seven subjects such as Mathematics, Physics, Chemistry, Biology, Earth and environmental science, Khmer literature and History, which are the main majors that the Ministry of Education, Youth and Sports as well as the developed countries in region and the world always pay attention on. The data collected from the school leaders, teachers and students, through the six-major tests, questionnaires, interviews, and other references were used to analyze to find out the effects nonspecialized subject teachers on student achievement. Overall results showed that there was no significant difference in ability between the students learning with nonspecialized subject teachers and the specialized subject teachers *(p>0.05).* Therefore, nonspecialized subject teachers were not likely to affect the student's achievement in mathematics, science, and history.

Keyword: nonspecialized subject teachers are teachers who are teaching the subjects that they have never learned, neither first nor second major.

1. Introduction

Ministry of Education Youth and Sports has reformed many times for strengthening the quality of education that is aligned to the global educational trends of the world and the region to achieve the Millennium Development Goals. At the same time, the Ministry of Education, Youth and Sports has launched 15 reforms, among this has one point that talking about the reforming of high school National Exam and enhancing teacher capacity through short-term training (MoEYS, 2014). In 2016, the Ministry of Education, Youth and Sports has created and promoted science, engineering, and mathematics, called STEM (Science Technology Engineering and Mathematics), to Junior high school, high schools and University in the country. However, the quality of education is not good enough. According to the result of general secondary education (មធឋ, 2016 & 2017), show that the

result of high school national examination in 2015, students selecting Science stream got average score only 25.92% on mathematics, 61.15% on Physics, 56.92% on Chemistry and 44.84% on Biology, with only 50% of students passing the exam. By 2017, the students choose science stream passed the national exam only 53.40%. Isikoglu, Basturk and Karaca (2009) show that teachers in system are lacking between believable and implementation. At the same time, for students to achieve good achievements, teachers need to have specialized knowledge, pedagogics and specialized skills in transferring the knowledge to the student (TTD, 2011). According to Elkind´s guidance (2004), Educational reform in constructivism can be successful, depend on three factors: Teachers, curriculum, and social. Teaching with nonspecialized major affects student achievement because teachers do not have sufficient knowledge of different specialties. The reasons why the teachers teach the nonspecialized subject because some subjects are surplus teachers but other are shortage, the surplus teachers help to teach the major that is lacking of teachers, then some teachers were forced to teach dissatisfaction, therefore, the result of teaching is not good. On the other hand, students do not understand what teachers explained, they felt boring and do not want to learn this subject. Based on research result of Mr. Set, 2016 show that 70% of high school conduct research, there are not enough teachers to teach the right major especially high schools are in rural area because Ministry of Education Youth and Sport or Provincial office of Education do not provide teachers as the school needed. On the other hand, teacher qualifications decided to transfer to another school in urban area. In this case, school directors decided to use the wrong major teachers. On the other hand, curriculum of some universities provide only on major from year one to year 4 but some subjects provide a semester or two semesters those subjects are related to that subjects (RUPP,2017). On the other hand, National Institute of Education from 2002 to 2010 teacher training has two subjects: first specialist subject is the main subject that studied at university and second specialized subject is related to the the first subject, for example first specialist subject is mathematic and second subject is physics, khmer literature is first specialist and second specialist is English literature, and first specialist is biology and second is chemistry (NIE,2010). The new teachers do not have enough capacity to teach nonspecialized major. Therefore, some high school in Cambodia are using the nonspecialized subject teachers that affect to the student achievement, then the learning outcome is not high because those teachers are limited capacities and they cannot explain the content deeply. The objective of this

research is to response to the problem above, this research has to find out the reasons in teaching nonspecialized subject that is effective on high school student achievement in Cambodia. To achieve the objective above, this research are focus on:

1. To find out the number of teachers and subjects that is teaching nonspecialized subject at high school (analysis of the province´s size in percentage)
2. To compare the student achievement studying with nonspecialized subject teacher and specialized subject teacher (find out the different score and find the relationship between student scores and teacher abilities)
3. To find the challenge of teachers that teach nonspecialized subject.

This research focuses on the student achievement from student test that study with specialized subject teachers and nonspecialized subject teachers at high school and the challenge of high school teachers in Mathematics, Physics, Chemistry, Biology, Earth Science and Environment, Khmer literature and History. This identification because of research team find out that Mathematics, Physics, Chemistry, Biology, Earth Science and Environment, Khmer literature and History are the major that must to take the National Exam on grade 12 and these majors are the main major to get the skills at university.

2. Research methodology

2.1. Research tools

There are 4 types of research tools used to collect the information from School Pricipals, nonspecialized teachers and students such as: (1) Questions with closed answers for testing the students´ knowledge over a semester of studying on Chemistry, Physics, Biology, Earth and Environmental Science, Mathematics, Khmer Literature, and History. (2) The questionnaire for students to evaluate the teachers are teaching differently of own subject (Nonspecialized subject) and teachers are teaching on their own subject (Specialized subject) which are both will be comparing the capability and methodology of above teachers. (3) The questionnaire for asking the nonspecialized high school teachers to find the challenges, solutions, and suggestions. (4) The questionnaire for high school Principal to indentify number of nonspecialized teachers, challenge, solutions, and suggestions. Besides of that, the students´ score data in first semester have been collected to compare the students´ knowledge to over view of their studied with above teachers, nonspecialized and specialized subject teachers.

2.2 Samples

The sample of this research were randomly selected such as: nonspecialized teacher of Chemistry, Physics, Biology, Earth and Environmental Science, and History in

totally 35 teachers, high School principals were 14, students were learning with nonspecialized and specialized subject teacher from grade 10 through grade 12 in totally 448 students.

2.3. Locations and times

The research started from March to August, 2017 by choosing the high schools in four essentail provinces such as Battambang and Kom Pot are representative of largest province, Koh Kong and Takeo are represetative of smallest province in Cambodia.

2.4. Data analysis

The analysis functions for quantitative data and software qualifications IBM SPSS V.24 as One-Way ANOVA, correlation, crosstabs and frequencies have been used in comparative to find out the relationship and the percentage of variables in this research. Data analysis does not take into account the gender, age, and location of the school.

3. Result of the study

The results from this study are separated into 3 main sections. First section is the result of students´ test and teacher evaluation of each subject. Second section is the result of teacher survey. And finally, the third section is the result getting from school management survey.

3.1. The Result of students´ test and teacher evaluation of each subject

This study found the nonspecialized teachers who are teaching chemistry, physic, biology, earth and environmental science, and history at the selected upper secondary schools. However, math and Khmer nonspecialized teachers had not been appeared in this study. Therefore, the following description will be only about the issued related to the five majors including chemistry, physic, biology, earth and environmental science, and history.

3.1.1 Result of test on chemistry subject

Table 1. Result of test on chemistry subject

Results of Test on Chemistry Subject							
	N	Mean	Std. Dev	Min	Max	Sig.	Pearson Correlation
Specialized teachers	20	6.00	2.15	3.00	11.00	0.10	0.26
Nonspecialized teachers	20	7.20	2.35	2.00	10.00	p > 0.05	
Total	40	6.60	2.31	2.00	11.00	(No Correlation)	

Twenty students who studied with nonspecialized chemistry teachers and other twenty students who studied with specialized chemistry teachers were selected to do a short test and evaluate their teacheing performance. As result shown in table1, students who studied with specialized chemistry teachers got maximum score one mark higher, than those students who learned with nonspecialized chemistry teachers, but the mean score of the first group is 1.2 marks lesser. However, based

on ANOVA analyzis, there is no significant difference between the two groups (p>0.05). On the other hand, based on the weak correlation (r = 0.26) of students´ view on teacher´s performance and student capacity proves that transfering of chemistry knowledge from chemistry-nonspecialized teacher did not influence on student achievement.

3.1.2 Result of test on biology subject

The number of cohort for biology subject is similar to that of chemistry subject. It is noticed that the mean score of students who learned with specialized biology teachers is equal to those who learned with nonspecialized biology teachers, and the students who learned with nonspecialized teachers got maximum score one marks higher, but had wide standard deviation, see table 2.

Table 2. Result of test on biology subject

Results of Test on Biology Subject							
	N	Mean	Std. Dev	Min	Max	Sig.	Pearson Correlation
Specialized teachers	22	5.86	1.36	4.00	9.00	0.94	-0.01
Nonspecialized teachers	22	5.82	2.44	1.00	10.00	p > 0.05	
Total	40	5.84	1.95	1.00	10.00	(No Correlation)	

The result also showed that there is no significant difference in achievement between the group who learned with specialized biology teachers and another group who learned with nonspecialized biology teachers, too (p>0.05). Likewise, transfering of biology knowledge from nonspecialized biology teachers did not influence on student achievement, too (r = -0.01).

3.1.3 Result of test on physic subject

A total of 64 students who learned with nonspecialized and specialized physics teachers were randomly selected to test their knowledge and evaluate their teachers´ performance. Result in table 3 shows that students who studied with specialized physic teachers got maximum score one mark lower than those students who learned with nonspecialized physic teachers, but the mean scores of the two groups are relatively similar.

Table 3. Result of test on physic subject

Results of Test on Physics Subject							
	N	Mean	Std. Dev	Min	Max	Sig.	Pearson Correlation
Specialized teachers	32	5.13	2.31	2.00	9.00	0.95	-0.01
Nonspecialized teachers	32	5.09	1.94	3.00	10.00	p > 0.05	
Total	40	5.11	2.12	2.00	10.00	(No Correlation)	

The result showed that there is no significant difference in achievement between the two groups (p>0.05), and the transfering of physic knowledge from nonspecialized physic teachers did not influence on student achievement, as well.

3.1.4 Result of test on earth and environmental science subject

The samples of students selected for this subject were 212 more than those of

other subjects because there were more teachers who were teaching the subject.

Table 4. Result of test on earth and environmental science

Results of Test on Earth and Environmental Science Subject							
	N	Mean	Std. Dev	Min	Max	Sig.	Pearson Correlation
Specialized teachers	107	6.68	2.23	1.00	13.00	0.00	0.231**
Nonspecialized teachers	105	5.63	2.23	1.00	11.00	p < 0.001	
Total	212	6.16	2.29	1.00	13.00	(Has Correlation)	

Unlike the result of other subjects described earlier, the study found that the capacity of students who learned with nonspecialized teachers were significantly lower than those who learned with the specialized teachers ($p<0.01$), and teaching with nonspecialized earth and environmental science also afffected students´achievement, see table 4.

3.1.5 Result of test on history subject

This cohort as totally 88 students becoming the second largest samples after earth and environmental science subject. This was because there were second largest number of nonspecialized teachers in the subject, too.

Table 5. Result of test on history subject

Results of Test on History Subject							
	N	Mean	Std. Dev	Min	Max	Sig.	Pearson Correlation
Specialized teachers	44	6.66	2.17	2.00	11.00	0.006	0.29**
Nonspecialized teachers	44	7.95	2.16	3.00	12.00	p < 0.01	
Total	88	7.31	2.25	2.00	12.00	(Has Correlation)	

This study found a strange result that students who learned with the nonspecialized history teachers got maximum score significantly higher that those students who learned with the specialized history teachers ($p<0.01$). On the other hand, it was proved the transfering of historical knowledge from nonspecialized history teachers did not influence on student achievement.

3.1.6 Overall result of test score

Although the instruction of some nonspecialized teachers among the five subjects affected students´ achievement, for overall result shown in table 6, there was no significant different between the achievement of the students who learned with the specialized and the nonspecialized teachers ($p>0.05$). And, teaching nonspecialized subjects seem not to affect student achievement who studied science and history ($r= -0.03$, no correlation).

Table 6. Overall result of test for the five subjects

Results of Test on All Subject							
	N	Mean	Std. Dev	Min	Max	Sig.	Pearson Correlation
Specialized teachers	225	6.32	2.21	1.00	13.00	0.510	-0.03
Nonspecialized teachers	223	6.17	2.42	1.00	12.00	p > 0.05	
Total	448	6.24	2.31	1.00	13.00	(No Correlation)	

3.1.7 Result of Teacher Evaluation

Students thought that nonspecialized teachers had as same teaching capacity as

specialized teachers with the range of score from medium to fairly good (p>0.05). Capacity of teacher related to using clear voice, giving assignment, using teaching material, and explaining of lesson content.

Table 7. Questions related to capacity of teachers

Results of student views on teacher capacity						
	Questions	Q.4	Q.9	Q.14	Q.15	Mean
Specialized or Specialized subject	Pearson Correlation	.123**	-.097*	-.150**	-.217**	-0.042
	Sig. (2-tailed)	0.010	0.040	0.002	0.000	0.379
	N	445	447	445	443	448.000
Q.4: Teachers had clear voice						
Q.9: Give assignments						
Q.14: Teachers used teaching materials in class						
Q.15: Teachers had never explained wrong leasson contents						

3.2 Results of Survey on Nonspecialized Teachers

Thirty-five nonspecialized teachers were randomly selected to answer questionnaires, in which female teachers were 37%. The result shows that Battambang province had the largest number of nonspecialized teachers (40%), followed by Kohkong (31.43%), Takao (17.14%), and Kampot province had the smallest number just 11.43%. For subject that had the largest number of nonspecialized teachers was earth and environmental science (about43%), then history (20%), and other three science subjects share similar percentage (less than 15%). On average, nonspecialized teachers had experience five years of teaching the nonspecialized subject, however they used to teach their specialized subjects about six years (See figure 2 and figure 3). The results on figure 4 also shows that about 50% of nonspecialized teachers did not prefer to teach nonspecialized subjects and just about 10% of them stated that they loved to teach the nonspecialized subjects. About 87% of teachers replied that their schools had library, 34% of them said the schools had laboratory, and 66% of them stated that they had never used resource schools. They also told that 14% of them had a lot of teaching materials, 71% had some teaching materials, and about 15% did not have any teaching material.

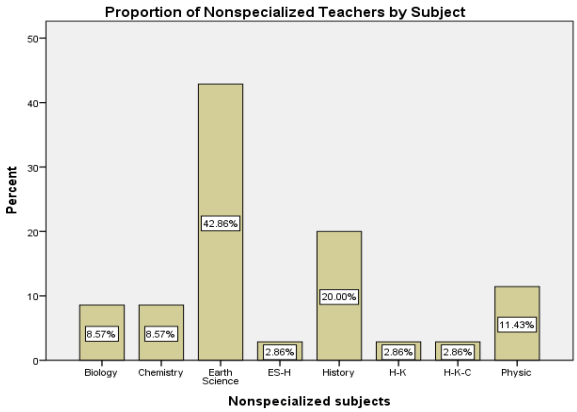

Figure 1. Percentage of nonspecialized teachers by subject

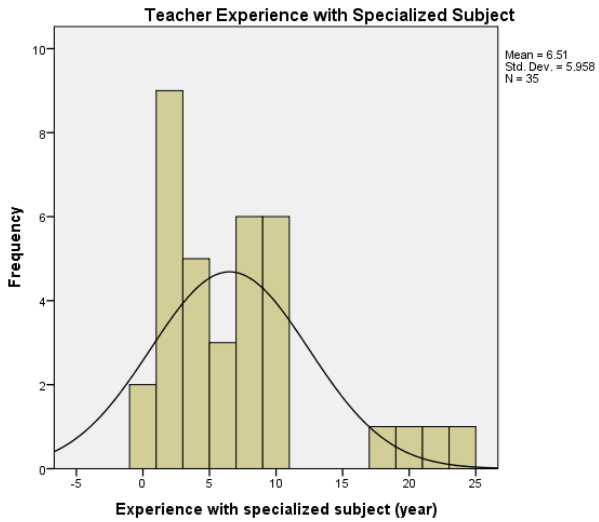

Figure 2. Experience and percentage of specialized subject teachers

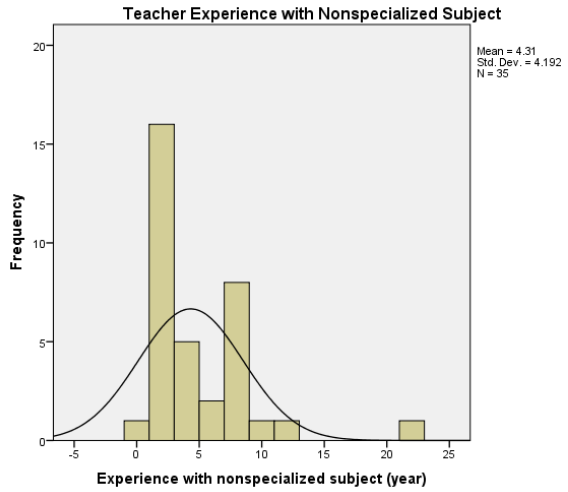

Figure 3. Experience and percentage of nonspecialized subject teachers

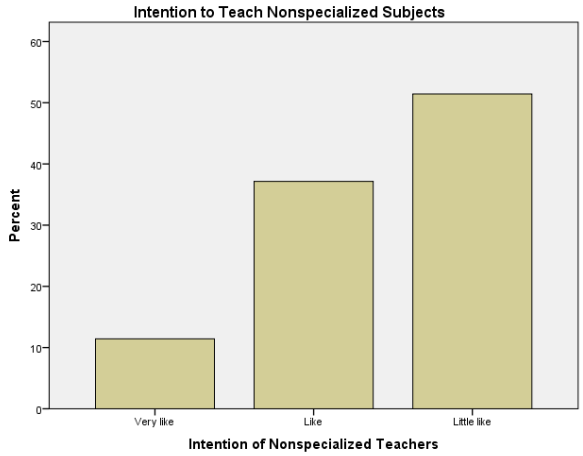

Figure 4. Percentage of nonspecialized teachers´ intention

3.2.1 Constraints and solutions of nonspecialized subject teachers

Many constraints had been found among 35 nonspecialized subject teachers:

- Did not understand some technical terms.
- Did understand some lesson contents
- Had limited subject knowledge
- Insufficient of lesson plans
- Had limited pedagogy knowledge
- Lacked of resources and teaching materials
- Had difficulty in doing experiment
- Did not interest students
- Problems in textbook (wrong content, short, …)

To solve the above constraints, nonspecialized subject teachers seek for different solutions as shown in table 7. Asking colleagues, self-searching, and asking teacher trainers at NIE were the solutions that nonspecialized subject teachers mostly did.

Table 7. Solutions of nonspecialized subject teachers in their teaching

Solutions of Nonspecialized Teachers	(%)
Ask colleagues	2.9
Ask colleagues and teacher trainers	2.9
Ask colleagues, teacher trainers, and self-searching	11.4
Ask colleagues and self-searching	40
Ask colleagues, self-searching, and teaching unclearly	2.9
Ask colleagues, self-searching, and skip teaching	2.9
Ask colleagues and teaching unclearly	2.9
Ask teacher trainers	2.9
Ask teacher trainers and self-searching	11.4
Self-searching	8.6
Self-searching and teaching unclearly	2.9
Self-searching and use lesson plans of others	2.9
Self-searching and ask other subject leaders	2.9
Teaching unclearly	2.9
Total	**100**

3.2.2 Confirmation of teaching capacity and suggestions of nonspecialized subject teachers

Although nonspecialized subject teachers had a lot of problems in their teaching, most of them (50%) responded they had enough and fairly-enough ability to teach their students (See figure 5).

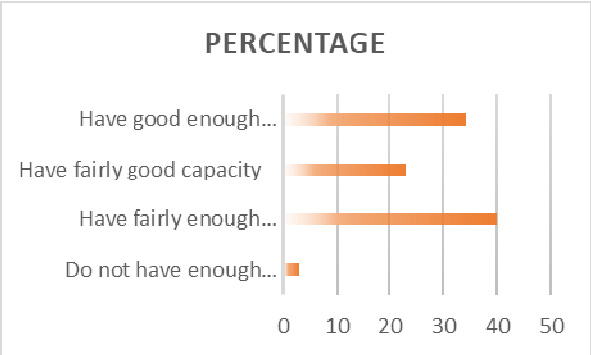

Figure 5. Teachers´ confirmation on their teaching ability. Percentage of nonspecialized teachers´ intention

Last but not least are suggestions of nonspecialized subject teachers listed as following:

- They suggested to train on nonspecialized subject knowledge, using and producing teaching materials, and on new teaching methodology more often and longer time.
- Provide enough teaching resources and teaching materials.
- Ministry of Education should make connection of lessons from grade 7 through grade 12 in order for students easy to understand.
- Train lower secondary school teachers to have high capacity enough in order to solve problem of when lacking of teachers
- Requested to have exam for all subjects
- Wanted to change to their main subject
- Did not want to teach their main subject

3.3 Results of survey with school leaders

3.3.1 Teacher Need and Solutions of School Leaders

Based on the survey with school leaders from the four provinces, Koh kong province did not need more physic teachers but other three provinces such as Battam Bang, Kampot, and Takeo shared the same percentage (33%) to recruit more physic teachers. In order to solve the problems of limiting physic teachers, school principals let nonspecialized subject teachers such as Math teachers, lower secondary school teachers, second-major physic teachers, and encourage specialized physic teachers with extra income to teach physic subject.

For chemistry subject, Takoe province needed 38% of chemistry teachers, Koh kong and Kampot needed the same amount of teachers (25%), and Battambang province just needed 13%. In order to solve the problems of lacking chemistry teachers, school leaders asked vice school principals, IT teachers, Chemistry-physic lower secondary school teachers, biology high school teachers, and encourage specialized chemistry teachers with extra income to teach chemistry subject.

Then for biology subject, Takoe province needed 43% of biology teachers, Koh kong needed 29%, and Kampot and Battambang province just needed the same amount of biology teachers (14%). In order to solve the problems of lacking biology

teachers, school leaders asked biology lower secondary school teachers, math high school teachers, chemistry-physic lower secondary school teachers and encourage specialized biology teachers with extra income to teach biology subject.

For Earth and environmental science subject, Takoe province needed 53% of Earth and environmental science teachers, Takoe needed 20%, and Kampot and Kohkong province just needed the same amount of Earth and environmental science teachers just 13%. In order to solve the problems of lacking Earth and environmental science teachers, school leaders requested lower secondary Earth and environmental science teachers, nonspecialized history-geography high school teachers, high school chemistry teachers, and encourage specialized biology teachers with extra income to teach Earth and environmental science subject.

Lastly, for history subject, Battam bang province needed 33% of history teachers, and Takoe, Kampot and Kohkong province needed the same amount of history teachers just 22%. In order to solve the problems of lacking history teachers, school leaders requested lower secondary school history teachers, nonspecialized high school math teachers, and encourage specialized biology teachers with extra income to teach history subject.

3.3.2 Leaders´ Views on Good Points and Improving Points of Nonspecialized Subject Teachers

School leaders reported that nonspecialized subject teachers had many good points as listed in table 8 below.

Table 8. Leaders´ views on good points of nonspecialized teachers in their schools

Good Points of Nonspecialized Teachers
W: High willingness to teach students
R: Active in searching for new knowledge
OS: Outstanding with their nonspecialized subjects
PR: Promise to be able to teach
WP: High responsibility in their work
CH: To fullfill teaching periods (16h/weak)
LE: Have long experience of teaching
ASK: Ask speicalized teachers and head subject leaders
L: Have lesson plans
AB: Have administraive teaching books
REP: Demonstrate experiments
T: Respect time (Punctual)

Among those good points, being active in doing research, willingness to work and consciousness in working were good points that most school leaders raised.

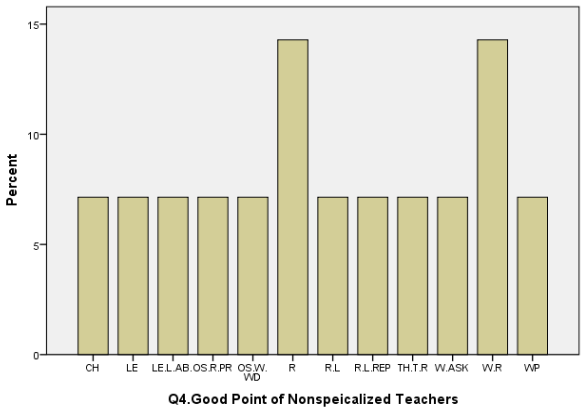

Figure 6. Proportion of good points of nonspecialized subject teachers.

Although nonspecialized teachers had many good points, school leaders stated that they still need to improve some points as illustrated in table 9 and building their capacity was the main critical point that most school leaders requested (see figure 7).

Table 9. Leader views on improving points of nonspecialized teachers

Points to improve of nonspecialized teachers
TR: Provide technical training
DO: Provide document orientation for the subject
S: Support by MoEYS
SK: Build up broader skills
R: Active in searching knowledge
WR: Do not send teachers to schools that already have enough teachers
TH: Work harder
GT: Don't give off teaching

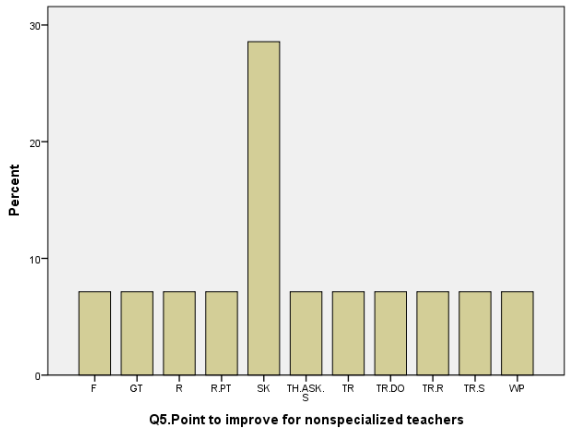

Figure 7. Proportion of improving points of nonspecialized teachers

3.3.2 Supporting Nonspecialized Teachers and Suggestions of School Leaders

Nonspecialized teachers usually faced a lot of constraints and challenges in their instruction. However, school leaders always supported the teachers to make sure their instruction run smoothly. Table 10 shows activities that school leaders did to help their nonspecialized teachers. And among those activities, providing documents and encouraging teachers to conduct self-research were the two most frequent actions that school leaders like to do.

Table 10. Activities of school leaders to help nonspecialized teachers

Supporting of Nonspeicalized Teachers
MO: motivation by OT fee
EW: Encourage their willingness
A: Admire teachers
PD: Provide documents
MR: Motivate in research
SP: Support teachers
MT: Encourage to have regular technical meeting
F: Follow up more teaching observations
PM: Provide teaching materials
CL: Check lesson plans and give comments to improve
PT: Do moc lessons
SD: Adjust schedule

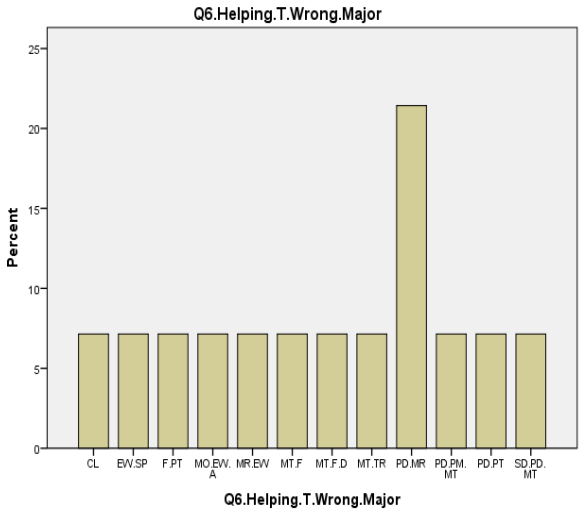

Figure 8. Proportion of activities that school leaders did to help nonspecialized teachers

Lastly, school leaders suggested the following six points illustrated in below table 11.

Table 11. Suggestions of school leaders for nonspecialized teachers

Suggestions from School Leaders
TR: Provide technical training for nonspecialized subject teachers
UL: Upgrade Level of nonspecialized teachers
FT: Increase more fast track teacher trainings
TRN: Provide inservice teacher training with school need
SP: Strong support nonspecialized teachers
NM: Change major of teachers to the nonspeicalized major

As shown in figure 9, most school leaders requested to have professional training for nonspecialized subject teachers while others suggestions shared similar percentage.

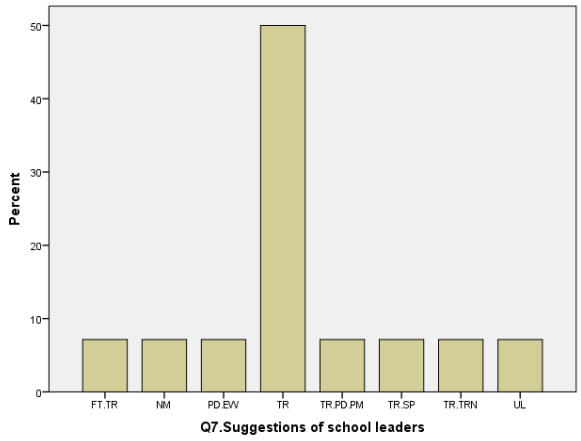

Figure 9. Proportion of suggestion made by school leaders to improve the quality of nonspecialized teachers

5. Conclusion and suggestion

The teaching of nonspecialized subject teachers seems not to influence student achievement that learn science subjects and history subject, excepted earth and environmental science. Few nonspecialized subject teachers claimed that they could not teach (less than 5%) and most of them could do self-searching, exploring, and discussion with specialized teachers whenever they meet the difficulties. There were no nonspecialized mathematics and Khmer subject teachers have been found in this study and the subject that had a lot of nonspecialized teachers was Earth and Environmental Science.

The reasons why students learning with nonspecialized subject teachers got higher score such as self-study and had tuition with specialized subject teachers, teachers focus on further research, have conscientious and passion for learning and benefits, main subject have connecting to nonspecialized subject, school principal and subject leader were always supporting and encouragement. The reason of students can be learning with wrong subject teacher and get high score same as the student learning with a specialist teacher because of their study hard, teacher focus on further research, have conscientious and passion for learning and benefits, the original subject related to the wrong subject, school principal take more attention with those teacher and subject leader are always supporting and encouragement also same. Otherwise, the reason for the students to learn with the teachers in wrong subject is getting the lower scores include some skilled of teachers have

only basic knowledge, Junior high school teachers, lack of participation, encouragement, supporting, and cooperation from the school principal and the technical team leader.

The school principal encourages teachers with wrong subject by providing documentation, encourages to take attention with more research, and most often ask for frequent specialized teacher training.

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Higher educational choice decision of high school students in Cambodia

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Abstract

This research highlighted the factors affecting recruitment of specialists for continuing higher education. The study focused on 12th grade students studying in accademic year 2016-2017, which are under the care of the Ministry of Education, Youth and Sport of Cambodia, as well as regional and global countries. Therefore, recruitment of specialists for continuing higher education is very important to them because it has affected their full potential for future work. Moreover, understanding the selection of skills and the factors influencing college-level decision-making are important for the Ministry of Education, Youth and Sports to have the capability and capacity to expand education reform programs in higher education institutions. Given the above importance, the topic of "Higher Educational choices decison of high school student in cambodia" was studied with three main purposes: 1) Determine the key factors influencing the decision-making on the recruitment of higher education for grade 12 students (2) Determine the continuing pursuit of higher education programs that 12th graders choose and (3) Compares the pursuit of higher education selected between grade 12 students in urban and rural areas. 12th grade high school students studying in the 2016-2017 academic year were selected from the 5 provinces and cities as representative cities and provinces (Phnom Penh, Kompong Cham, Takeo, Svay Rieng and Sihanoukville). Two high schools located downtown areas and two in rural areas were selected and 10 of grade 12 students from each selected high schools were selected to complete a questionnaire. Research results showed that the subjects that students enjoy most at high school are Khmer and Mathematics, with the largest percentage upto 27.2% and 23.8%, respectively. All students who have made the initial decision to choose their major for higher education level were students who are at the graduate level: high school 71%, secondary school 20.2% and primary 6.5 %. In addition, the postgraduate study major that students have recruited are up to 37 professions: Medical, Engineering, Law, Manergment, Administration, Information of Technology, Accounting, Khmer literature, Mathematics, Physics,

Chemistry, Biology, Geography, History, Languages, Agriculture, Banking, Electricity, Tourism, Marketing, International business, Financial and Architecture. Of which, medical professionals were the highest percentage accounted for 11.7% and followed by engineering (7.9%). The most factors affecting students' decision-making are financial support, scholarships, Job, mother or father's guidance, and university fee (Average > 4.0; 4 is good and 5 is very good). In addition, mother or father´s guidance, available accommodation, university tuition, the scholarship, and job have had a significant impact on rural students compared to students in the downtown area (sig <0.05).

Keywords: Major, Higer education, Influence factors, Grade 12 students

1. Introduction

In the 21st century, the concept of global education has shifted from an economic society based on a labor force to a society based on knowledge and only quality education can build human capital which can help to develop society on all sectors. At the same time, the ASEAN Community (2015) focuses on the economic community, including the flow of service, labor force and human resources. Currently, the Royal Government of Cambodia is paying close attention to the education sector, which is one of the cornerstones of the Third Rectangular Strategy, focusing on training human resources to be fully capable of ethical, professional, and well-being aimed to reduct poverty and national economic development based on literated society and prosperity. In response to global and regional education trends, the Royal Government of Cambodia has introduced a rectangular strategy in which the fourth focuses on capacity building and human resource development, especially young people to become full citizens (knowledge, skills and behavioral) with professional and good communication, especially a shared culture, contributing to promoting National Economy (Samdech Akka Moha Sena Techo HUN SEN). The Royal Government of Cambodia is ambitious to move from low to a middle-income country by the year 2030 and to become a developed country by 2050. Cambodia's present and future economic growth and competitiveness to achieve this ambition depends on the ability of Cambodians to take appropriate knowledge and relevant skills that can reflect the nation's cultural and moral heritage. Education plays an important role in contributing to national development (MoEYS, 2014). Children, youth and adults need a lifelong learning and education that is relevant and responsive to the needs of high-quality job markets. The educational opportunities should focus on capacity building and giving every student the opportunity to gain specialized skills and specialties in order to achieve the develpoment that are fully beneficial to the Cambodian people of all

ages and area. The Ministry of Education, Youth and Sports will prioritize the provision of high quality and equitable basic education services. The Education Strategic Plan 2014-2018 also focuses on expanding early childhood education, increasing access to quality secondary and post-secondary education as well as expanding informal education and technical education.

Number of schools and universities in Cambodia has grown dramatically over the last few decades. Primary and secondary schools are built throughout the country to support the educational process for children, especially in rural areas. In Cambodia today, there are 119 higher education institutions, of which 46 are public higher education institutions and 73 are under private (Guide, tertiary education, 2016). However, there are still college graduates who can not find a job while other students work differ from their skill and some with their skill after they have graduated from the university. Others have returned to business with their parents at home after years of studying. These problems are caused by a variety of factors. According to Peou (2017), this is due to most students do not choose the right majo for. For example, many high school students have chosen the skills necessary for public service work such as banking, marketing, and accounting, since they did not properly try to understand the needs of the current labor market, which led them to be unemployed after they graduated. In addition, the quality of graduates also affects employment opportunities (Chen et al., 2007; Peou, 2013). Students should make sure they spend the necessary time on basic education before they blame the job market. Most high school graduates still have a frivolous decision regarding to recruitment to pursue higher education in both public and private higher education institutions to meet the needs of the job market in society. In addition, courses study and skills should also be developed to meet market demand. On the other hand, many universities in Cambodia provide a limited major selection for students compared to universities abroad (World Bank, 2010, 2012).

Every year, high school students face the challenge of deciding on their futrue career choices (Niu and Tienda, 2008). There are many factors that affect the final decision when student finished their high school while they have uncertainty in decision making about future academic requirements and incoming. College enrollment decisions have become increasingly complex during the last 30 years (James et al., 1999; Hoxby, 2001). Professional selection is an important part of youth and this career choice will affect them for the rest of their lives. In addition, the students are complicated and difficult to make choices in choosing college major. Having seen the above problem, therefore, a study on "Higher educational choice decision of high school students in Cambodia" has been investigated.

The above study has three main purposes:

1. Determine the key factors influencing decisions making to pursue higher education of grade 12th students.

2. Determine the skills of continuing higher education which grade 12th students have chosen.

3. Comparing the pursuit skill of higher education chose by grade 12th students between urban and rural areas.

To achieve these objectives, this research focuses on the following research questions:

1. What are the factors influencing on decisions making in choosing major to pursue higher education of grade 12th students?

2. What are the major for continuing higher education which grade 12th students have decided to choose?

3. How different between urban and rural student in choosing their major for higher education?

2. Research Methodology

2.1. Samples and sample collection

Sample were grade 12 students who are studying in 2016-2017 accademic year. 5 provinces-capital were selected as representative. Each selected province is a province with universities located in different parts of Cambodia including: 1. Phnom Penh is a major economic zone 2. Kampong Cham represents the central region 3. Svay Rieng represents the southeastern region 4. Takeo province represents the southwestern region and 5. Sihanoukville represents southwestern coastal area. However, the selection of provinces from these different regions is aimed at getting the representatives of the data for the whole of Cambodia. The study is not intended for comparison between provinces, provinces, regions and regions. The study is not intended for comparison between provinces and provinces or regions and regions. Two high schools were selected from downtown and two from rural areas in each province. Thus, a total of 20 high schools were randomly selected for data collection. Ten students from each class of grade 12 were selected from each of the selected high schools to complete the questionnaire. The number of participants in this research depends on the number of grade 12th students at each high school. In total, number of grade12th students from the 5 provinces and cities involved in completing the questionnaire were 696 students; 317 male (45.6%) and 379 female (54.4%) and students from the downtown region were 372 (53.4%) and rural 324 (46.5%). The number of samples by gender and by region of the school in this study is shown in Table 1.

2.2 Data collection

This research is based on the quantitative data which to be collected by completing the questionnaire. The questionnaire is structured in half-form, with the answer to the recruiter, and open question so that the respondent can express

their own ideas. The questionnaire were pre-tested at Aknuwat high school in Phnom Penh to find out the reliability and misuse of each question and were corrected before use it for data collection.

Table 1. Number of samples by gender and school area

Items	Frequency	Percentage
Gender		
Male	317	45.6
Female	379	54.4
Total	696	100
School area		
Downtown	372	53.4
Rural	324	46.6
Total	696	100

2.3 Data analysis

All data obtained from this study were used to understand the main factors that influenced on the decision making and majors for higher education of grade 12st students. Data was analyzed based on quantitative analysis in the SPSS program and presented in a form of frequency and average. We used some commands in SPSS such as Explore to calculate the average value of each variable, Crosstab for percentage of double-crossed variables, Correlation analysis for analyze the relationship between major selection compared with other factors, Independent T-Test to investigate the difference in mean values of each two factors, Analysis of Variance (One-Way ANOVA) to estimate the differences of average value of all factors, and Chi-Square for analysis of the difference of major selection and most favorite subject during high school presented as percentage. All these commands were used as the basis for this analysis through the IBM SPSS Statistical 23 software to see statistical data as descibing the data, the relationship between each variable, the specific level of the mean and the frequency of the answer from samples. Analyzed data is displayed through various charts and graphs.

3. Reseach Results

3.1 The subject that students prefer the most in high school

The results showed that grade 12th students have a preference for different subjects (Table 2). Based on Chi-square analysise, it was shown that there was a significant difference on the preference of each subject such as Khmer study, Mathematics, Biology, Chemistry, Physics, English and History (Sig. = 0.000). Therefore, we can confirm that most of the students

prefer to learn the Khmer study (27.2%), Mathematics (23.8%), Biology (11.6%), Chemistry (10.5%), Physics (8.7%), English subject (6.8%), History (6.1%) and others (French, Moral civic, Geography, Earth science, Economics, and Information of Technology) were the lowest accounting for 5.3%.

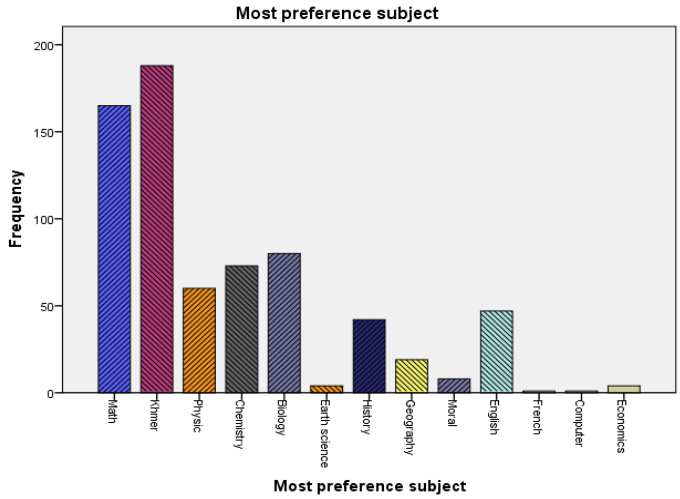


Table 2. Subjects that grade 12th student like the most during high school

Subjects	Frequency	%
Khmer	188	27.2
Mathermatics	165	23.8
Biology	80	11.6
Chemistry	73	10.5
Physics	60	8.7
English	47	6.8
History	42	6.1
others	37	5.3
Total	692	100

3.2- Stage of consideration of continuing skills in higher education

The results on the stage of consideration of grade12th students in the selection of continuing skill in higher education are shown in Table 3 and Figure. We observed that 2.3% of students did not ever think of recruiting higher education in higher education. In addition, most students began to consider recruitment of higher education skill while they were in high school, accounting for 71%, secondary school with 20.2%, and primary elementary only 6.5%. Moreover, by analyzing the Chi-square over the frequency of the above data, we have Sig = 0.000 which means that most students

decided to choose the specialty for college when they were in high school.

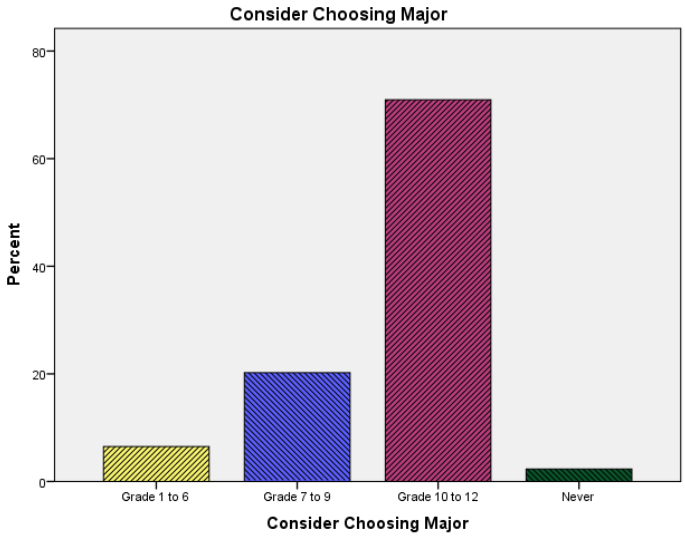


Table 3. Education level that students have initially considered on their university study

Education levels	Frequency	%
High school	491	71.0
Secondary school	140	20.2
Primary school	45	6.5
Non	16	2.3
Total	692	100

3.3 Major for continueing higher education

The data on major for continuing higher education selected by grade 12th students is presented in Table 4 and graph below. As a result of the Chi-square analysis on the frequency of students who have chosen each specialist skills found Sig = 0.000 which mean that the number of students who want to continue Higher education is unique in different disciplines. Thus, we can conclude that the 37 specialties that students like and want to pursue at the higher education level are as follows:

1. Medicine: 11.7%
2. Engineer: 7.9%
3. Law and Management: 6.8%
4. Public administration: 6.2%
5. Information of Technology: 5.9%
6. Accounting: 5.6%
7. Agriculture: 4.4%
8. Chemistry and electricity: 4.2%
9. Banking, Tourism, and Khmer Language: 4.0% 3.9% and 3.8%, respectively
10. English and marketing: 3.6% and 3.4%, respectively,
11. Mathematics, Biology and international relations: 2.8%, 2.0% and 1.9%, respectively

12. Business, Architecture and History: 1.5%, 1.4% and 1.2%, respectively.

Table 4. Skill which student selected for higher education

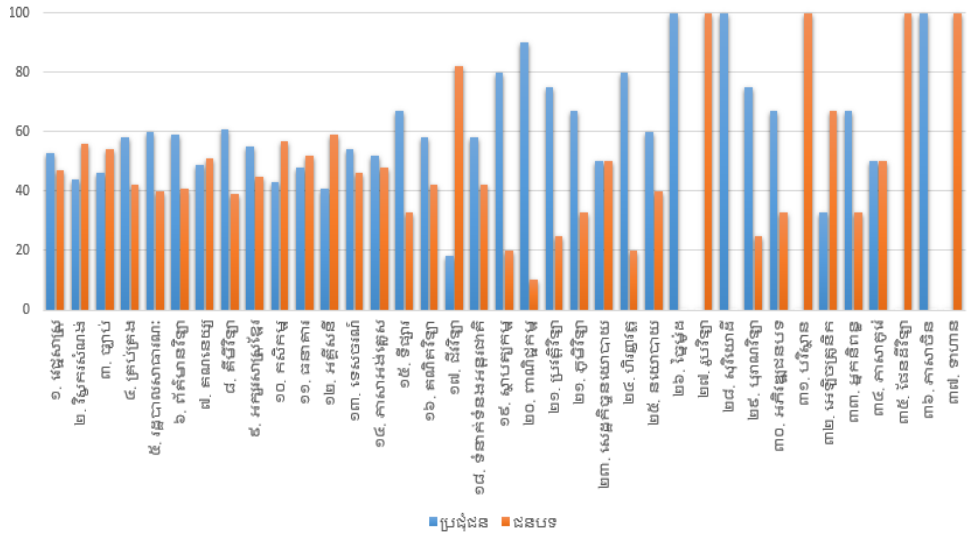
Rank	Skill	Number of	%
1	Medicine	81	11.7
2	Engineering	55	7.9
3	Law	46	6.6
4	Management	45	6.5
5	Public administration	42	6.1
6	Information of technology	39	5.6
7	Accounting	37	5.3
8	Chemistry	31	4.5
9	Khmer study	29	4.2
10	Agriculture	28	4
11	Banking	27	3.9
12	Electricity	27	3.9
13	Tourism	26	3.7
14	English	25	3.6
15	Marketing	24	3.5
16	Mathematics	19	2.7
17	Biology	17	2.4
18	Internation communication	12	1.7
19	Architecture	10	1.4
20	Business	10	1.4
21	History	8	1.2
22	Geography	6	0.9
23	Economic policy	6	0.9
24	Finance	5	0.7
25	Police	5	0.7
26	Designer	5	0.7
27	Physics	4	0.6
28	Cadastre	4	0.6
29	Archeology	4	0.6
30	Rual development	3	0.4
31	Environment	3	0.4
32	Electronic	3	0.4
33	Composer	3	0.4
34	Korean	2	0.3
35	Earth Science	1	0.1
36	Chinese	1	0.1
37	Soldiers	1	0.1
	Total	694	100

3.4 Major selection of student by areas

According to Table 5, 53.5% of students are from urban and 46.5% are from rural. We observed that:

Urban students: Want to pursue specialist skills compared to rural students: Mathematics (57%), Chemistry (61%), History (75%), Geography (66%), Khmer literature (55%), Information of Technology (59%), English Language (66%), Marketing (16%), Management (26%), Public Administration (59%), Tourism (53%), Medical (53%), Architecture (80%), International Relations (58%) and trade (90%) more than students in The countryside.

Rural students: Want to pursue specialized skills compared to urban students such as: Physics (100%), Biology (82%), Law (54%), Accounting (51%), Agriculture (57%), Electricity (59%) and engineers (56%) more than students in downtown.



3.5 Major selection of student by gender

According to Table 5, 54.5% of female students and 45.5% of male students contributed to the recruitment of specialists for higher education.

Female: Mostly want to continue their studies on Mathematics (73%), Physics (100%), Chemistry (83%), Biology (82%), Khmer literature (65%), Accounting (94%), Marketing (66%), Financial (80%), Management (64%), Public administration (71%), Banking (74%), Medical (65%), Tourism (57%), International Relations (91%), Design (80%), Businese (70 %) and composer than male students.

Male: Mostly want to continue their study on Geography (66%), Laws (67%), Information of technology (84%), English language (52%), Agriculture (57%), Electricity (96%), Engineers (94%), Architecture (60%), Electronics (100%) and Politics more than female students. The specialized skills that students of both sexes want to pursue are History and Economy.

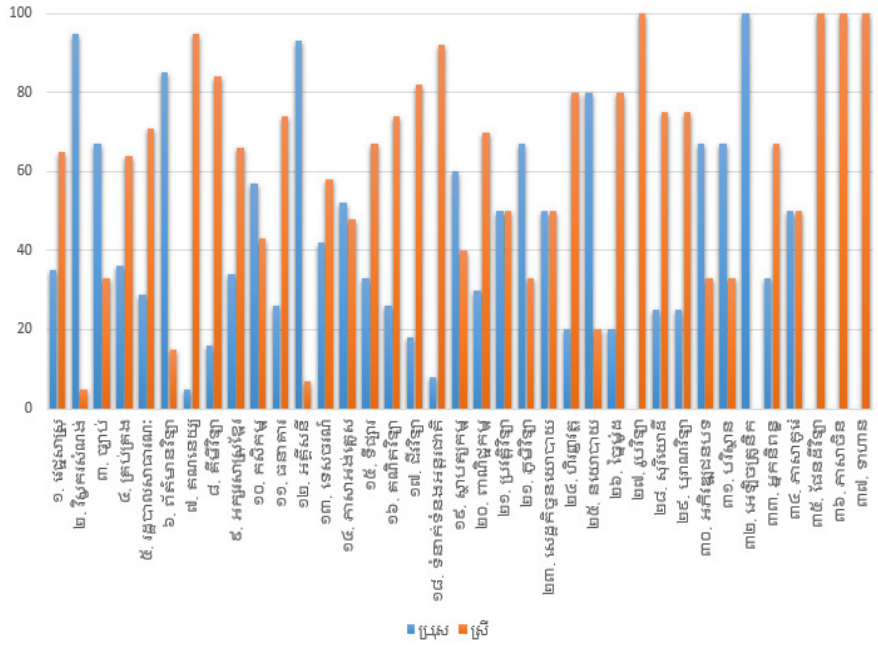


Table 5. Major for higher education selected by grade 12th student grouped by area and sex

Skill	School area		Sex		Total
	Urban	Rural	Male	Female	
Medicine	43	38	28	53	81
Engineering	24	31	52	3	55
Law	21	25	31	15	46
Management	26	19	16	29	45
Public administration	25	17	12	30	42
Information of technology	23	16	33	6	39
Accounting	18	19	2	35	37
Chemistry	19	12	5	26	31
Khmer study	16	13	10	19	29
Agriculture	12	16	16	12	28
Banking	13	14	7	20	27
Electricity	11	16	25	1	27
Tourism	14	12	11	15	26
English	13	12	13	12	25
Marketing	16	8	8	16	24
Mathematics	11	8	5	14	19
Biology	3	14	3	14	17
Internation communication	7	5	1	11	12
Architecture	8	2	6	4	10
Business	9	1	3	7	10
History	6	2	4	4	8

Geography	4	2	4	2	6
Economic policy	3	3	3	3	6
Finance	4	1	1	4	5
Police	3	2	4	1	5
Designer	5	0	1	4	5
Physics	0	4	0	4	4
Cadastre	4	0	1	3	4
Archeology	3	1	1	3	4
Rual development	2	1	2	1	3
Environment	0	3	2	1	3
Electronic	1	2	3	0	3
Composer	2	1	1	2	3
Korean	1	1	1	1	2
Earth Science	0	1	0	1	1
Chinese	1	0	0	1	1
Soldiers	0	1	0	1	1
Total	370	323	315	378	693

6.6 Majors to pursue higher education compared to subjects preferred by high school students

Table 6 shows that students perfer to study the subject the most as following:

- Mathematics: They prefere to contiunue their major at higher edcucation such as Engineering (18%), Medical (13%), Mathematics (11%), Information Technology (10%), Accounting (7%), Banking (7%), Law (5%), Electricity (6%), Management (3%) and architecture (3%) compared with a total of 165 strudents. As a result, 18% of students who are interested in learning mathematics have chosen inappropriate specialized skills.

- Physics: They prefere to contiunue their major at higher edcucation such as engineers (20%), Medical (13%), Electricity (13%), Management (8.33%), Information Technology (8.33%), Physics (5%) compared with a total of 60 students. As a result, 21.33% of students interested in learning physics chose incompetent specialist skills.

- Chemistry: They prefere to contiunue their major at higher edcucation such as Chemistry (27%), Medical (15%), Engineering (6%), Agriculture (4%), Information Technology (4%), Accounting (3%), Banking (2%), Management (2%) and Police (2%) compared with a total of 73 students. As a result, 13% of students who are interested in chemistry are choosing incorrectly.

- Biology: They prefere to contiunue their major at higher edcucation such as Medical (32%), Biology (16%), Agriculture (4%), Accounting (5%), Tourism (4%),

engineering (4%), Banking (2%), Marketing (2%) and Law (2%) compared with a total of 80 students. As a result, 19% of students who are interested in biology are choosing inappropriate specialized skills.

- Earth Science: Not many students, and they did not choose this specialist, but they wanted to study Law (1 student), Agriculture (1 student), Information Technology (1 student) and engineering (1 student). As a result, 100% of the students who are interested in learning about Earth science chose incorrectly.

- Geography: Not many students, they want to study major such as Geography (4 students), Management (3 students), Agriculture (3 students), Public administrators (2 students), Physicis (1 students), Earth Science (1 students), Law (1 students), Information Technology (1 students), Marketing (1 students), Medical (1 students) and Businese (1 students). As a result, 11 students (58% of students) who interested in geography are choosing inappropriate specialized skills.

- Computer: Only one student, he wants to study IT skills.

- Economy: They want to study Marketing (3 students) and Business (one student).

- Khmer: They prefere to contiunue their major at higher edcucation such as Khmer (29 students), Public administration (28 students), Management (25 students), Law (19 students), Accouting (15 students), Marketing (11 students), Agriculture (8 students), Banking (7 students), English (6 students), Tourism (6 students), Electricity (5 students), and Information Technology (4 students). As a result, there were 50 students (30.5%) who preferred to study Khmer language have chosen inappropriate specialized skills.

- History: Not many, they want to study skills such as History (8 students), Laws (6 students), Tourism (6 students), IT (3 students), English (2 students), Marketing (2 students), Management (2 students), electrices (2 students) and Archeologists (2 students). As a result, 11 students (33.33%) interested in the History study have chosen inappropriate specialized skills.

- Civic moral: Not many students, they want to studyfirst major such as Public administrators (2 students) and Law (2 students) while second major as medical (1 student), management (1 students), Marketing (1 students) and geography (1 students). According to the results, four students (50%) who are interested in moral disciplines have chosen inappropriate specialized skills.

- English: Not many students, they want to study major as English (14 students), International relations (6 students) and Tourism (6 students), Law (4 students), Public adminitration (3 students), Information Technology (3 students), Businese (2 students), Electricity (2 students) and Marketing (2 students). According to the

results, nine students (21.43% of the students) who are interested in English disciplines have chosen inappropriate specialized skills.

- French: Only one student and wants to study Mathematics.

In summary, 159 students (23% of all students) who chose major for higher education did not accurately match their preferred subject in their high school. This impact illustrated that they got influence from a number of factors such as school environment, parental factors, relative factors, and labour market factors.

Table 6. Major for higher education as compared to subject which student favorite at high school

No.	Skill	Most favorite subjects during high school													
		A	B	C	D	E	F	G	H	I	J	K	L	M	Total
1	Medicine	22	0	8	15	32	0	1	1	1	1	0	0	0	81
2	Engineering	30	1	12	6	4	1	0	0	0	1	0	0	0	55
3	Law	9	19	2	0	2	1	6	1	2	4	0	0	0	46
4	Management	6	25	5	2	0	0	2	3	1	1	0	0	0	45
5	Public administration	2	28	2	1	1	0	1	2	2	3	0	0	0	42
6	Information technology	17	4	5	4	0	1	3	1	0	3	0	1	0	39
7	Accounting	12	15	2	3	5	0	0	0	0	0	0	0	0	37
8	Chemistry	1	1	2	27	0	0	0	0	0	0	0	0	0	31
9	Khmer study	0	29	0	0	0	0	0	0	0	0	0	0	0	29
10	Agriculture	4	8	1	4	6	1	0	3	0	0	0	0	0	27
11	Banking	9	5	8	0	1	0	2	0	0	2	0	0	0	27
12	Electricity	12	7	2	2	2	0	1	0	0	0	0	0	0	26
13	Tourism	2	6	1	1	4	0	6	0	0	6	0	0	0	26
14	English	1	6	1	0	1	0	2	0	0	14	0	0	0	25
15	Marketing	0	11	1	1	2	0	2	1	1	2	0	0	3	24
16	Mathematics	18	0	0	0	0	0	0	0	0	0	1	0	0	19
17	Biology	0	0	0	1	16	0	0	0	0	0	0	0	0	17
18	Internation communication	0	4	0	0	1	0	1	0	0	6	0	0	0	12
19	Architecture	6	0	2	1	0	0	1	0	0	0	0	0	0	10
20	Business	5	0	0	1	0	0	0	11	0	2	0	0	1	10
21	History	0	0	0	0	0	0	8	0	0	0	0	0	0	8
22	Geography	0	0	0	0	0	0	1	4	1	0	0	0	0	6
23	Economic policy	2	0	1	1	1	0	0	0	0	1	0	0	0	6
24	Finance	1	3	1	0	0	0	0	0	0	0	0	0	0	5
25	Police	1	2	0	2	0	0	0	0	0	0	0	0	0	5

26	Designer	5	0	0	0	0	0	0	0	0	0	0	0	0	5
27	Physics	0	0	3	0	0	0	0	1	0	0	0	0	0	4
28	Cadastre	0	3	0	0	0	0	0	0	0	1	0	0	0	4
29	Archeology	0	1	0	0	1	0	2	0	0	0	0	0	0	4
30	Rual development	0	3	0	0	0	0	0	0	0	0	0	0	0	3
31	Environment	0	1	0	1	1	0	0	0	0	0	0	0	0	3
32	Electronic	0	1	1	0	0	0	1	0	0	0	0	0	0	3
33	Composer	0	2	0	0	0	0	1	0	0	0	0	0	0	3
34	Korean	0	2	0	0	0	0	0	0	0	0	0	0	0	2
35	Earth Science	0	0	0	0	0	0	0	1	0	0	0	0	0	1
36	Chinese	0	1	0	0	0	0	0	0	0	0	0	0	0	1
37	Soldiers	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	Total	165	188	60	73	80	4	42	19	8	47	1	1	4	692

Note: A. Math; B. Khmer; C. Physic; D. Chemistry; E. Biology; F. Earth science; G. History; H. Geography; I. Moral; J. English; K. French; L. Information of Technology; M. Economics

3.7 Factors affected decisions making on Choosing major for higher education

3.7.1 Expectations of income

According to the survey results (Table 7), students who wish to seek medical health are more likely to have a moderate income of $ 610, while engineers major which stand for second class with average income of $ 922. The third skill is Law and Management which students expected to earn an average of $ 556.67 and $ 496.67, respectively. In terms of public administration, ranked fourth, students expect an average of $ 467.80. With 5th place of information technology, students expect an average income of $ 622.37while accounting as students expect an average income of $ 520.27. In terms of agriculture, ranked 7th, students expect an average income of $ 459. Chemistry and Electricity, Rank 8, students expect an average of $ 467.74 and $ 536.30, respectively. In total, we found that students expect an initial average income of about $ 500, with an average of only five members in their household.

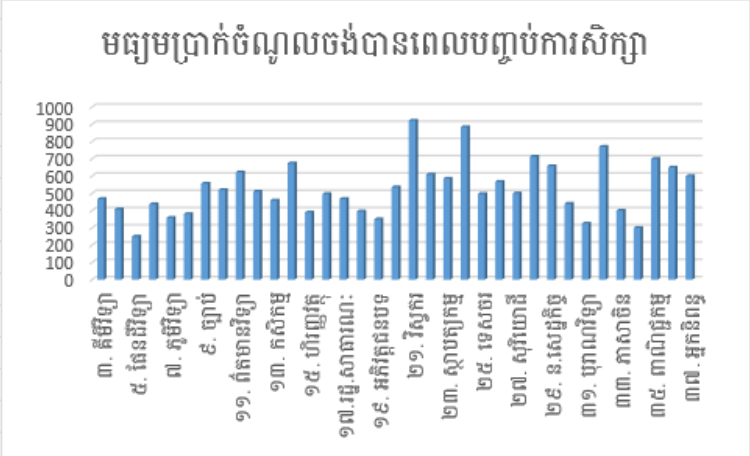


Table 7. Major for Continuing in higher education versus income and number of family members

Skill	Average expected income ($)	Average family members (Persons)
1. Mathematics	452.63	4.95
2. Physics	462.50	3.00
3. Chemistry	467.74	5.84
4. Biology	407.65	5.82
5. Earth Science	250.00	11.00
6 History	437.50	5.75
7. Geography	358.33	6.67
8. Khmer study	381.03	5.66
9. Law	556.67	5.50
10. Accountant	520.27	5.41
11. IT	622.37	5.18
12. English	510.42	4.84
13. Agriculture	458.93	5.86
14. Marketing	674.09	5.04
15. Finance	390.00	6.00
16. Management	496.67	5.09
17. Public administration	467.80	5.00
18. Banking	395.56	5.15
19. Rual Development	350.00	3.67
20. Electricity	536.30	5.59
21. Engineering	921.70	5.24
22. Medicine	609.63	5.22
23. Archeteture	585.00	5.40
24. Environment	883.33	4.00
25. Tourism	497.08	5.38
26. Electronic	566.67	5.67
27. Cadastre	500.00	6.50
28. Internation communication	712.50	5.33
29. Economics	658.33	4.50
30. Police	440.00	4.80
31. Archeology	325.00	5.50

32. Designer	770.00	5.80
33. Chinese	400.00	5.00
34. Soldiers	300.00	7.00
35. Businese	700.00	5.30
36. Korean	650.00	6.50
37. Author	600.00	6.00
Total	555.37	5.33

3.7.2 Family status

Based on CrossTabe using SPSS, we can determine that students want to learn the following skills such as:

- Medical: Most students have family status as parents living together, parents with primary education, mothers with secondary education, father and mother working as farmer, and having family members studying at university.

- Civil Engineering, Law, Mangement, Public Administration and Accounting: Most students have a family situation as parents living together, parents having secondary education, parents work as farmer, and have no family members study at university.

- Information technology: Most students have a family situation as parents living together, father having high school, mother with secondary education, parents worked as farmer, and and have no family members study at university.

In general, students who wish to continue their major at universities, most of them have a family situation as parents living together, parents with secondary education, parents working as a farmer, and no family member is a student studying at a university.

Table 8. Status of the family situation

Selected Skill	Do your parents stay together?					Total
	Yes	Divorce	Dad passed	Mom Passed	Parents passed away	
Medicine	69	9	0	3	0	81
Engineering	47	3	3	1	1	55
Law	39	4	2	1	0	46
Management	41	0	2	1	1	45
Public administration	37	1	3	1	0	42
Information technology	32	2	4	0	1	39
Accounting	34	1	2	0	0	37
Chemistry	29	0	2	0	0	31

Khmer study	26	1	2	0	0	29
Agriculture	25	0	2	1	0	28
Banking	19	3	1	4	0	27
Electricity	21	5	0	1	0	27
Tourism	20	1	3	2	0	26
English	22	2	0	1	0	25
Marketing	19	1	4	0	0	24
Mathematics	14	2	3	0	0	19
Biology	16	1	0	0	0	17
Internation	9	1	1	1	0	12
Architecture	8	0	2	0	0	10
Business	8	1	1	0	0	10
History	7	1	0	0	0	8
Geography	5	0	1	0	0	6
Economic policy	4	0	1	1	0	6
Finance	5	0	0	0	0	5
Police	4	1	0	0	0	5
Designer	4	1	0	0	0	5
Physics	4	0	0	0	0	4
Cadastre	4	0	0	0	0	4
Archeology	4	0	0	0	0	4
Rual development	2	0	0	0	1	3
Environment	2	0	1	0	0	3
Electronic	3	0	0	0	0	3
Composer	3	0	0	0	0	3
Korean	2	0	0	0	0	2
Earth Science	1	0	0	0	0	1
Chinese	1	0	0	0	0	1
Soldiers	0	1	0	0	0	1
សរុប	590	42	40	18	4	694

Table 9. Parent's educational level

Skill	Parent education level													
	Non		Primary		Secondary		High School		B.sc		M.sc		Ph.D	
	dad	mom	dad	mom	dad	mom	dad	mom	dad	mom	dad	mom	dad	mom
Medicine	1	9	26	13	19	32	23	26	6	1	2	0	3	0
Engineering	4	6	10	8	19	21	17	16	2	1	2	3	1	0
Law	2	4	12	9	13	20	10	11	7	2	2	0	0	0
Management	0	2	13	9	21	23	7	10	2	1	2	0	0	0

Public administration	1	3	12	7	16	20	10	11	3	1	0	0	0	0
Information of technology	0	1	6	9	11	16	14	10	5	3	2	0	0	0
Accounting	1	4	8	4	13	20	12	9	3	0	0	0	0	0
Chemistry	2	6	8	4	10	13	9	7	1	1	1	0	0	0
Khmer study	3	6	8	3	9	11	6	9	3	0	0	0	0	0
Agriculture	1	4	7	3	10	13	8	7	2	1	0	0	0	0
Banking	1	2	5	3	10	9	9	11	1	1	1	0	0	0
Electricity	3	1	7	5	6	12	9	8	2	1	0	0	0	0
Tourism	5	4	6	5	5	12	8	4	1	0	0	0	0	0
English	1	2	4	2	8	17	6	3	4	0	1	0	0	0
Marketing	2	5	5	3	7	12	8	4	2	0	0	0	0	0
Mathematics	0	1	6	2	6	12	5	3	1	1	1	0	0	0
Biology	0	2	3	3	10	10	3	2	1	0	0	0	0	0
Internation communication	0	1	2	2	2	3	4	4	3	1	1	1	0	0
Architecture	1	1	3	2	1	4	1	2	3	1	1	0	0	0
Business	1	1	3	3	3	3	1	2	1	1	0	0	0	0
History	1	1	2	0	2	2	3	5	0	0	0	0	0	0
Geography	0	0	1	0	4	4	1	2	0	0	0	0	0	0
Economic policy	0	0	1	3	2	1	1	2	1	0	1	0	0	0
Finance	0	3	1	0	1	2	1	0	2	0	0	0	0	0
Police	0	1	1	1	2	3	2	0	0	0	0	0	0	0
Designer	0	1	2	2	0	1	1	1	2	0	0	0	0	0
Physics	0	1	0	1	2	1	1	1	1	0	0	0	0	0
Cadastre	0	1	2	0	2	2	0	1	0	0	0	0	0	0
Archeology	0	0	1	2	1	2	1	0	1	0	0	0	0	0
Rual development	0	0	1	0	2	1	0	2	0	0	0	0	0	0
Environment	0	0	0	0	2	2	1	1	0	0	0	0	0	0
Electronic	0	1	2	1	0	1	1	0	0	0	0	0	0	0
Composer	0	0	1	0	1	1	1	2	0	0	0	0	0	0
Korean	0	1	1	0	1	1	0	0	0	0	0	0	0	0
Earth Science	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Chinese	0	0	0	0	1	1	0	0	0	0	0	0	0	0
Soldiers	0	0	0	0	0	1	1	0	0	0	0	0	0	0

Total	30	75	170	109	223	310	185	176	60	17	17	4	4	0

Table 10. Parenting Factors

Skill	Parents Job																
	Teacher		Company staff		Engineer		Farmer		Government officer		Moto taxi	Own businese		Police		Casino staff	House wife
	dad	mom	dad	mom	dad	mom	dad	mom	dad	mom	dad	dad	mom	dad	mom	dad	mom
Medicine	7	6	0	0	0	0	35	43	12	1	2	19	29	5	0	0	1
Engineering	3	1	4	0	1	1	35	36	4	1	0	6	12	1	0	0	2
Law	3	4	2	1	0	0	24	27	4	1	1	4	11	7	0	1	1
Management	2	0	3	0	2	0	26	31	4	2	0	4	9	4	0	0	3
Public administration	3	2	2	0	0	0	27	30	2	1	1	4	6	2	0	0	3
IT	4	4	4	1	2	0	15	22	4	0	1	4	11	4	0	0	1
Accounting	2	2	0	0	1	0	21	25	0	0	0	7	9	5	1	0	0
Chemistry	1	2	1	0	0	0	19	18	4	0	0	5	9	0	0	0	1
Khmer study	5	2	2	0	0	0	17	20	1	0	0	2	5	1	0	0	2
Agriculture	3	4	1	0	0	0	20	20	0	0	0	2	4	1	0	0	0
Banking	1	0	0	1	1	0	16	17	1	0	1	4	6	3	0	0	1
Electricity	2	3	0	0	0	0	22	21	1	0	0	0	3	2	0	0	0
Tourism	1	3	1	0	0	0	14	15	1	0	0	6	6	2	0	0	0
English	4	1	2	1	0	0	11	17	1	0	0	3	4	4	0	0	2
Marketing	3	0	0	0	0	0	15	15	1	0	1	4	8	0	0	0	1
Mathematics	1	0	1	0	0	0	11	16	1	0	0	2	2	1	0	0	1
Biology	0	0	0	0	0	0	14	16	1	0	0	1	1	1	0	0	0
Internation communication	1	2	0	0	0	0	6	6	3	1	0	2	3	0	0	0	0
Architecture	2	0	1	0	0	0	4	3	1	1	0	1	6	0	0	0	0
Business	0	2	0	0	0	0	3	2	0	1	1	3	4	3	1	0	0
History	0	1	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0
Geography	0	0	0	0	0	0	6	5	0	0	0	0	1	0	0	0	0
Economic policy	0	0	0	0	0	0	3	4	2	1	0	0	1	1	0	0	0
Finance	0	0	1	0	0	0	1	1	1	0	0	2	3	0	0	0	1
Police	0	0	0	0	0	0	2	4	0	0	0	2	1	1	0	0	0
Designer	1	3	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0
Physics	1	1	0	0	0	0	2	1	0	0	0	1	2	0	0	0	0
Cadastre	0	0	0	0	0	0	1	0	2	0	0	1	1	0	0	0	3
Archeology	1	0	0	0	0	0	2	3	1	0	0	0	0	0	0	0	1
Rual development	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0
Environment	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0
Electronic	0	1	1	0	0	0	2	1	0	0	0	0	1	0	0	0	0
Composer	1	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0
Korean	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0
Earth Science	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0

Chinese	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
Soldiers	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
Total	52	44	30	4	7	1	391	437	52	11	8	92	162	48	2	1	24

Table 11. Factor of family members studying at university

Skill	Family member studing at University		Total
	No	Yes	
Medicine	36	45	81
Engineering	37	18	55
Law	26	19	45
Management	27	18	45
Public administration	25	17	42
Information of technology	20	19	39
Accounting	22	15	37
Chemistry	16	15	31
Khmer study	17	12	29
Agriculture	18	10	28
Banking	18	9	27
Electricity	13	14	27
Tourism	11	15	26
English	8	17	25
Marketing	15	9	24
Mathematics	13	6	19
Biology	11	6	17
Internation communication	3	9	12
Architecture	3	7	10
Business	4	6	10
History	7	1	8
Geography	5	1	6
Economic policy	4	2	6
Finance	3	2	5
Police	4	1	5
Designer	1	4	5
Physics	3	1	4
Cadastre	2	2	4

Archeology	1	3	4
Rual development	2	1	3
Environment	2	1	3
Electronic	2	1	3
Composer	1	2	3
Korean	1	1	2
Earth Science	1	0	1
Chinese	1	0	1
Soldiers	1	0	1
Total	384	309	693

3.7.3 Factors affect decisions making for continuing higher education

By analyzing the median average of student motivation factors which affected on decisions making for continuing higher education, there are 22 different factors (Instruction from teachers, mother, fathers, friends, former students, university representatives, school boards, college directories and other factors such as advertising, reputation, number of students, university programs, University location, Accomudaton, living standard, University fee, scholarhip, and the traditions of the family). We can conclude that the factors influencing the student's decision to choose their major for continuing education are as follows:

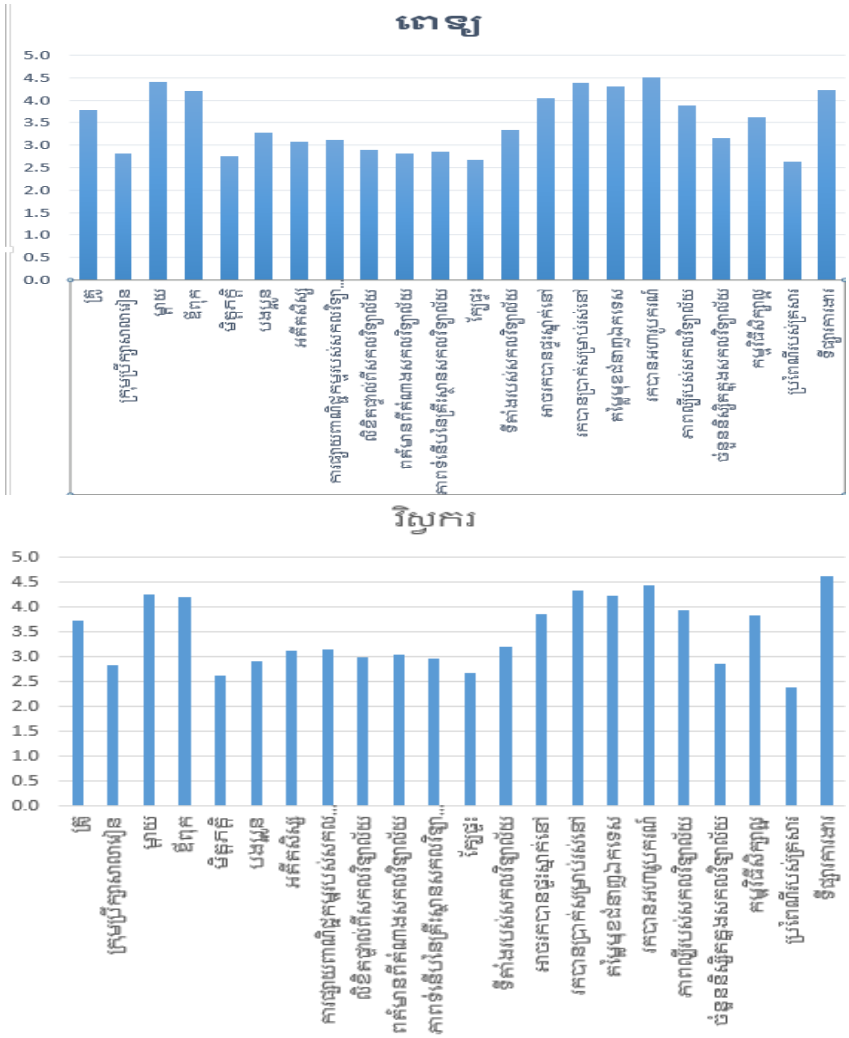
1. Medical skills: Some factors that motivate students to pursue academic medical education are as follows:

- Critical point: 1. scholarship, 2. mother's incentive and daily income, 3. fee, 4. job market, 5. father's motivation and living standard, 6. availability of accommodation.
- Moderate point: 1. university reputation, 2. Instruction from teacher, 3. Best curriculum, 4 campus location, 5. Encouragement from relatives, 6. Number of students studying, 7. university advertiment, 8. former students´ guidance.
- Mini point: All remaining factors are a minor factor for students.

2. Engineering: Some factors that motivate students to pursue academic medical education are as follows:

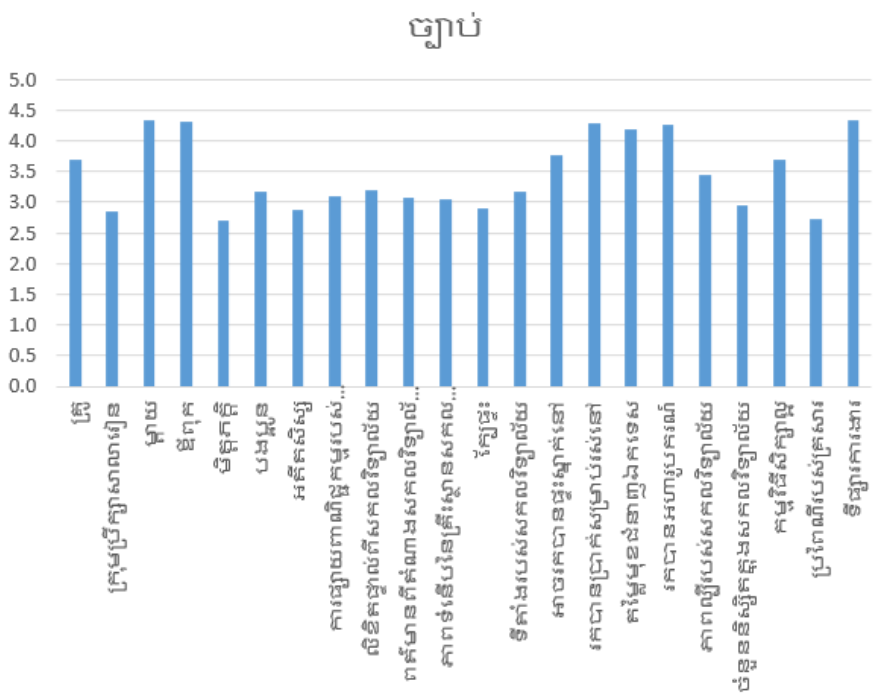
- Critical point: 1. job market, 2. Schorlaship, 3. Accomudation, 4. the encouragement of mother, 5. fee, 6. father's encouragement.

- Moderate point: 1. the location and reputation of university, 2. Accomudation, 3. best study program, 4. Introduction from teacher, 5. University advertisement, 6. Former student guidance, 7. Univeristy representatives, 8. University directories.
- For other factors, students are considered to be very less important.



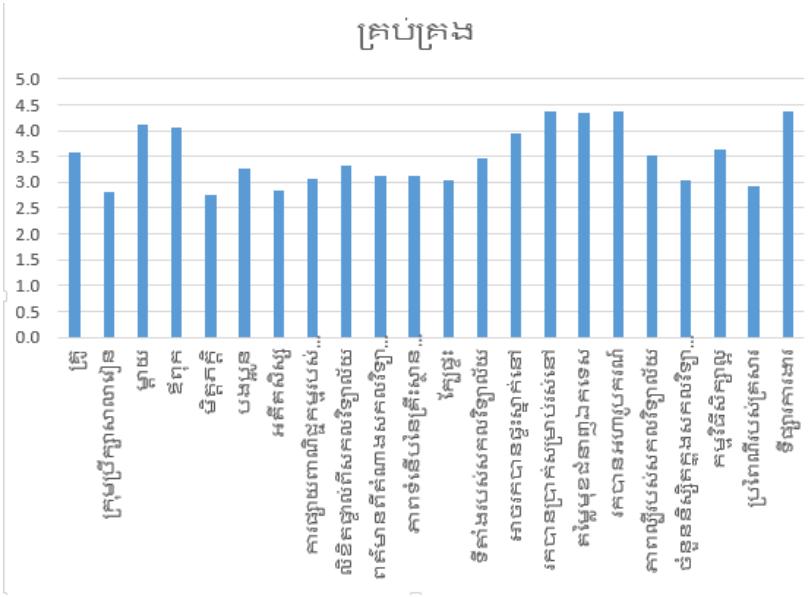
3. Law: Some factors that motivate students to pursue academic medical education are as follows:

- Critical point: 1. Parents guidance and job market, 2. Schorlaship and living allowance, 3. Fee.
- Moderate point: 1. Accomudation, 2. Teacher guidance and study program, 3. University reputation, 4. University directories letter, 5. Campus location and relative guidance, 6. University advertisement, 7. University representative, 8. Modernization of university.
- For other factors, students are considered to be very less important.



4. Management: Some factors that motivate students to pursue academic medical education are as follows:

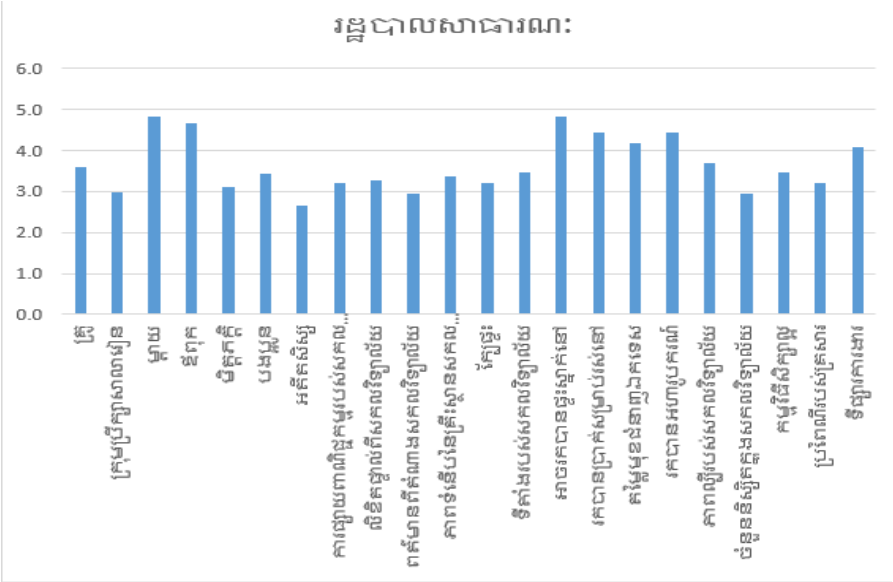
- Critical point: 1. Job market, Schorlaship, living allowance, Fee, 2. Parents guidance.
- For other factors, students are considered to be moderate important.



5. Public administration: Some factors that motivate students to pursue academic medical education are as follows:

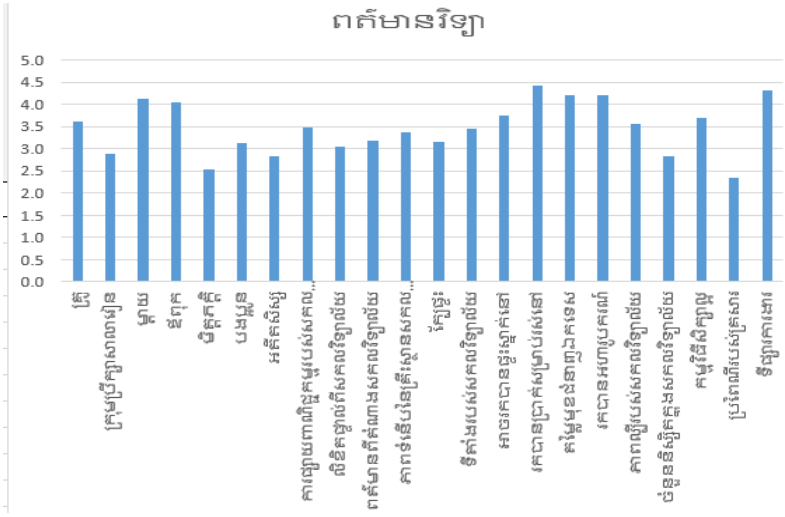
- Critical point: 1. mother guidance and accomudation, 2. Father guidance, 3. schorlaship, 4. Living allowance, 5. Fee, 6. Job market.

- For other factors, students are considered to be moderate important.



6. Information technology: Some factors that motivate students to pursue academic medical education are as follows:

- Critical point: 1. Living allowance, 2. Job market, 3. Fee and schorlaship, 4. Mother guidance, 5. Father guidance.
- For other factors, students are considered to be moderate important.



On the other hand, if we look at an average of each factor, we find that the grader12th students who choose major for pursuing their university education across the Kingdom of Cambodia are motivated and encouraged. The main factors are: labor market for each skill, scholarship, living allowance, and parent's guidance. Moderate

factors such as: accommodation, teacher guidance, good curriculum, university-reputation, relative guidance and family culture. We can not find any element that is less important importance for encouraging students to choose skills for pursuing higher education. These indicate that the 22 factors that all of us think of influenced on the decision-making process to choose skills for continuing education.

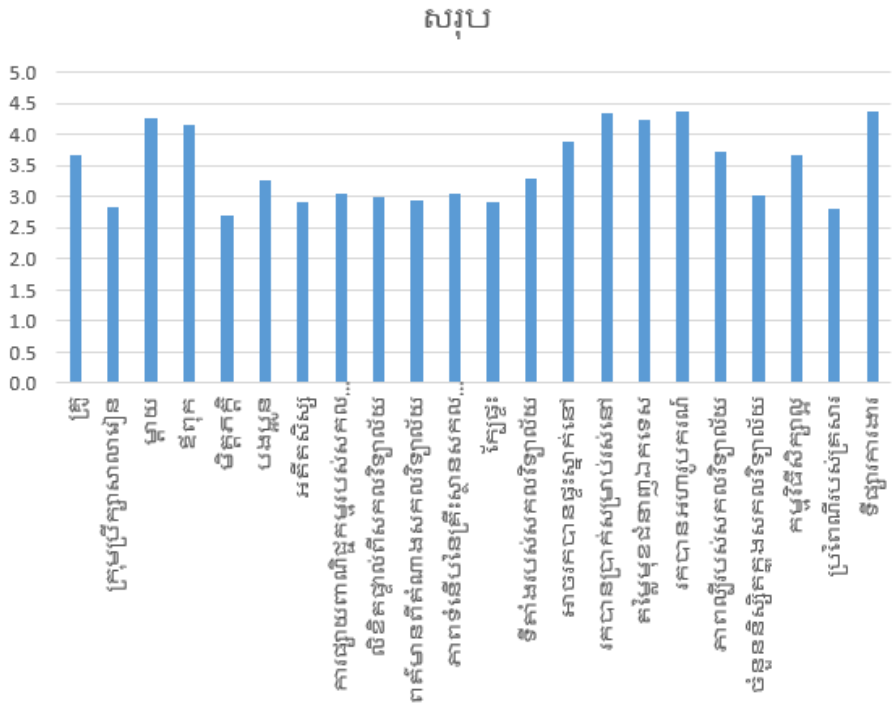


Table 11. Average value of motivation by factor

Skill	Teacher	School concil	mom	dad	friend	Relatives	Former student	University advertisement	Directed letter from the university	Information from the university representation	University campus	Near home	Location of university	Available accomodation	Living allowance	Major's fee	Scholarship available	The University's reputation	University student number	Curriculum	Family hobbies	Job markets
Medicine	3.8	2.8	4.4	4.2	2.8	3.3	3.1	3.1	2.9	2.8	2.9	2.7	3.3	4.0	4.4	4.3	4.5	3.9	3.1	3.6	2.6	4.2
Engineering	3.7	2.8	4.3	4.2	2.6	2.9	3.1	3.2	3.0	3.0	3.0	2.7	3.2	3.9	4.3	4.2	4.5	3.9	2.9	3.8	2.4	4.6
Law	3.7	2.8	4.3	4.3	2.7	3.2	2.9	3.1	3.2	3.1	3.0	2.9	3.2	3.8	4.3	4.2	4.3	3.5	3.0	3.7	2.7	4.3
Management	3.6	2.8	4.1	4.1	2.8	3.3	2.8	3.1	3.3	3.1	3.1	3.0	3.5	3.9	4.4	4.3	4.4	3.5	3.0	3.6	2.9	4.4
Public administration	3.6	3.0	4.8	4.7	3.1	3.4	2.6	3.2	3.3	3.0	3.4	3.2	3.5	4.8	4.4	4.2	4.4	3.7	3.0	3.5	3.2	4.1
Information of technology	3.6	2.9	4.1	4.1	2.5	3.1	2.8	3.5	3.1	3.2	3.4	3.2	3.5	3.7	4.4	4.2	4.2	3.6	2.8	3.7	2.3	4.3
Accounting	3.4	2.9	4.2	4.2	2.7	3.6	2.6	2.7	2.9	2.9	2.9	2.8	3.0	3.8	4.3	4.2	4.3	3.9	3.1	3.7	3.0	4.2
Chemistry	3.9	2.9	4.3	4.2	2.5	2.9	2.7	2.8	2.5	2.7	2.8	2.9	3.3	3.5	4.2	4.0	4.4	3.6	2.6	3.5	2.5	4.4
Khmer study	3.9	3.0	4.3	4.2	2.6	3.3	2.6	2.9	2.8	2.8	3.3	3.3	3.2	3.7	4.3	4.3	4.5	3.6	3.0	3.4	3.4	4.3
Agriculture	3.4	2.8	4.0	4.0	2.7	3.1	2.8	2.9	2.8	2.9	2.9	2.6	3.3	3.2	4.0	4.1	4.2	3.7	3.1	3.8	3.3	4.4

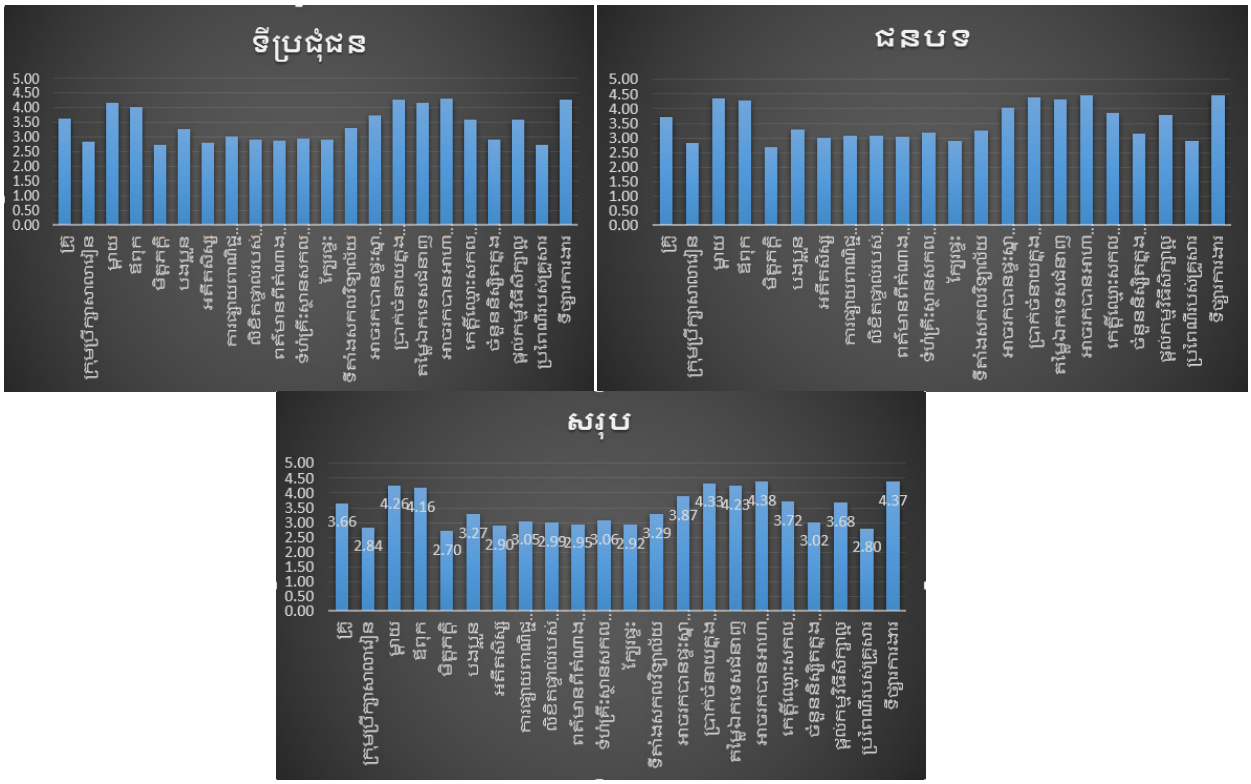
Banking	3.4	2.6	4.1	4.0	2.4	3.1	2.9	2.8	2.8	3.0	3.0	2.6	3.0	3.9	4.1	4.4	4.4	3.5	3.1	3.9	3.0	4.1
Electricity	3.6	2.7	4.1	4.1	2.7	3.4	3.2	3.3	3.0	3.0	3.1	3.0	2.9	3.8	4.3	4.2	4.5	3.7	3.3	3.8	2.9	4.6
Tourism	3.6	3.0	4.3	4.3	3.0	3.8	2.8	3.0	2.8	3.0	2.9	3.0	3.5	4.0	4.5	4.5	4.5	3.8	2.9	3.6	2.3	4.5
English	3.8	2.8	4.3	4.0	3.1	3.6	3.2	3.2	3.0	3.2	3.2	3.1	3.4	4.0	4.0	4.0	3.9	3.6	2.9	3.7	3.1	4.6
Marketing	3.9	3.2	4.6	4.2	2.7	3.5	2.9	3.0	2.8	3.2	3.3	3.7	3.6	3.9	4.5	4.5	4.7	3.6	3.3	3.7	3.5	4.5
Mathematics	3.9	2.8	4.2	3.9	2.5	3.0	2.7	3.0	3.2	3.1	3.1	2.5	3.2	3.9	4.4	4.2	4.3	3.7	3.1	4.0	2.6	4.5
Biology	3.7	3.1	4.5	4.5	2.6	3.5	2.9	3.2	3.4	3.1	3.4	3.1	3.6	4.5	4.6	4.4	4.5	3.9	3.3	3.6	3.4	4.3
Internation communication	3.7	2.0	4.1	3.8	1.9	3.4	3.4	3.4	3.0	3.0	2.8	2.5	3.5	3.4	4.3	4.3	4.6	3.4	3.1	3.8	2.0	4.7
Architecture	3.6	2.5	3.6	3.2	2.9	3.1	3.5	3.3	3.5	3.0	3.1	2.6	3.8	3.7	4.4	4.2	4.6	4.0	3.4	4.1	2.3	4.7
Business	3.4	3.1	3.6	3.6	2.5	3.2	2.9	2.6	3.0	2.2	2.8	3.0	3.3	3.7	4.4	4.4	4.4	4.2	3.0	3.7	2.5	4.5
History	3.9	2.6	4.5	4.4	3.1	3.4	2.6	3.0	2.9	3.0	3.6	3.9	3.8	3.8	4.3	4.1	4.3	3.5	3.6	3.6	3.6	4.4
Geography	3.7	3.0	3.7	3.7	2.2	3.5	2.5	2.8	3.0	2.8	2.8	3.8	2.8	4.2	4.3	3.8	4.0	3.5	2.5	3.2	2.7	3.2
Economic policy	3.3	2.8	4.0	3.7	2.8	2.8	3.3	2.5	2.3	2.0	2.7	2.2	2.5	2.8	4.2	3.7	3.3	4.0	2.7	3.5	1.7	4.7
Finance	3.8	3.2	4.4	4.4	2.8	3.4	3.0	3.2	3.4	3.4	3.0	3.2	3.6	4.0	4.4	4.6	4.4	3.6	3.2	4.2	3.2	4.8
Police	3.8	3.2	4.8	4.8	3.4	3.6	3.6	3.2	3.4	2.6	2.4	3.0	2.8	3.0	4.0	4.0	3.0	3.8	3.4	3.4	3.2	4.6
Designer	3.4	2.4	4.0	4.2	3.2	3.2	2.8	2.2	2.6	2.4	3.4	3.0	3.8	3.8	4.6	4.6	4.8	4.0	2.2	3.4	2.4	4.6
Physics	3.8	2.3	4.8	5.0	2.8	3.0	2.5	2.8	3.3	3.0	3.3	3.8	3.3	4.0	4.5	4.0	4.5	4.3	3.3	3.8	4.8	4.3
Cadastre	3.5	2.3	4.3	4.0	2.0	3.3	3.3	3.0	3.0	2.8	3.3	3.0	3.3	4.3	4.5	4.8	5.0	4.5	3.3	4.0	3.3	4.8
Archeology	2.5	2.5	3.5	3.5	2.3	3.0	3.0	2.5	3.3	2.5	3.3	1.8	2.5	2.5	4.0	3.8	4.8	3.7	2.5	4.0	1.0	4.3
Rual development	4.3	3.3	4.7	4.7	2.7	4.0	2.7	3.7	2.3	3.0	2.3	3.3	2.3	2.3	4.7	3.7	5.0	3.3	3.7	3.3	2.3	4.7
Environment	3.3	3.7	4.7	4.7	3.0	3.0	4.0	3.3	3.5	2.7	3.3	2.7	2.7	4.3	4.7	4.3	5.0	3.7	1.7	3.7	1.7	4.3
Electronic	4.0	2.3	3.7	4.0	3.0	4.3	2.3	3.0	2.7	3.3	2.0	1.7	2.7	4.3	3.7	3.7	3.7	3.7	3.0	3.3	3.3	4.0
Composer	2.0	1.7	2.7	2.7	1.0	2.3	2.7	2.7	2.0	2.3	4.0	1.7	2.3	4.7	4.3	3.7	4.3	4.3	2.3	4.3	1.3	5.0
Korean	4.0	2.5	3.0	4.0	2.5	2.5	3.0	3.5	3.5	3.5	3.5	3.0	4.0	4.0	5.0	5.0	5.0	4.5	3.0	4.0	2.0	5.0
Earth Science	5.0	3.0	3.0	3.0	2.0	2.0	4.0	1.0	2.0	3.0	2.0	1.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	3.0	5.0	5.0
Chinese	2.0	1.0	4.0	4.0	2.0	4.0	2.0	2.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	2.0
Soldiers	3.0	4.0	4.0	5.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	5.0	4.0	4.0	4.0	5.0	4.0	5.0
Total	3.7	2.8	4.3	4.2	2.7	3.3	2.9	3.1	3.0	2.9	3.1	2.9	3.3	3.9	4.3	4.2	4.4	3.7	3.0	3.7	2.8	4.4

2.7.4 Factors that drive urban and rural students to choose specialized skills

Based on the table below and the chart on the right hand side, we can draw the conclusion that the students who are studying in downtown are averagely rated parental guidance factors, Living conditions, scholarships, fee, and job market which are the crucial factors that motivate them to choose major for Continue their study at university. However, the data did not show any of the factors that are not important at all, the rest of the remainder is moderate and less important.

Likewise, for students who are studying in the countryside, they evaluate a

number of factors that are very important in motivating them to choose skills for continuing their studies at the university such as parent guidance, living allowance, scholarship, fee, job market, good curriculum and teacher guidance. For other factors, they are considered as moderate important to motivate them to choose skills for continuing their studies at the university. As we analyze the students from both the region, we see that a number of important factors are parents' giudance, job market, scholarships, living expenses and university fee.



Tabel 12. Influcence factor and school region

Factors	School location								
	Urban			Rural			toal		
	Average	Number	Sig.	Average	Number	Sig.	Average	Number	Sig.
Teacher	3.62	371	0.986	3.70	323	0.965	3.66	694	0.976
School concil	2.84	371	1.097	2.83	321	1.002	2.84	692	1.053
Mon	4.18	372	1.029	4.36	323	0.979	4.26	695	1.009
Dad	4.05	372	1.133	4.30	322	1.037	4.16	694	1.096
Friend	2.74	371	0.973	2.67	323	0.946	2.70	694	0.960
Relative	3.27	372	1.144	3.28	323	1.083	3.27	695	1.115
Former students	2.80	372	1.010	3.02	322	1.012	2.90	694	1.016
University advertisement	3.02	372	0.971	3.09	323	1.046	3.05	695	1.006
Directed letter from	2.92	371	1.033	3.07	322	1.050	2.99	693	1.043

the university									
Information from the university representation	2.87	372	0.920	3.04	323	0.960	2.95	695	0.942
University campus	2.95	372	1.129	3.19	321	1.064	3.06	693	1.105
Near home	2.92	372	1.330	2.91	323	1.345	2.92	695	1.336
Location of university	3.31	372	1.094	3.27	323	1.088	3.29	695	1.091
Availabel accomudation	3.74	372	1.886	4.03	323	1.877	3.87	695	1.887
Living allowance	4.27	372	0.896	4.40	323	0.759	4.33	695	0.837
Major's fee	4.16	372	0.909	4.32	322	0.800	4.23	694	0.863
available Scholarship	4.32	370	0.929	4.45	323	0.796	4.38	693	0.871
The University's reputation	3.61	371	1.037	3.85	323	0.922	3.72	694	0.992
University student number	2.91	372	1.086	3.13	320	1.034	3.02	692	1.067
Curriculum	3.60	372	0.973	3.78	323	0.884	3.68	695	0.937
Family hobbies	2.73	372	1.349	2.89	323	1.341	2.80	695	1.346
Job Market	4.29	372	0.975	4.47	323	0.740	4.37	695	0.878

2.7.5 Factors That Drive Girls and Boys Decide to Choose Specialist Skills

On the other hand, according to the gender analysis of the student, we see that:

- Male students emphasize on a number of factors, such as job market, scholarship, living allowance, parent's giudance. As for the remaining factors are moderate important to encourage student to choose skills for university study, and there are only two factors that are essential to distinguishing skills at universities: School guidance, family guidance and family tradition.

- For female students, they think that the direction of the father and mother, the availability of scholarships, the skills, the job market, the ability to earn money for daily living, and university fee are the major factor in driving them to choose the skills they love and want to continue studying at the university. We do not see any of the least important factors because the factors are much higher than the average (2.50).

Overall, we can conclude that the key factors for motivating students to choose skills in the university are: 1. the ability to earn money for daily living, 2. Scholarship, 3. Job market, 4. Living allowance, 5. Parents guidance.

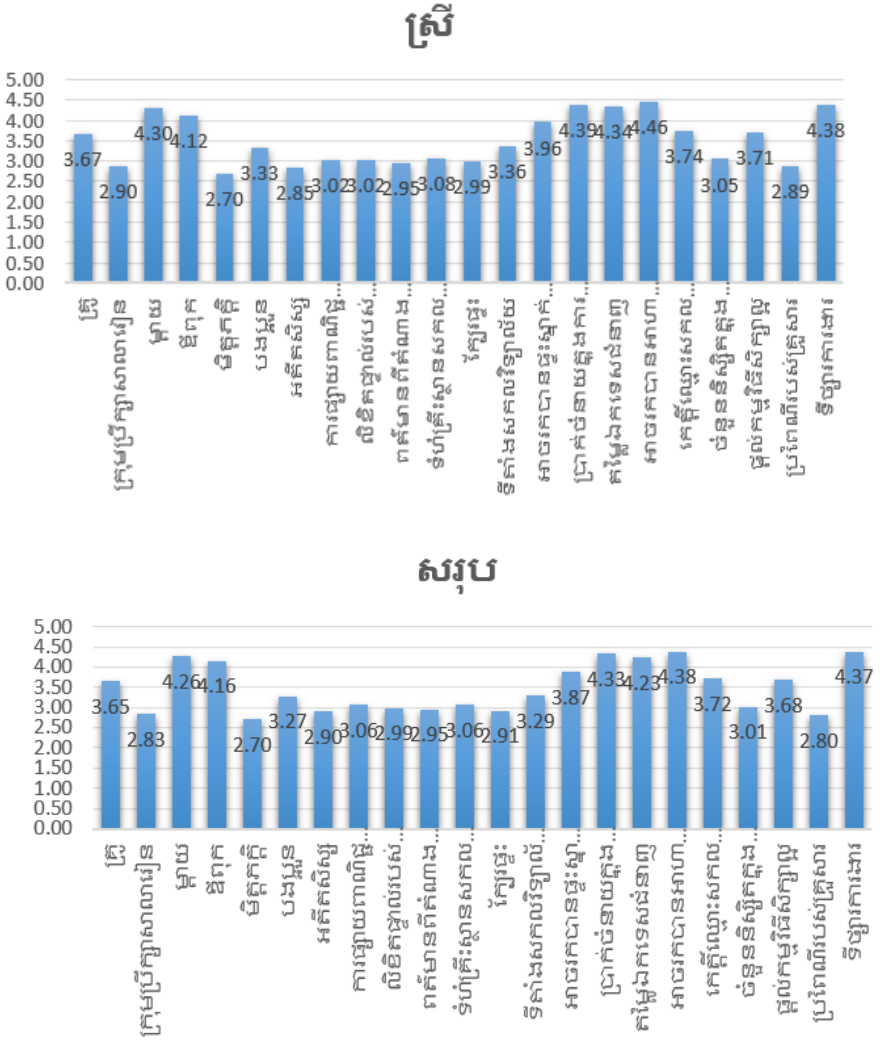


Table 13. Influcence factor and student gender

Factor	Sex								
	Male			Female			Total		
	Average	Number	Sig.	Average	Number	Sig.	Average	Number	Sig.
Teacher	3.63	314	0.968	3.67	378	0.982	3.65	692	0.975
School concil	2.76	313	1.045	2.90	377	1.058	2.83	690	1.054
Mon	4.22	315	1.043	4.30	378	0.982	4.26	693	1.010
dad	4.21	315	1.037	4.12	377	1.144	4.16	692	1.097
Friend	2.71	315	0.979	2.70	377	0.947	2.70	692	0.961
Relative	3.20	315	1.146	3.33	378	1.082	3.27	693	1.113
Former students	2.97	315	1.083	2.85	377	0.954	2.90	692	1.016
University advertisement	3.10	315	1.028	3.02	378	0.984	3.06	693	1.004
Directed letter from the university	2.95	314	1.039	3.02	377	1.039	2.99	691	1.039
Information from the university representation	2.95	315	0.941	2.95	378	0.945	2.95	693	0.943
University campus	3.04	313	1.116	3.08	378	1.094	3.06	691	1.104

Near home	2.82	315	1.308	2.99	378	1.351	2.91	693	1.333
Location of university	3.21	315	1.091	3.36	378	1.084	3.29	693	1.089
Availabel accomudation	3.77	315	1.969	3.96	378	1.818	3.87	693	1.889
Living allowance	4.26	315	0.845	4.39	378	0.827	4.33	693	0.837
Major's fee	4.11	314	0.878	4.34	378	0.837	4.23	692	0.863
available Scholarship	4.28	315	0.943	4.46	376	0.799	4.38	691	0.872
The University's reputation	3.69	315	1.008	3.74	377	0.979	3.72	692	0.992
University student number	2.97	314	1.059	3.05	376	1.075	3.01	690	1.067
Curriculum	3.64	315	0.952	3.71	378	0.926	3.68	693	0.938
Family hobbies	2.70	315	1.285	2.89	378	1.390	2.80	693	1.345
Job Market	4.36	315	0.890	4.38	378	0.870	4.37	693	0.878

4. Conclusion

Based on the above research, we could see that some of the students in the future may be less effective skills in their career, more often change their job and some can face unemployment too. The institutions that will employ those students may face problem and staff rotating. This factor also affects Cambodia's development too. Since grade 12th students in the 2016-2017 academic year choose veriety of specialization in pursuit of higher education, we can conclude that they will not encounter many problems in finding a job after leaving the university. The results of the research showed that the factors that influence on skill decision manking of the students are: parents, guidebooks, counseling from friends and the university's reputation. In addition, the decision in selecting the skills between urban and rural students is very different.

Urban students select the collegue major on Business, Architecture, Medical, Mathematics, Chemistry, History, Geography, Khmer literature, English and International relations more than any other major for continuing higher education. Rural students have decided to select major on Physics, Biology, Electricity, Agriculture, Engineers, Law and Accounting. On the other hand, some majors such as Information of Technology, Banking, Marketing, Public administration were also selected by both rural and urban students. We see that Cambodian society is rich in human resources with conscious in helping reducing illiterate and some of the challenges in society. In terms of continuing higher education which grade 12th students in rural and urban areas choose, there is no significant difference, but rural students face more difficulties than students in downtown. In addition, the research team has studied the students' passion for their favorite subjects in high school and recruited postgraduate level such as: Mathematic

(studying electrical engineering), physics (medical and management), chemistry (engineer, accounting, and banking), Biology (accounting, marketing, architecture, law), earth science (laws, agriculture, IT, and engineers), Geography (management, law, public administration, information of technology, marketing, and businese), History (Management, Electricity and markets), English (Electricity and businese), and French (mathematics). According to research, some students have not yet made the right decision on the specialist skills they need to pursue at state and private universities as described above. Therefore, the Ministry of Education, Youth and Sports and relevant departments should facilitate these issues by providing a suitable solution for them. The above results show the importance of higher education, a key factor contributing to the youth employment market as well as affecting national economic growth. Choosing major for colleuge is very improtance for the youth which is the way to the labor market in the context of the world. The quality of education is also a major factor in the success of the labor market in modern Cambodian society. This study enables us to understand the latest issues of recruitment of higher education, employment issues and the labor market, as well as the development of our Cambodian human resources to become a ecucated society and prosperity in accordance with the policies of the Royal Government of the 21st Century.

5. Recommendation

As a result of the above research, there are some problems in choosing a major for higher education at universities in the Kingdom of Cambodia.

1. There should be an explaination by the High School principles committee on the accuracy of the specialist skills and preferences during high school to students.

2. The institution that handles pamphlets distributed to students about the university's reputation should emphasize the purpose of each subject in a specific way.

3. Students should consider their preferences in their favorite subjects at high school before deciding to choose major for their higher education. Student should avoid from wrong decisions which may destuct their ownseft and the nation.

4. There should be a wide media throughout the urban and rural area which could reach the students´ parents.

5. The school administrator should invite parents to provide consultancy services for their child's education skills.

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The reading status of students at upper secondary level

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Abstract

In the vision of the Ministry of Education, Youth and Sport "Build and develop human resources with the best quality and virtue in all areas,and build up Cambodian society to be in progressive based on basic knowledge and skill". The Royal Government of Cambodia has also issued a sub-decree 120 on Friday, March 11 to mark the National Reading Day (Sub-decree 120 ANKRP), and the Ministry of Education, Youth and Sport is responsible for organizing " National Reading Day "to restore and sustain the reading culture of the students.This research emphasizes the importance of reading books as well as reading material that students and academic centers can do to enhance their skills, as well as to improve their individual lives and senses.The purpose of the research is to understand the reading status of upper secondary school students.To find out about the different interests and habits of the students related to reading situation.The reading status of the current students is best, based on the responses of 448 students, 99.6% claimed that they were read and 0.4% did not read.The reading time of the students is not the same, while some students beginning to read from primary school with51%,students reading last year 20%, students started reading at high school 15%, and just reading this year is14%.The maximum of this reading per week is only twice to three times, and regularlyreadings is only 27%.At the same time, students read from 3 to 4 per week with 21%, students read less than 2 times a week 3%, and only 2 or 3 times before the exam is 1%.However, the number of hours spent reading books is less than one hour38%, students read with one hour32%,and read from 2 to 3 hours is 30%.Moreover, students read textbook53%, while the teacher reads only 31%.Anyway, students read general books 28% while teachers read 29%.Beside this, students have accessed to other information to get knowledge such as 53% of the social network, 29% from T.V, 12% from radio, and 6% from local authorities as well as other sources.Students have different behaviors when reading a book, some reading loudly, quietly, or quickly and take note, and some other reading only as entertainment.Each time of reading, they always choose something related to their preferences or what they want to read, by using pencil-take note and learning how to capture the main points

of the article, and taking it into account or do discussing with friends, and some other students read by creating Questioning or questioning while reading.The reading rate of the students in the 5 provinces is different, Mondulkiriis 44%, Sihanoukville is 86%, Koh Kong 90% and Kampong Speu98% and Kampong Cham does not have students reading yet because the respondent does not clearify and the answer is 0%,and even if each province does not have 100% readiness, those provinces do not have much challenges as Kampong Cham province because the students in Kompong Cham province has not read the book at all.If we compared students reading to a year ago among the three regions, the districthas read74% while the urban students have read59%, andin rural orin disadvantaged areas have read57%.According to these data, the reading rate of students are relatively low compared to the reading of them in the current school year, as in this academic year, in downtown students read up to 99%, rural areas read up to 99% and disadvantage areas reach to 100%.Although the reading data are high, but the readings capacities are low, because the regular reading of urban students is 27%, rural areas is31%, and remote or disadvantaged areas of 23%, and besidesthis readiness,the most reading efficiency is only 2-3 hours per week.As a result, the reading of the students is not good and accurate.When reading books, students often encounter challenges such as distractions from families, difficult to understand, not having enough time to read and healthy problems.On the other hand, student livelihood is also a major problem because 93% of them live with their parents, while43% of their mothers and 60% of father are being farmers.The biggest challenge is that 86.2% of students do not have enough time to read the book, but they have any other jobs to do as helping parents to do housework.Moreover, some other helped grow vegetables, raise livestock, mercenary, so the percentage of students reading books is only 0.03% among all of them.Additionally, students spent much more time on learning with 2 hours per day about 25.5% and 3to 5 hours per day 71%.By the way, motivation and encouragement students to read books are involved with teachers, families and school´s leaders.In general, school´sleaders do not have new books for them to read, and when they are reading, the students need a quiet, comfortable place, library and, in particular, to tighten the exam.With the desire to pass an exam at the end of the school year, so there is only 89% of themreading but it is lacking participation and encouragement from teachers, parents and families.Based on the above data, student´sparents do not understand the value of reading and have not yet encouraged and motivate their children to read more competitively. Therefore, students´parents should continue to work hard and motivate this reading intensely.Teachers also need to encourage and motivate students to read because students do not clearly understand the problems and the benefits of reading.

1. Introduction

1.1 Pattern of Research

Based on the vision of the Ministry of Education, Youth and Sports on building and developing human resources, Cambodia has the highest quality of life, full citizenship, and the highest quality of virtue in all aspects.In order to build a Cambodian society to become a prosperous society based on basic knowledge and professional skill.

The mission of the Ministry of Education, Youth and Sports is to manage and develop the education sector in response to the needs of socio-cultural development in both, the region and the world.

The objective of the Ministry of Education, Youth and Sport is to: (1) Develop the spirit of youth and young people to be proud, ethical, and good virtue and optimistic for their nation and its people.(2) Ensure that all Cambodian children and youth have an equal chance of obtaining quality education in accordance with the Constitutionand the Royal Government of Cambodia's commitment to the United Nations, Convention on the Rights of the Child, non-discriminatory, including socio-economic status, ethnicity, religion, language, gender, and physical condition.

Based on education policy of the Ministry of Education, Youth and Sport 2014-2018 focuses on (1) Ensuring access to equitable education services(2) promotion of quality and responsiveness(3) Ensure the leadership and management effectiveness of all levels of education officeswhich issue in the Education Strategic Plan 2014-2018[1].In Strategic 1 and 2, it involves the provision of educational services and academic quality improvement.Thus, in the government sub-decree, the Ministry of Education, Youth and Sport is also responsible for the reading problem of Cambodian children.

Reading is very important to contribute to reducing illiteracy and accessing information or information from everywhere and to broaden your thinking[2].(Education Strategic Plan March 2014).In the context of the globalization era, in many countries around the world, it has been dedicated to the day of the Book or World Book Day reading in order to motivate its citizens to have good habit of reading throughout life.In the other countries such as ASEAN also celebrates the National Day of Reading every year[3].For Cambodia, on September 14, 2015, the Cambodian government also issued Sub-decree No. 120, and set March 11 to celebrate National Reading Day annually, under sub-decree 120[4].The Ministry of Education, Youth and Sport is in charge of organizing this National Reading Day to restore and sustain the culture of reading.After the standard 3-year trial (2011)[5], the Primary teaching Hours

[1] Education Strategic Plan 2014-2018 March 2014

[2] MoEYS, Education Strategic Plan March 2014

[3] Cambodia's reading culture and its reading role in education

[4] Cambodia's reading culture and its reading role in education

[5] Cambodia's reading culture and its reading role in education

Research from 1st grade to 6th grade in the academic year (2010)[6]and in grades 7-9, the academic year (2009)[7]saw a steady decline in student reading.Therefore, the Ministry of Education has also inspired and disseminated the movement of school or community reading in collaboration with development partnersbuilding a library of books in these schools and communities as much as possible for the students to read.Promote writing, editing, and book publishing to contribute to Cambodia's literacy culture and the role of reading in the education sector (Sub-decree 120)[8].According to sub-decree No. 120, the Ministry of Education, Youth and Sports organized the National Reading Day of 2016 under the theme "Enhance reading habits, promoted culture of reading" Intend to enhance reading and composition skills in order to take part to protect and strengthen Cambodian culture which organized at the Royal University of Phnom Penhand these include narratives, reading articles, fiction books, poems and exhibitions (Press release, MoEYS, 2016).

1.2 Problem of research

Because researchers observe that in Cambodian society today, students are less likely to read books or texts as well as other frequently textbooks.On the other hand,students are less concerned and do not pay attention on strengthening their knowledge or professional skills.Moreover,dislike reading books, magazines, journals or stories books and other articles are a cause ofyoung students gettinglessly knowledgeable and incompetent.Some students have bad habits, do not plan for a good life and successful.Reading all kinds of books is important to develop skills and ability to make people behave in good way, dignity, and live orderly.Therefore, reading or not reading the book causes individuals to have a decent, unreasonable knowledge, not able to correctly analyze the problemand not making life shining brighter as some people in society.This is why researchers have raised the topic of reading status of high school students in their research.

1.3 Research objectives

The purpose of the research is to find out, 1. The reading status of upper secondary school students,2. Understand the student's interests and habits in reading,3.Incentives and promotion of reading for high school students.

Reading books and articles that students and learning centers can do is to enhance and broaden readers and learners´ skills, as well as to organize and motivate livesto be betterand better.

[6]Cambodia's reading culture and its reading role in education
[7]Cambodia's reading culture and its reading role in education
[8]Cambodia's reading culture and its reading role in education

1.4 Research questions

Responding to the Settlement above, this research focuses on the following questions:

1. What are the characteristics of the current situation of secondary school students and what are some of the challenges?
2. What are the factors that drivesand enhances student readiness?

1.5 The importance of research

Reading books and texts students can strengthen and expand their ability to organize and improve their individual lives.This study will provide comments to the Ministry of Education, Youth and Sports to prepare strategies or procedures to encourage students who have been studying in upper secondary schools totryreading books and articles that are useful for their studying and living.In addition, the study will also provide somecorrect solutions to the students and interest of reading attractiveness.The research papers are also important for researchers, companies or development partners who are contributing to the education and development education sectors in Cambodia.In particular, provide some keys to solve the problem of disorders reading at the upper secondary level, to be remembered and be carefully reading and reviewing.

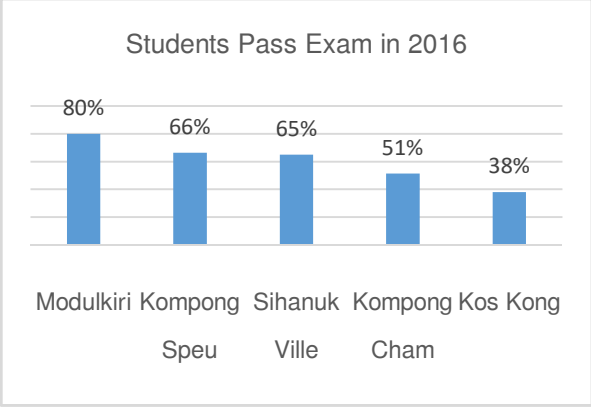
1.6 Limitations and Scope of Research

The study selected only 5among 25 provinces and cities in Cambodia.Therefore, the results of this research are not universal, and this research focuses only on grades 10, 11 and 12 of the 2017-2018 academic year.The research does not represent students at all levels of the school year but the researchers expect the reading status of the students may not differ from one school year to another.so that the researchers chose only 5provinces and upper secondary schools level.

2. Research Methods

2.1 Examination of samples

Figure 1.Exam Result of upper secondary school students in 2016



In this research, five selected provinces were divided into three categories.Provinces with upper secondary,medium and lowest percentage(High School Diploma, Candidate Statistics and Advanced Course Examinations: August 22, 2016, MoEYS)[9] as

[9] Candidate Statistics, High School Diploma, General Education and Testing Module: August 22, 2016 (Report of the Youth and Sport Education Commission dated September 10, 2016.

shown in figure 1. The schools in each province were chosen based on downtown and rural downtown.This selection makes the province and the sampling of school representative can across the country.

2.2 percent of the sample

There are 450respondents, including students, guardians, and teachers of all three levels.

Students: All three levels of 450 students are selected from 5 provinces in which targeted schools and upper levels, so that one High School recruited 30 students and 10 students per level.

Teachers: In oder to know the real situation of the students in reading, 45 teachers are also recruited into 3 schools for interviewing and verifying student learning achievement.

Guardians: Parents or guardians of students are selected by the terms and conditions as well as teachers, three of guardians are chosen in per school, as a total of 45 guardians in this sample. Then the information received from all of three categories was analyzed via SPSS and Excel.

3 Data collection

Data are collected in two ways:

A. Primary data: received from students, teachers, and parents directly at the school, in order to verify the information received from the questionnaire. At the same time, parents, and teachers are also interviewed.

B. Secondary data: The secondary data was collected from the website of the Ministry of Education, Youth and Sport and the National Institute of Education as well as other sources.These data included monthly newsletters and annual reports of the Ministry of Education, Youth and Sports.

C. Data Analysis: After the interview is completed, all received information has been inserted into the table of data and statistics in order to do analysis as graphs in Excel and SPSS program by binding the code to the questionnaire.The correct data will be taken into account as a percentage in order to find out correlation and link to the topic, exploring the real reasons why students do not read books and will motivate themto read again.

4. Research results

4.1 Reading Status of Students at Upper Secondary Level

Table 1. Students currently read

Categories	Number	%
Yes/No	448	99.6
No	2	0.4

The students currently read at least 99.6% of the 448 students.Based on the above mention, students are aware of the importance of reading books.The effortness of reading book is due to the quality education reform of the Ministry of Education, Youth and Sport in 2014and even though,

students reading, they did not fully understand the contents and benefits of their reading, and the results of these reading were not good.

Table 2. Time of reading started

Categories	N	%
Since primary school	229	51%
Since high school	65	15%
2 years ago	3	1%
Last year	89	20%
Just this year	62	14%

Reading and writing are part of knowledge, and inheritance for student's learning.Generally, reading focuses on memory but does not require thinking or analysis.Students who started reading from primary school were 51% and at upper secondary school were 15%and those who started reading two years ago were1% and beginning to read last year were 20%, but those who just started reading in this academic year were only 14%.

Table 3.Data on student- teachers books always reading

Students		Teachers	
Textbooks	53%	Textbooks	31%
General Books	28%	General Books	29%
Newspaper-Magazine	5%	Newspaper-Magazine	17%
Social Network	14%	N/A	24%

Among 450 students, there were 53% of them reading textbooks and 28% were reading general books.In which 5% of them reading newspaper-magazine and students who were reading news or social media were 14%. Reading different types of documents does not provide enough capacity development butit is important for them to gain more knowledge for life.

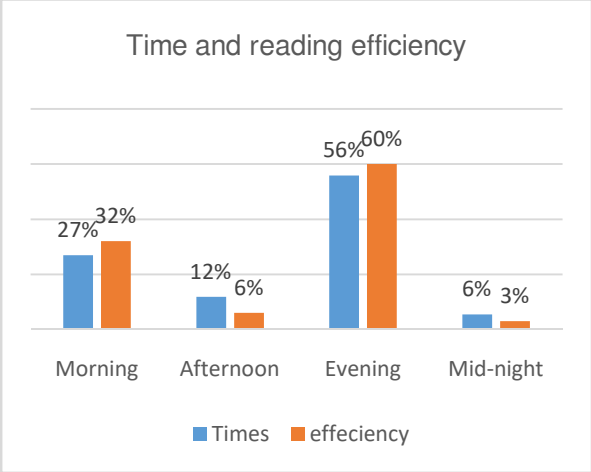
Table 4. Number of students read per week

Categories	N	%
Read less than twice a week	11	3%
2 to 3 times	216	48%
Read three or four times a week	96	21%
Read regularly	122	27%
Read only 2-3 times before the exam	3	1%

Having a habit of reading is difficult for some students, becausesomeone of themdoes not have a habit of reading and can not read for hours, and if they can do itsrequires a lot of patience.According to Data, students who read less than twotimes a week were only 3%, while students reading two to three times a week were 48%.andstudents who read three to four times per week were 21% and the regular reading were 27%, while some other reading for only examinationperiodwith two or threetimes per week and especially read only subjects that they will do examination. Based on the above data, it can be assumed that

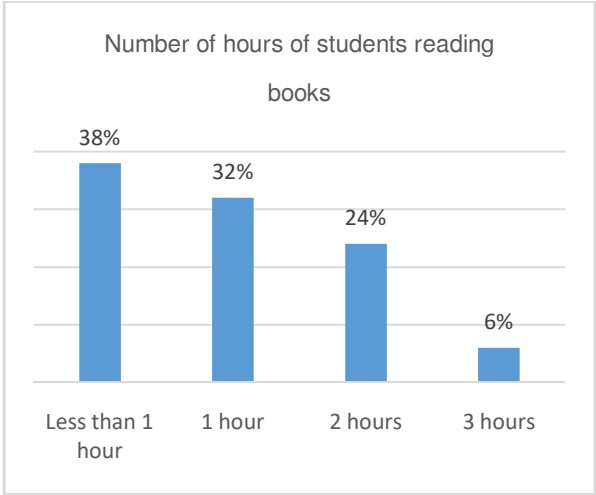
students do not fully understand the benefits of reading.

Figure 2. Time and reading efficiency



At the same time, the student's reading efficiency is not the same,because each of them reads books at different times.some readinghas done in the morning, afternoon, evening or night and midnight.Among the times of reading, the evening reading time is 56%, eventhough, reading in the morning27% and reading at midnight 5.5% and it is lower than the evening reading time 6.5%.Reading at midnight is ineffective because everyone needs to relax and is not sure to get the true knowledge.Reading at different times is based on the individual's ability and personality to gain the knowledge.Some students believethat reading in the evening is the most effective, and reading in the morning is also feature for some students because it is 32% of resopndents replied, but reading in the evening is 5% lower than reading in the morning times.

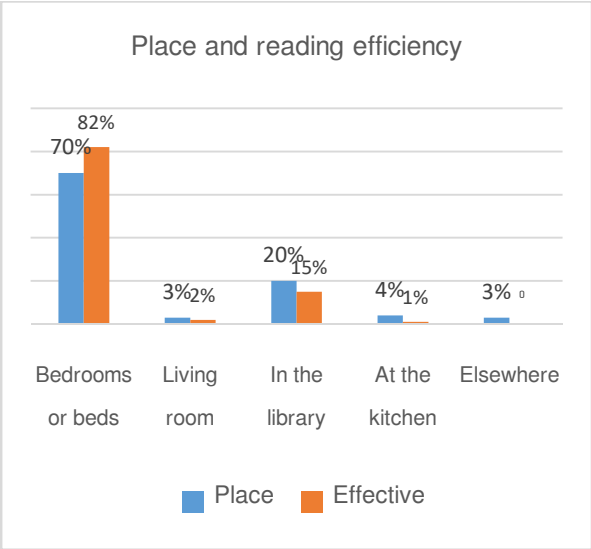
Graph 3. Number of hours of students reading books



In figure2 show that, most of students are able to read books or texts not more than one hour, as the percentage received is only 38%. This indicates that students are not yet accustomed to reading books or other texts.If that, students should try and practice reading in order to become a goodhabit of reading book, because each of them is still at school.For students who has read with one hour is 32% and two hours is 24%. As the above data shown, the percentage of students reading is decreased from 38% to 32% for one hour reading books,and reduceto 24% for two hours reading and to 6% for three hours reading. Becauseresult ofstudents' reading is belowedthan 50%, so that studentsshould have to try and continue reading books as more as possible, and stakeholders such as parents, guardians, teachers, school principals, provincial of education department, Ministry of Education Youthand Sport should be encouraging students to re-read.At the same time, reading less than an hour or an hour can be more

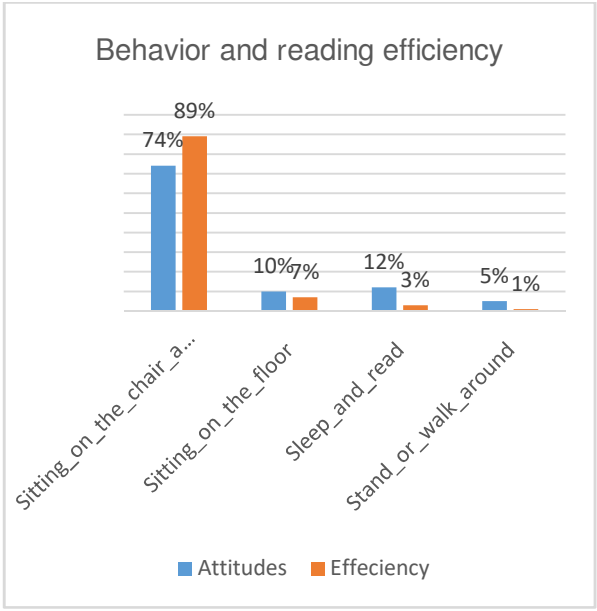
effective and more knowledgeable than the reader for two or three hours.Because the long reading period demanded that readers be mindful, good-hearted and uninterrupted.

Graph 4. Reading areas and readability



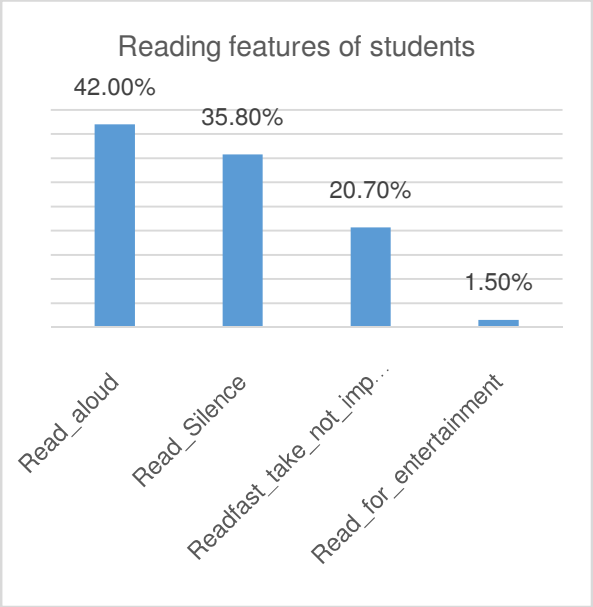
The reading efficiency depends on where and when the reader likes it.The readers can choose different places according to their preferences and related to this reading, 70% of students claim that the favorite place of their reading is a room or bed, and it is 82% of its effectiveness.In this case, students enjoy reading books in the library at about 20% and its effectiveness is only 15%and some other students like to read books in the living room, kitchen and other places.Eventhough, the readers in those places did not have a high percentage, it was only 4%.Therefore, the location and effectiveness of reading for students to gain knowledge is depended on the interests of the readers and the motivation that each of them has gotten, such as monthly exams and national examinations.

Graph 5.Behavior and reading efficiency



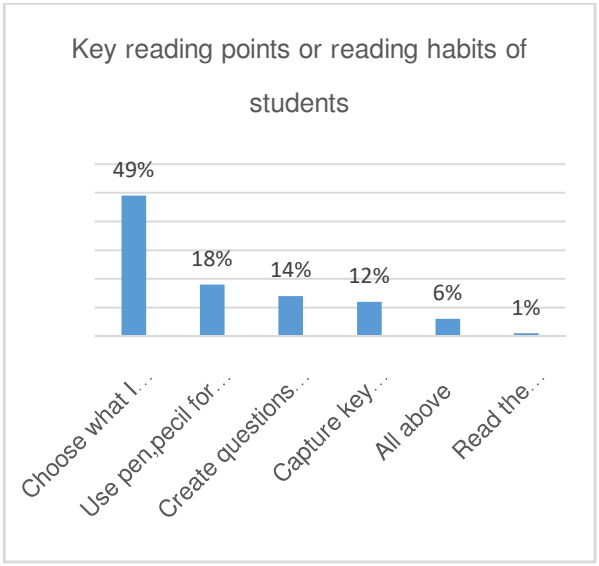
In order reading be effective, the reader must have a fair place, needs serenity, tables, chairs, and a good atmosphere and reading efficiency is associated with students' behaviors and features.Students always choose a place to read and use their own natural behaviors directly.Students who claim as above paragraph is74% and it is 89% of its effectiveness of their reading, andwhile reading, students prefer to sit on the floor 10% and their efficiency is 7% and students who has slept reading is 11% and its effectiveness is 3%.Reading by walking or sleeping have a negative impact on readers´ physical fitness.The walker or stander reading is5% and its effectiveness is only 3%.Therefore, in order to have an effectiveness and knowledgeable of reading, students need to have a decent reading position and be well-prepared to read.

Figure 6. Reading features of students



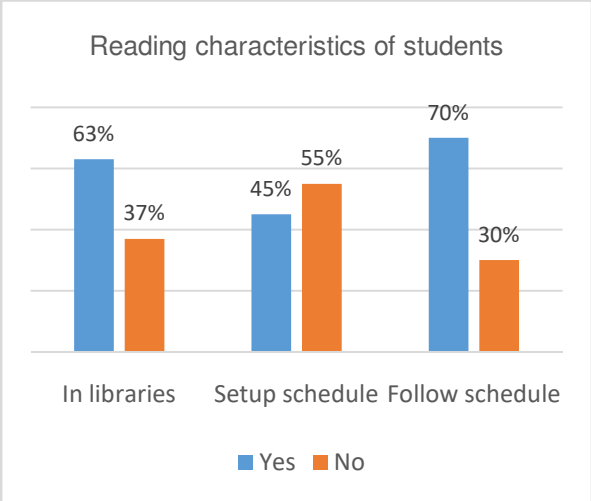
The data shows that, each student has different personality and reading styles, while some readersneed quietly, some readers like reading faster or recording important points and some reading for entertainment.Among the four types of readings, the loudly reading rate was 42% highest.The silent reading was 36%, the reading faster, and recordedthe important point was 21%, and the reading for entertainment was 1%.The different reading features of different students also bring the different knowledge, skills and attitudes to them.

Figure 7.key to reading or reading habits of students



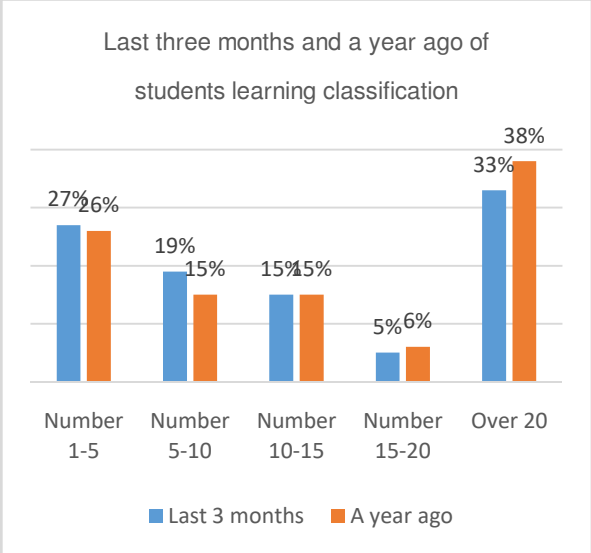
Beside choosing the right places, and preparing the reading behaviors effectively, there are some key points about student´s habit.First, students choose what they want to read, then use a pen or pencil to take note, and sometimes they ask questions while reading, and slearn on how to take important points from textsin order to take into account with friends, and then makes conclusions.According to the above data, 49% of students choose what they wante to readat first.However, the student raises some issues or key points of reading, and taking into account with friends, compiling with only 1%.This indicates that after reading, students have not been able to write the contents of the article they read.As a result, reading does not seem to be noticeable, and requires each of them to bemore focused on and to do futhermore reading.

Figure 8. Reading characteristics of students



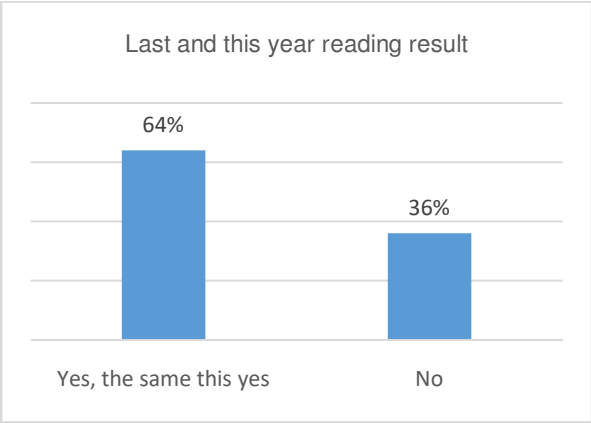
In orderbe more effective in reading and good quality, students need to have enough books to read, so that school libraries should have books related to those subjects that students have been studying.Reading does not focus solely on the subjects it´s needs to study but involves other subjects.For effective studying and reading, students need to have a clearly plan, schedule and follow it as well.Graph7 shows that, students read in the library was63%, while 45% of them prepared schedule for reading themselves and 70% of those followed his/her schedule regularly.Based on this data, students were careful to read and prepared well for their reading.However, those readings were not yet completed, as those were less readable as shown in the second graph.

Figure 9. Classification, the last 3 months and 1 year ago of students learning



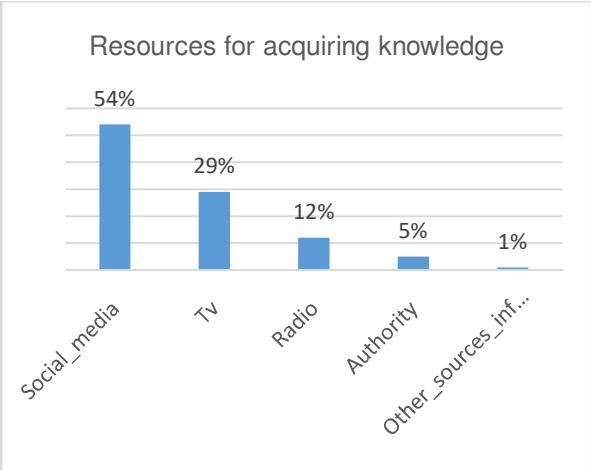
Students classification in the past three months rank from 1 to 5was 27% and 26% for the previous year, and the rank ofstudents which is over 20 was 33% in the last three months and 38% inthe previous year.This data shows that three-month and one-year-students' performance results were not good because they did not read textbooks and other books.That why students did not get enough knowledge, inadequate quality and ineffective.Therefore, teachers, school heads, parents, stakeholders,or donors have to cooperate and encourage students to read more and more books if they want them to gain more knowledge with quality.

Figure 10. Reading and unreading results in the previous year



According to the data, students who read a book a year ago accounted for 64% of the 450 students, and 36% did not read the book at all.The percentage of students who did not read books reflects and risks of not getting sufficient knowledge align with the Ministry's quality education reform.Therefore, it was important to pay more and high attention from stakeholders in education sectors and they would haveappropriate policy such as,urgenlypromoting, encouraging, creating libraries, providing sufficiently textbooks for student learningand reading in those areas.

Graph 11. Resources for acquiring knowledge



Even though, students did not read books altogether, but they knew that they could learn from other sources such as radio, television, magazines, news, social media or information from local authorities and other information available.Align with that imformation, the knowledge that students received from the social network was53%and then 29% from TV channels and 12% from radio, and the information obtained from local authorities was 5% and 1% from other sources.Based on the above 5 datas, it means that students did not have the ability to find a good information regarding their education. On the other hand, the ability of foreign languages was limited so students could not get enough of those information effectively.Generally, students got knowledge from instructions, lecture, and those knowledge was not yet deepened.

4. Differences in reading between provinces and regions

Reading is important and compulsory, so each of them has to make more responsility for this task. Reading will provide knowledge, skills and make the reader behave positively in living and working.In Mondulkiri also, 44% of students read books since the previous year while 56% of them did not read the books yet.The largest number of students reading in Sihanoukville was 86%, in Koh Kong 90%, and in Kampong Speu98%. For Kampong Cham province, there were no book readers at all in the

prevoius year while data received was 0%. The problem of unreading was more severe than Mondulkiri province and required the provincial department of education in this province encourages and motivates students as well as school heads, teachers, and altogether have to do some campaigns, promote information of the advantage of reading to the students carefully and quictly.

Graph 12. The reading status of student by provincesin the last 2 years and this year

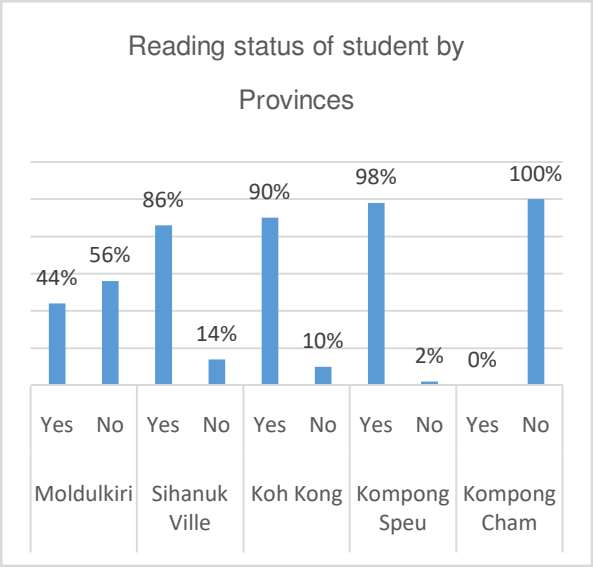
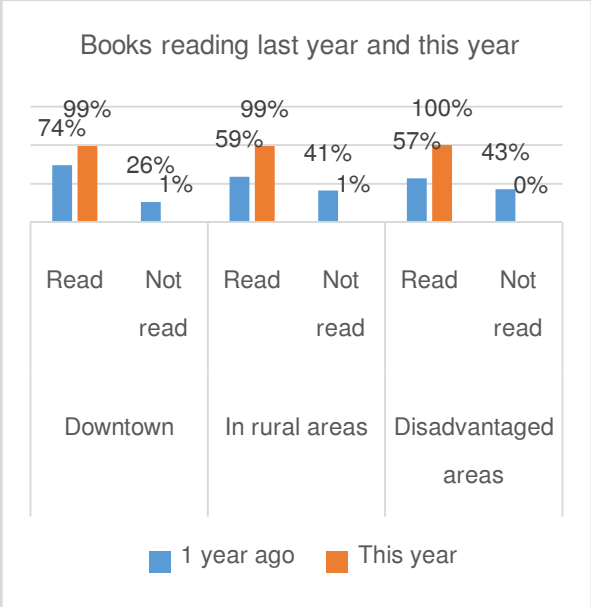


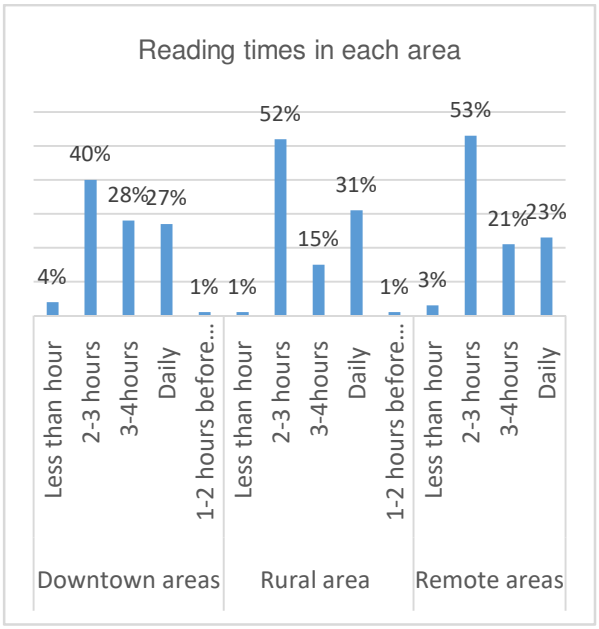
Figure 13. Books reading last year and this year



Compared to the three regions of the five provinces where the students lived and learned.The schools in urban areas have read 74% a year ago, and 99%readsinthis academic year, 2016-2017.For unread students, 26% were in urban areas a year ago and 1% were unreadable in this year.On the other hand, in rural areas, the percentage of students reading were 59% less than the reading population in urban areas 15% during a year ago, while those reading in this year were 99%,as the same as urban area.The number of students who did not read was 41% a year ago and 1% did not read in this school year in rural areas.For disadvantaged areas, students read 57% a year ago and 100% in this academic year, and students who did not read were 43% a year ago and 1% in this academic year.The above data means that the student's reading illustration is uneven and the level of reading comprehension is differing.Because learning and getting knowledge is not the same among them, so that students have a different understanding of the benefits of reading.To compared to the reading of students in the three regions of the academic year.In disadvantaged areas, students read 100% exceeded the previous year up to 43%, and in rural areas, 99% of students read in this academic yearexceeded a year ago 40%, and in urban areas, students read in this academic year25% exceeded the prevous year. According to the above data, the reading of students has evolved and

increased.The increase ofthis reading is due to the quality education reform and quality exams of all levels strengthening, especially upper secondary school level, by the Ministry of Education, Youth and Sports throughout the country.Strengthening the quality of the exam is also encouraged,awarded and providedscholarships to students for accessing to universities with someone who has gotten rank(A).

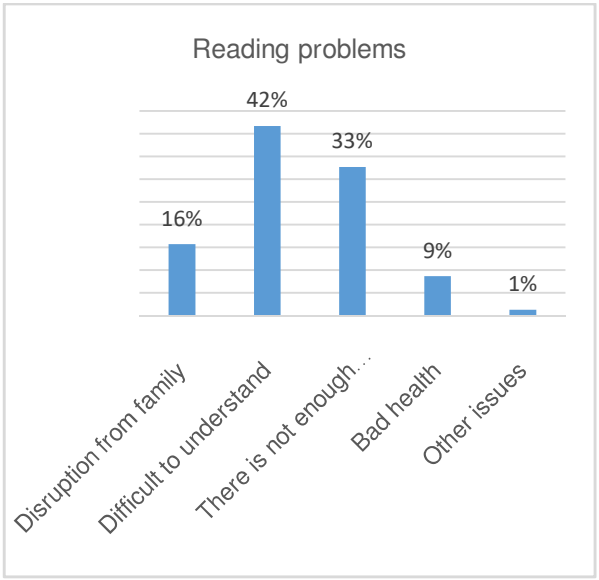
Graph 14. Reading times in each area



Although the three regions, students have read nearly 100% in this new school year, it is unlikely that students get good results at the end of the school year.The reading effectiveness relates to the number of hours´ students reading.In response to the reading time of 2-3 hours in the downtown area, students have read 40%, rural area haveread52%, and in remote areas, students have read 53%. In addition, students in all three regions have read less than 32%.That's why reading of upper secondary students is not goodquality and has not yet gained enough knowledge from their reading.In addition, in order to help students to do more reading, parents, guardians, teachers, management team, leaders, ministries of education as well as stakeholders should be encouraged, and motivated studentsto read by providing materials or textbooks in all five provinces and the regions should be improved the quality of learning, the ability to access better knowledge as stated in the MoEYS reform.

4.2 Constraints

Figure15. The challenges of students reading



There are other reasons: 1) There are not many books for reading. 2) do not feel like reading. 3) Busy and have a lot of work to do.

The reading challenges of the students were varying in three regions of the 5 provinces.When reading a book, some students find it difficult to understand the

contents or meaning of the text, and those who have difficulty in reading and understanding are 42%.The effective reading books, students need to be healthy, bright, and habit of reading.However, when they havehealthy problem it can be affected to physical and mental well-being of them, such as headache, dizziness, fatigue, and the main problem is that the student does not have enough timeto read.In general, students spend a lot of time driving home, and going to school, walking or biking, and sometimes they have doing homework and the students who has met this problem was33%.Another problem is family's disruption with 24%, they have had their own healthy problems.Futher more, living condition is also an important factor that affects students' learning, reading and is also the basis of their relationships and studies.

Table 5. Student living conditions

Categories	S.numbers	%
Parents	417	93%
Cousin/Sibbling	11	2%
Relatives	19	4%
Monk	3	1%

Based on the answers of all three level of the students, 93% of students are in charge of parents.Students who has lived with cousin, relative and monks were 7%.Among three kindsof these students, they should read more and more books in order to develop their capacities of understanding, while some of them are lacking supported, motivation, and encouragement.Therefore, they must have a certain knowledge or professional one, so that the lives and the future may be better after graduated, and even if these students do not pay more attention studying or read books, their livelohood may not be so great and it may have affectedto society.

Table 6. Parents and students ambition in the future

Students			Parents		
Categories	N	%	Categories	N	%
Own Business	92	20 %	Own Business	4	9%
Civil Servants	261	58 %	Civil Servants	37	82 %
Companies/NGO	97	22 %	Companies/NGO	4	9%

In Table 6show that, 58% of students want to be civil servants, while 81% of their parents want the children to be civil servants too, and 22% of students and 9% of parents want the children to be employees, companies or non-governmental orgainizations(NGOs).On the other hand, 20% of students and 9% of parents want to run their own business after graduated. This assertion means that some students plan their own ways to move forward to the future

and retured a brightlife.In order to achieve these objectives and aspirations, studntsneed to read a lot of books while they may not have enough knowledge and a guide to success at all.

Table 7. Reasons for selection of subjects

Categories	S.numbers	%
Hobby/Fevorites	431	95.8
No options	19	4.2

The reason for selecting a subject is also an issue because the students are unclear and rely solely on personal preferences in the choosing subjects they need to learn.Many them did not think of social, economic, and political changes.This is also a matter for the Ministry of Education, Youth and Sports, because the Ministry as well as schools are lackingof counseling on students´ choice.Taking only a small amount of knowledge and following a friend is a mistake for their personal lives.According to the above data mention, students chose subjects of personal preference with 96%, while 4% said they had no choice.This proves that, the choice of students is unclear, so they are less likely to read the book.

Table 8.Parents career and employment

Work categories	Fathers		Mothers	
	N	%	N	%
Famers	272	60%	194	43%
Vendore	21	5%	64	14%
civil servants	75	17%	24	5%
employees, NGO workers	12	3%	2	0.4%
mototaxi drivers	38	8%	0	0
laborers	4	1%	38	8%
Wagerers	6	1%	2	0.4%
poultry producers	9	2%	6	1%
housewives	4	1%	119	26%
Other	9	2%	1	0.2%

Parents occupation is also a barrier and has an impact on students´ aspirations and learningatmosphers.The above table shows that,60% of father's and 43% of mother´s works asfarmers, in thatcase, 17% of fathersand 5.3% of mothers´s worksare civil servants.The fathers acted as housewives with 0.9% and 26.2% of mother performrd as housewives.In addition, students´ parent work as laborers, mototaxi drivers, poultry producers, professional employees, NGO workers and vendors.This data shows the reasons and effectes on students learning and reading books,due to, students´ parents receive low income to support their family's living conditions. The rich or medium income families may be keep their children in college, and the poor families may take their children out of school or sometime forced them to stop studyingimmedately.Therefore, the Royal Government of Cambodia, the Ministry of Education, Youth and Sports should make it easier and provide them an appropriate

opportunities and good condition in learning and pursue studying at higher education.

Table 9: Travel from home to school

Categories	Interviewer	%
Less than 1 km	46	10%
1-3 km	225	50%
3-5 km	65	14%
5-7 km	49	11%
Beyond 7 km	65	15%

Distance travelling is also a factor affecting reading, studying, and learning achievementbecause long distance travelling may spend much more time and have less times to read.Also, students travel from home to school with 1-3km10%, while some othertravel from 3-5 km with 11% andgo beyond 7 km with 5%.This argument, itcan be estimated thatabout 60% of students have an opportunity to read because theirjourney from home to school is very closed, and about40% of other students may not have much time to read the books.

Table 10. Student traveling and rotation

Categories	N	%	Session	N	%
Walking	75	16.7	Morning	137	30.4
Riding	63	14	Afternoon	21	4.7
Motor-riding	312	69.3	Both	292	64.9

Going school from home among 450 students, 17% of them by foot, 14% by bicycles and 69.3% by motorbike.The course of studyingis an uneven distribution, especially in the morning and in the afternoon.Students who have both times, morning and afternoon session is 65%. Learning both sessions can also be challenging and affecting on the quality of learning and reading because students do not have enough time to read.Moreover, students have not yet learned to read, so reading is not necessarily of a quality.

Table 11. Time of lunch

Categories	N	%
At home	372	83%
Bring food to school	43	10%
Food store buying	35	8%

Traveling to home to have lunches is also reduced the reading time.Students who have brought food from home to eat at school isonly 10% and students who have bought school meals is 8%.If the student did not go home but go to the library for reading is goodbut students returned home is at 83%.This means that the student does not read and does not have enough times to read because of the amount of time spent on traveling home or school.

Table 12. Student activities after lunch

Categories	N	%
read	97	18.70
A little sleep/Have a nap	25	4.80
Talk with friends	76	14.60

Extra-learning	306	58.8
Other	16	0.03

After lunch, students who have read books were 19% of the 450 students,about 5% of themrelaxed, and 15% of them made jokes with friends, not focusing on reading and59% other are having additional learning.According to the above data, about half of the students´ love studying, love reading, or learningsocial subjects, but some other students focus solely on science subjects.Therefore, the head of the Provincial Department of Education Youth and Sport as well as the Ministry of Education, Youth and Sports and DevelopmentPartners should consider how to select these two subjectsimpartially.

Table 13. School hours and extra-hours per day learning

Learning hours of school state			Extra-learning hours		
Times	S.t	%	Times	S.t	%
4 hours	146	32.4	1 hour	10	3.2
5 hours	96	21.3	2 hours	79	25.5
6 hours	119	26.4	3 hours	81	26.1
7 hours	89	19.8	4 hours	66	21.3
X	X	X	5 hours	74	23.9

Learning hours are a major problem because it affectson learning and quality of education.Therefore, teachers and school heads should focus and promote on the quality of education through Education reforms of the Ministry of Education Youth and Sport.In the above table, students who study four hours per day were 32.4%, students who study5hours per daywere21.3%,and 6 hours per day with 26% and 7 hours per day were 20%.Trough, this situation, it means that school hours are mixed, because some students study one shift, and some other learn both two sessions. Therefore, the turnaround students have more opportunities and time to read books than the two sessions learning students.That's why it occurred and adversely affected the quality of education. The extra time of students´learning aim to improve their ability, while some of them spend at least 1 or 2 hours per day and some other spend until 5 hours per day.

Table 14.Average attendance of students per month

Categories	N	%
Never	254	56.4
1-2 days	117	26
2-3 days	61	13.6
3-4 days	15	3.3
Over 4 days	3	0.7

Table 14indicates that students who are absent from 1-2 days are 26% and from 2-3 days are 14% and from 3-4 days are 3.3%.This absent means that the student does not learn and read the book.The

Concerning issueinvolvedstudents absent from1-4 days and beyond 4 days per month is up to 44%.This means that 56% of them are enrolled but those are not sure to read the books.

Table 15. Student performance beyond study

Categories	N	%
To do housework	426	86.20
Grow vegetables	5	0.01
Animal feeding	26	0.05
Wagerers	7	0.01
Read books	17	0.03
Other	13	0.03

Challenges that affect on student´s learning and reading because they have haddaily jobs to do such as housework helping,in order to ease their parents´ jobs.Among 450 students,426 students,equally 86%claim that when they leave school, they need to do houseworks.some students, growing vegetables, raising animals,employment, so that students who have read books are only 0.13%.Based on this answering, many students do not readable and do not mind reading their books or lessons.

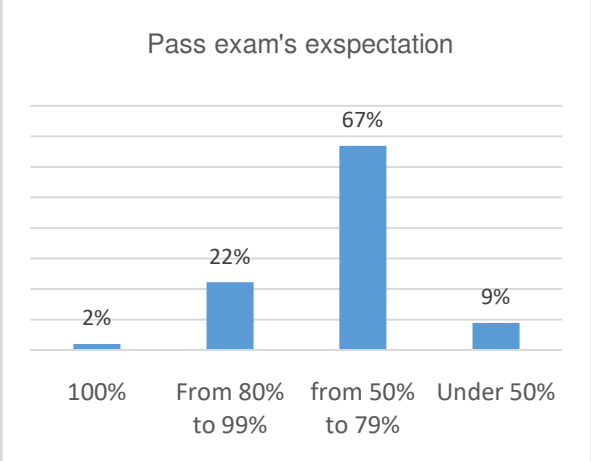
4.3 Motivation Factors

Table 16. Conditions that make students want to read

Categories	N	%
Encouraged by family, teachers and have enough reading books	60	13
Good location, quiet and comfortable	197	44
There are libraries and new books to read	138	31
When the test/exam is restricted	55	12

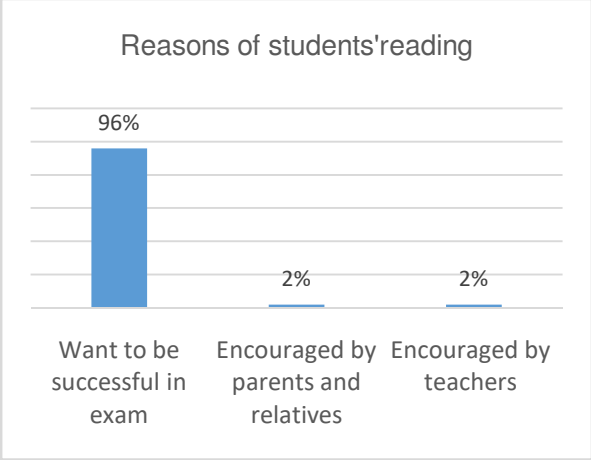
Eventhough, students have difficulty in reading, but there are four conditions that they want to read.The first condition is 13% of the 60 students who are encouraged by teachers, and family but they arenot having enough books to read.The second condition is that 197 students, equally to 44%, need a quiet, comfortable place to read the books. The third condition, students want to read books if the library has equipped with new books,and the fourth condition is, because the Ministry of Education Youth and Sport tightens the exam and focuses on quality of education as important.

Graphic 16. Hope in exams at the end of the school year



Due to reading islimited by students, and theyarenot lovereading completely.That is why students are hesitant to emphasize the expectations of their academic achievements, especially the 2016-17 academic year result.As a result, the percentage of expectations on the 100% study result at the end of the school year in 2017 is only 2%.Expectations on average outcomes from 50%-75% were 67% and 80%-99% were expected at only 22%.The above results can prove that some students do not read books or texts so they do not have confidentially in themselves.Therefore, students should receive additional counseling and encouragement from management team, teachers, or parentsand other stakeholders to make sure students return to read and write, the results of studying are positive and get better.

Figure 17. Reasons why students want to read books



According to the data, there is a lack of engagement and encouragement from parents, relatives as well as teachers, and the argumentation of both sides is only 4%, and because they want to pass exam,as a result of the exam, they read up96% of all 450 students.The motivation of parents, relatives, and teachers is 4%.This indicates that, the partners involved with students have not yet encourage and motivate them.

4. Analyze and make conclusions

4.1 Data Analysis Methods

In this research, thetwo types of dataare used: secondary data and primary data.The secondary data gathered from the Ministry of Education, Youth and Sport's websites,Documents of the National Institute of Education, and library.These data are: monthly, semi-annual, annual reports of the Ministry of Education, Youth and Sport, documentation of development partners in the field of education related to the topic.

Primary data is available for interviews of students, teachers, and parents in 15 of the 5 provinces.

4.2. Data interpretation

Interpretation data relies on charts and graph analyzed in SPSS and Excel. Through quantitative and qualitative quizzes, elaborate them according to the content of questions and subject areas.All data is analyzed,based on the content of the questionnaire and the answers of students, teachers and parents, to make sure the reader easy to understand.

4.3 Conclusion

Research topic on"Reading status of upper secondary school students"was organized base on educational context and quality education reform of the Ministry of Education, Youth and Sports in 2014-2015.The data that students, teachers, and parents provided,the researchers make some of the following conclusions:

Books reading data among the three regions is 99% in both urban and rural areas, but the number of reading hours is still lowed.In general, students read only one hour or less than onehour per day with 70%, and the regular reading is27%.This means that students do not have the habit of reading yet, because they read in only a short time period, thus, 53% of students read textbooks, and students who read books or general documents were 28%. Most of students read books because they want to passan examination at the end of the school year, especially in grade 12thup to96%.On the other hand, the number of students reading books at the library was 63% and they did not read books in the library 37%.Some students do not read books because of they have an extra work out of their learning activities such as to do housework, or employee.However, 3% of students read a book after they leave school.The urban students, any way, read more books than rural and remote students a year ago, and students in downtown have read at least 74%.In this aspected, 59% of rural students and 57% of remote villages have read.For the new school year, the reading momentum for students increased dramatically in rural and remote areas.The reading of downtown students has increased to 99%as well as in rural areas, while the number of isolated areas students increases up to 100%.However, incentives students are relatively low, only 2% of them received the encouragement from teachers and 2% of other students received encouragement from their guardians.Thus, in order to make more progressive reading, all stakeholders must be encouraged and participated in this movement,and the other 44% of studentdemands and finds a comfortable and quiet place to read.Besidesthese requirement, students also reguest a good library and would have enough reading books as needed.

Students are neglected to read and do not have the habit of reading, as most of them have the task to fulfil and help the workload of parents at home or at business places.Students have not yet become accustomed and irregular to read because of learning session is differently, and some of them have extra-hours learning while others refuse to go to the library.This issue occurs because students evaluate social and scientific subjects differently and consider science subjects ismore important than social subjects.That's why most of students spend more time studying science than social subjects by learning much timeson science subject.At the same time, when reading

books, students suffer and trouble from families 15%,and 42% studentsdifficult to capture core content of the article, including the difficulty of capturing the key points of the article.

With regard to learning and reading today, students are also satisfied with the educational environment, the quality and the curriculum of the school as important and necessary as well-educated, so students are demanding that the school be qualified, well-educatedand safe, well-equipped of material for learning and teaching process.Schools could have a curriculum adapted to the context of the development of the world's society and to the needs of the contemporary people.Furthermore, involving school buildings, environment, infrastructure, teaching methods, quality materials, equipment, teaching and learning materials, textbooks, basic curricula, management, discipline, libraries, and incentives.Among the above arguments, no more arguments are highly appreciated by students.Therefore, the Ministry of Education, Youth and Sports, as well as public schools, stakeholders, and educators need to modernize on those arguments in times, so that it can improve the quality of education of the students.

In general, reading is beneficial for scholars, as it does not have enough time and lack of encouragement.At the same time, living conditions are also a barrier that affectson reading and student learning.That's why sometimes students careless about reading but worry about personal problems, family issues and some social issues, such as corruption in the education system. The personalization, society-economy in the country, there is a significant impact on college students' study, because scholars have to pay tuition fees, study materials, and housing and catering costs.Therefore, some students lack of ability,discouragement, and giving up their education, while those who are able to complete their studies can not find suitable jobsto support their family's living conditions, and on the other hand, narrower and limited work in state institutions.

The factors mentioned above have affected on students learning, especially in rural and remote areas as well as in downtown.This problem has caused students to be reluctant, unwilling, and unable to cope with these difficulties.Therefore, educational institutions should pay more attention and provide good conditions for students in those areasby encouraging, advising, supporting, providing material for studying or providing better accommodation.

5. Recommendations

5.1 Description of the improvement points

By observing that, the students in the provinces in the sample encountered with some challenges in reading, both now and in the future.Thus, the researchers would like to request the Ministry of Education and relevant stakeholders to support students in those provinces by:

(1) Schools as well as lecturers should encourage and motivate students to re-read books by creating a reading competition between students and students, between teachers and teachers, with reward or awards, according to their abilities and resources, in partnership with communities, local authorities, or donors.

(2) Each school should have a well-equipped library, good environment, adequate equipment for learning and teaching, especially reading books in order to attract students, teachers, and communities to read and research.

(3) The Ministry of Education should provide adequate documentation and instruction to students, lecturers and other reading materials,particularly, urban and downtown, rural and remote areas, because those areas do not have sufficient documentation for learning and reading.

(4) The Ministry of Education should provide training courses on reading skills to the teachers, students, and refinements, new teaching methods, by using online research methodology and information technology.

(5) The Ministry of Education should eliminate extra-hours learning by strengthen learning and teaching capacities in the classroom, because some students do not have a budget to study.The students who have learned should not have much times to read books, and teachers should train their students as much as they can in state time.

(6)The Ministry of Education should permanently eliminate corruption in the educational system amd make truth,belief and confidentialon leadership of the ministry as well as the education sector as a whole.

(7) The Ministry of Education should construct new school buildings instead of dilapidated school buildings in rural schools, creating public libraries or mobile libraries for students reading, especially in those schools which lacking of libraries.

5.2. The continuos studying

This study is not yet comprehensive, because all data receive from the reading of the five provinces are not comprehensive. Further more, the reading rate of students in the three regions is belowed50%.Therefore, the reading of the student can not be considered as effective and quality. Moreover, the five samples did not fully assess the reading results of the students across the country.

Thus, it is suggested that, the topic should be furtherresearch, particularly on the reading problems of upper secondary school students, and how to gain accurate reading information from students across the country, in order to help improving and encouragingthem toread regularly in life.Without reading, the studentscan notreceive a real issues, adequate, and comprehensive knowledgeand they do not know the benefits of reading and learning,

and becoming a good citizens infamily and society in the near future.

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Quality of Technical Education at General Secondary and Technical Schools in Cambodia

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Abstract

Quality of education on technical subject is an important factor for transferred Cambodia from lower middle income country into a high-income country by 2030 and the developed country by 2050, Education is one of the most important an angle to transfer students training through theory learning and practical workplaces at school. To achieve this goal, it depends on the many inputs for the training of human resources in the general secondary schools and technical schools throughout Cambodia.UNESCO defined the factors influencing on the quality of education, such as qualifications teachers, curricula, teaching materials, and learning outcome of student. However, research on quality of technical education for general education and technical schools in Cambodia currently focuses on 5 high schools among 7 in 2017. The results finding that the quality of technical education at all of these schools is limited, which may from many factors, such as: (1) qualifications and capacity of teachers are still limited, (2) the curriculum is not responsible to local labor market and comparison with some of the countries in the region, (3) the learning materials for teaching in class are not sufficiently responsive to the situation of the actual training (4) the student's achievement is also limited in the actual practice of each subject they have studied at School.Therefore, in order to achieve developed country policy by 2050, the Ministry of Education Youth and Sports should increase budget and deepen reform plans in order to ensure teaching and learning students receiving the highly quality on technical education by transforming them to be a good producer in a society and economy development based on knowledge.

1. Introduction

Cambodia became a member of the Community of Southeast Asian Nations on December 31, 2015, which required this country to make every effort to develop the economy to compete with other countries in the region. At the same time, the Royal Government of Cambodia for the 5th mandate (2014-2018) has set out a vision to transfer the country from lower-income middle countries into a higher-income country

by 2030, industrialized country by 2025 and will become a developed country by 2050.

To achieve this ambition, the Ministry of Education, Youth and Sport has worked hard to reform all sectors and sub-sectors to receive a high quality human resource, the (Moeys)has transformed the general secondary education to become technical education at the provinces and cities to in order to ensure students completed at grade 12th, they became having the specialized technical, good mentally, moral dignity and good citizens who contributed to develop family economy, and society such as slogan said (learning to earn income for living and living for social service purposes).The quality of technical education are a key factors of the royal government's ambition.

2. Background of research problem

According to a survey of the preparation member countries (ASEAN) in 2001, Cambodia ranked 8th among of the 10 members (ASEAN), which achieved Electronic, E-commerce, E-government and (Moeys) have 698 general secondary schools in Cambodia but only 6% have electronic, only 13% of electricity, 8% use generators, 4% use electric power, and 75% do not have any energy (Ministry of Education, Policy and Strategies, Technologies, Information and Communication Technology Telecommunications in Education 2004) .

According to research report from (KOICA) in Cambodia, the young Cambodians about 60% under the age of 24 received technical education in schools, and they are still no clear assessment on technical education and marketing needs (KOICA, 2014). On the other hand, the situation of technical education in general secondary schools in Cambodia is currently facing (1) lack of material for teaching and learning, (2) the number of enrolled students are still low (3), Limited capacity of teachers (4) lack of quality, training efficiency, and (5) lack of communication between schools and companies (Moeys, Master Plan for Technical Education at Upper Secondary School 20) 15-2019. The technical education System in Cambodia has yet to develop because most students drop out of lower secondary education and they do not want to continue their study caused subjects not the pursuit of a non-professional and earns high salary. The objectives was to find out about the key factors affecting the quality of Technical education at technical schools in Cambodia. The research questions waswhat factors affect the quality of technical education subject at Technical Education School?

3. Research Methods

This research will collect data throw quantitative and qualitative which include, interview, questionnaire, quiz and will focus on principals, teachers, and students from 05 Technical Education Schools among 07

throughout in Cambodia (2017) such as: (1) KromGnuy Institute Kandal Province, (2) Sihanumy Institute Kampong Chhnang (3),Santafranhvor Takeo Province (4), Kampong Cheor Teal institute Kampong Thom Province and (5)Puk high school Siem Reap Province. The questionnaire is divided into three types, (1) the school principals, the vice principals, (2) teacher and (3) students. The content of questionnaires are divided three(1) focused on the ability, skills, capabilities, and teaching methodology related to the subject technical education (2) focused on the teachers' capacity to implemented the teaching methods and leading experiments on technical education subject (3) focused on content, curriculum, technical education subjects (electronics, mechanics, agriculture and accounting) and theoretical learning in the experimental classroom as well as the results of the study. For quantitative data, the sector analyzed through the SPSS and quality data are organized into a group of responses.

3. Results of the research

The 05 technical education schools included institutes that came out of 05 provinces such as: Kandal, Takeo, Kampong Thom, Kampong Chhnang and Siem Reap. This data were collected through questionnaires for principals, teachers and students to quiz and questions for interview.

3.1 Data analysis

This research finding based on the data analyzes the through quantitative and qualitative method. Result analyzes will present as the following:

3.2Data description

This data is divided into 02 parts: (1) qualitative data (2), quantitative data, and each sector is divided into several sections by the target group.

8.3 Qualitative data

A. School Principals and deputy principals:

This data received from 01principal, 01centers, 02 institutes. The interview is the most important tool for data collection , which focuses on (1) Competency teachers of teachings and specialized skills based on student centered approach, (2) Other school programs can improve the student's ability through visit the technical education schools and internship at the companies and (3) Other factors affecting the learning outcome of students on technical education subjects such as: increasing material for teaching, field visits, and getting good jobs after graduation. Thus, this result is a reflection the resource management activities in the school, with the guidance and encouragement of teachers to implement the student centers approach.

B. Teachers

This data received from 11 teachers (04 women) in which the contents questions

for teacher interview were focused on: (1) the student's family situation (2) behaviors of the good learning outcome of students is respectful to teachers, gentlemen, industrious, patient, hardworking, and conscientious and poor student behavior, lack of perseverance, patience, and lack of interest in listening to teachers, (3) student's learning on technical education subject such as electricity, electronics and mechanics (4) teacher´s activities of teaching in technical subjects such as: checking the presence of students, review old lessons, starting new lessons, tutorials, homework exercises, (5) School programs that promote student learning on technical education subject through more practice than theory, find new job creation, group discussion, and fieldwork internships, (6) factors affecting student achievement such as: providing employment opportunities with modern technical material for teaching and learning.

C. Students

This data received from students at five schools, including who studied at year1, 2 and 3 on electrical, electronics, agriculture and accounting. The students attended the interview was 145 and interview questions focused on: (1) the student's living condition, (2) the technical subjects are modern learning such as: techniques, environment, agriculture, planting, radio contact, computer services mobile phones, metallurgy irrigation, equipment electrical, (3) management and motivating students to learn technical subjects, improving discipline, teacher training, and motivation students to enjoy a good learning environment, highly qualified teachers, create a club, learning, create libraries, computer teachers, have good teaching methods, contact the company to find work and practice.Therefore, this data reflected the situation of student families who are struggling in their daily life and the condition of their study, which is having difficulties through a lack of documentation, materials and internships.

8.4 Quantitative data

A. Teacher

The data was collected from teachers is based on 3 main themes, (1) specialized subject teaching, qualification, grades, (2) focusing on teaching method, materials teaching, curriculum, teaching-learning abilities, (3) focusing on learning outcome of student.

B. Students

This data received from students focusing on 05 key (1) general information including age, sex, and subject areas such as: electronics, electronics, mechanics, agriculture, and accounting. (2) personal learning refers to subject matter, homework, questions and exercises, study with friends, research in libraries and academic achievement(3) the focus is on specialist skills, homework and teaching methods at school, and encouragement for students(4) the school situation, it focuses on the

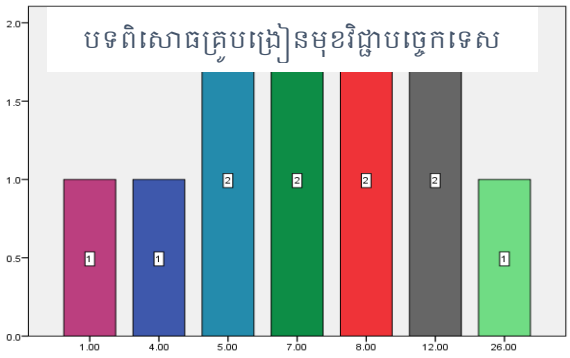
environment, the safety of the materials, the teaching and learning techniques(5) social situation, focus on the job market such as mobile phone repair, television, electric power supply, livestock and payment, household and enterprise income etc.

C. Teacher's qualifications

There are 11 technical teachers, including 5 electricity, 4 agriculture and 2 electronics but among 11 teachers 7 have completed a bachelor+1 followed by a high school diploma teacher. Besides this sstudents complete a technical school or a high-qualified company employee are encouraged by the Ministry of Education to become a full-time teacher by lacking pedagogy training.According to a survey by KOICA in 2015, there are 398 students who have completed their degree from Norton University, the Cambodian Institute of Technology, they wanted to teaching only (31%) and wanted to be a teacher profession (19%), and others are more satisfied with the work of the company than for teaching because they are more paid. The Policy on Human Resources in the Education Sector states that, national and sub-national education officials must have high professional knowledge and skills (Policy on Human Resources in Education 2012) and compared with teachers' standards set by Ministry Education 2009 state that the standard of Cambodian teachers is four: knowledge, professional practice, and professional ethics. The age of the teacher, between 27 and 47 years old, they prove to be full-fledged teachers in their professional duties, such as preparation of lesson plan, teaching activities, production of materials, experimental research, conducting, and organizing, monitoring and evaluation.Thus, the actual situation, the ability of teachers of technical education is limited because most graduates of engineering and agriculture do not become public school teachers because their salaries are lower in the private sector.

D. Teacher experience

Related to teaching experience since 5 years only 9 who have both theoretical and practical skills of teaching electronics, agriculture and electronics. The highly experienced teachers can share knowledge, experiences through monthly technical meetings and classroom lectures.



E. Lesson Plan

According to the professional ethic of teachers in 2008, article 8 states: "All teachers must have the task of preparation lesson plan and defining explanations to ensure the quality of education and the effectiveness of teaching. The figures, the preparation of technical skills teachers' professions have claimed that their teaching

did not base their training on teaching all the time, about 21%. And another 14% said their teaching was based on the lesson plan.Therefore, teachers' teaching does not guarantee the implementation of professional ethics of teachers, and high quality education because the lesson plan is a roadmap of teaching activities include objectives Lessons strategies, teaching methods, to achieve objectivity are key elements of the lesson plan.

F. Teaching materials:

About 21% of teachers said that their teaching does not have teaching materials to support teaching-learning but most teaching is based on theory rather than practice. Schools lacking classrooms, buildings for workshops and laboratories and other places for internships, and 57% of teachers said that, their teaching has adequate facilitiesto ensure the quality of teaching on the subject, so students can practice well, but the library about 28% of teachers claim that the library does not have a Khmer language document and technical documents, which have no student benchmarks yet. Technical subjects such as:Electricity, mechanics, environment and agriculture, adaptation and accounting are only part of the curriculum, for example, and some schools have organized lessons in the form of disagreements, and some have taken the same document they used. On the other hand, today is the technological age of the 21st century, places technological systems play an important role in all sectors, including education, Internet access to ensure the quality of training through research, innovation, exchanges with local countries. Approximately 90% of teachers claim that their schools have an Internet connection for teaching, researching, and downloading documents and experiments of some countries. In general, the Ministry of Education has set out a policy for training (ICT) to a pedagogical student in this field aiming at creating website, audiovisual and commercial equipment at the center Post-secondary Education (policy and strategic use of ICT in education.2004).Therefore, it is assumed that the Technical School of Technical Education has facilities for serving students with inadequate training, including libraries, with no technical documents for research purposes.

G. Labs

Generally, teaching science subjects, especially in technical subjects, is required for laboratory and experimental materials, the teaching of theory associated with the implementation of the policy of teaching science subjects requiring a laboratory initiated by JICA (2001).The Asian Development Bank (ADB) Project 2005 also initiated the building of a Resource Education Building located at 36 high schools across the country. The structure of the building is referred to as a tower, a meeting room, a computer lab, a library, and a laboratory. The structure of the building is referred to as a tower, a meeting room, a computer lab, a

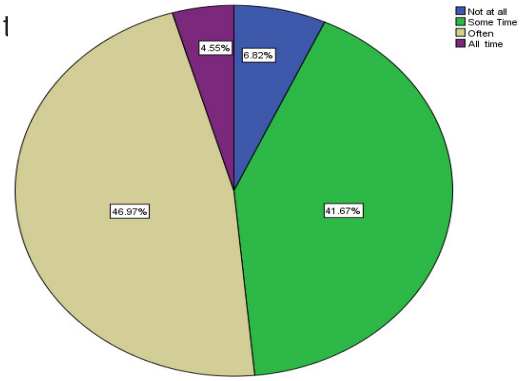
library, and a laboratory. This goal is to ensure better teacher performance in the field of experimentation. In particular, the five technical colleges currently running are 18% of teachers claiming that there is not enough labs yet for technical training, which makes them students only theoretical and lacking experience to develop skills.

3.5 Teaching - learning activities of technical education

A. Teaching methods implementation

Teaching method implementation is very important to teach students in all disciplines in class. The student´s center approach have provided a good learning outcome such as knowledge, skill and attitude through content and students' experiments. In fact, figures show that 18% of teachers do not teaching by student center approach, which received learning outcomes is bad. The reason teacher cannot teaching by student center relating the lack teachers training system to become teachers. The Ministry of Education and Sports has set out for public and private institutions that have implemented the methodology of student centered approach since 1996.The providing opportunities, learners are brain activity, requiring students to apply a variety of ways to gain knowledge, skills and attitudes from the lesson content .Letting students to read the lesson is a way to help students acquire different information from the lesson content Daily and create memory, comprehension, and analytical abilities (the six levels of Bloom Taxonomy, 1956). According to research figures, about 45% of teachers require students to read the lesson regularly and some teachers do not require reading by the teachers, allowing teachers or lecturers to listen. In addition, encouraging the students to read other material related to the lesson is not the same, there are very few teachers who have encouraged students to read the material and some teachers are not interested in it at all.

According to figures in the data, some teachers do not have experience at all, and 30% of teachers have demonstrated regular student experience, and then the teacher also allows students to start their own experiments, which is the task of increasing the skills in the subjects studied. Teachers about 30% give students an opportunity to experience themselves, and some teachers do not allow the students to experience themselves. This result show that, the school have a small laboratory and few students do not practice or the teacher does not encourage the students to participate in the experiment because the teacher does not think that the experiment has helped to build



B. Providing feedback

The providing feedback to students after learning the theoretical and practical aspects. In general, providing feedback is a chance to correct mistakes and encouragement students to change what is right and what is a mistake. The figures show that a few of teachers do not provide feedback to students, and teachers about 45% provide feedback to students to change and follow up on mistakes. Teachers about 56% show that the school has a school visit program such as visit to a factory, a farm, but it is not long and several times because some places are far from school and may lack funds.

3.5 Teaching process and learning outcomes

A. The student's location provided information

The five technical schools such as: 1. KromNgoy Center (Kandal), 2.Samdech PreahSihamuny Institute (KompongChhnang),3.Puk high school(Siem Reap), 4.Santafronsvor High School(Takev) and 5.Kompong CheuTeal Institute (Kampong Thom). A total of 145 samples are selected, depending on the technical fields from each school.According to figures show that, students are studying at Kampong Chhnang institute (24%) and SamdechPreahSihamumy, Puk High School (31%) but male students about 63% said, some subjects studied at school have not attract students want to continue. Otherwise, school distances can affect girls' safety and some schools do not have building for staying. For elective subjects to students, there are three different levels such as: electric 34%, agriculture 37% and mechanical 5% is lowest, which indicate that some subjects the most students like to study because it apply to market demand improving the quality of life by looking for good jobs both inside and outside and some subjects with fewer students want to continue due to a lack of resources such as: teachers, materials, and equipment and good jobs.

B. Learning process of students

Learning process of students can be achieved a good results are based on learning´s activities with teachers, friends, and self-study in classroom. Self-study is beneficial because it develops personalities by reading, research, and writing, problem solving, and experimenting. The figure show that, 38% daily self-study and 50% sometime self-study. The results indicate that the study of all subjects is not good .The factors that motivate do not students self-study can be taken from teachers do not have a homework or lacking of the test of the lessons learned at home. Apart from self-study, the students also have to study with classmates, schoolmates and generals to group discussion, and do more activities with homework the teacher has provided. In other hand, students learn as a partner and team in order to increase new knowledge as well as to solve the lessons learned. The teaching-

learning process of a teacher with the student center approach to develop skills, practice and attitude, but all abilities depend on teaching-learning activities in class and outdoors. The figures show that student learning´s activities, such as asking questions, raising issues, and consulting with the teachers, are not the same. Students approximately 8% are never asked the teacher and the relationship between the teacher and the students in class, but students whose activities to ask teachers at all times are about 5% mean teacher have the courage to learn with lesson learned, students only 28% who attended the club study, 71% of the students did not attend the club study. Therefore, the results of the students' study in the classroom are not the same.

C.Experimentation

Experiment is the duty of the learner to practice after studying the theoretical classroom. This experiments have helped to develop a stronger student competency, both knowledge and skill. Testing or simulation theory to confirm the reality through practice. Students about 7% who have never participated in the test, and about 5% of students have participated in a regular test and about 21% of students did not participate in the presentation and explanation of the technical lessons in class. Therefore, the reason as above students did not develop their personalities in technical subjects through participation, experimentation, interpretation of the phenomenon and exploration technical studies in class.

D. Capacity of students to solving problem

The student's study through remembering, understanding, and problem-solving are reflected the quality of the theory of practice, remember the formula, collaborating, teamwork. The students about 39% have participated in solving problem. Thus, the results of the technical education did not received good quality through remembering formula, collaborating and group discussion in class

E. Learning material

Learning materials have helped increased students´ performance for technical skills. The students about 34% of respondents that their schools do not have learning materials related to technical education subject and about 65% of students claim that their school has lab for practice and 7% claim that their school has no facilities and about 11% of students said that their school did not have a library for finding technical documents for further research.

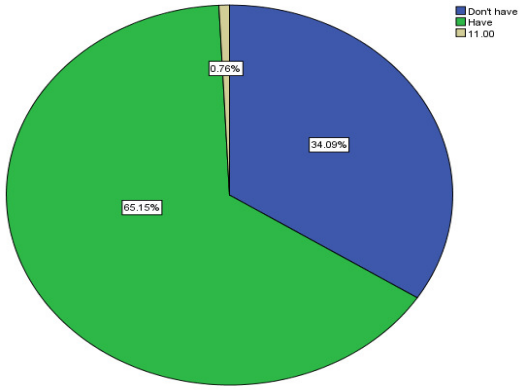
3.6 The principals, deputy principals and teacher to promote the experiment to the students:

The school principals is very important to lead the teaching and learning of students in class. The principals is the internal inspector at school. According to this figure, 88% of students show that, school principals

to conduct regular experiments on students' lessons taught by the teachers which implies that the principals is responsible for teaching, and then promote the teacher experience to ensure the quality of technical training (Vocational Skills 2009). On the other hand, the principal is responsible for encouraging students to practice and library research. About 95% of students said, the principal had encouraged the students go to the library in order to improve their skills.

3.7 Learning Outcome of Student

The results of technical studies reflected the work of the social and economic development. On the other hand, the quality of technical show through students´ capacity on electronics, electronics, mechanics, agriculture, and accounting which reflected the abilities and skills of daily earning in the family as well as the society.The figure show that, about 21% learning outcome is excellent, 49% is good, 21% had quite good and 10% average, which we could conclude that the technical training system was good. Particularly, performance levels are: 43% of students do not have electricity at home, and only 11% dare to power grid, 83% do not have to repair all kinds of TVs, and only 13% can repair all of kinds, 49% of students are planting crops and about 35% of students do not know how to pay for family expenses and 57% of students pay for household expenses. As a result, the quality of technical study has not been satisfactory, although some skills need to be financed to pay for the equipment, but it reflects the lack of sufficient material for the students.



4. Conclusions and Recommendation

Research related to the quality of technical education at technical schools throughout Cambodia in 2017. The results showed positive and negative, but the results of quality studies have increased steadily. Actually, the quality of technical education is reflected in the practical application at society and schooling and the achievement of student performance such as: electrical connection, Repair of computers, mobile phones, generators, electricity generation through solar converters, creams, poultry, crops, payment, etc. they can work for a company that can earn money to support the family and enhancing the social economic. In addition, positive result, there are still negative consequences caused by subjective factors and social attributes. The negative result is that students who have studied the technical fields but do not have the capacity to perform professional practice on the subject matter. Studying such a case does

not justify networking, repairing TVs that they do not have Uncertainty in practice. In addition, they find it difficult to find work to improve their living conditions. These factors may be due to the limited quality of technical training at the moment.

The Ministry of Education should develop a policy onLegal framework for reform to train technical subjects separate from the Upper Secondary School toward (School Based Management) and attraction students who have graduated in both domestic and international have technical skills to become standard teachers. The Technical School should have an enterprise and Company at local community to give works for students and easily find jobs after graduation. In addition, there should be a school website to promote activities, training, and search for students to encourage them to work hard to study in high quality.The Ministry of Education should increase and equip general facilities both the E-Library Building, the Laboratory and the Equipment, are in line with the Technical School standard so that the students who study there get good quality, including the theory and practice, ensuring that the subjects studied will be professional. Can find a job or create a job yourself.

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The ability of teachers to use laboratory in resource building at high schools in Cambodia

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Abstract

The Ministry of Education, Youth and Sports has made numerous reforms to ensure that the quality of education is aligned to the global educational trends of the world and the Asian region in achieving of the goals of education for all. And Cambodia is currently pursuing a scientific study and implementing STEM (Science, Technology, Engineering, and Mathematics) policy. This study aims to: (1) Find out the level of using science laboratory at resource high school, (2) identify the challenges of using science laboratory at resource high schools. Research tools include: (1) questionnaires for students grades 10 to 12, (2) questionnaires for science teachers grades 10 to 12, (3) questionnaires to be filled by directors/vice-directors at resource high school and (4) group discussion of science teachers grades 10-12. The sample included 343 students, 110 teachers and 12 directors/vice-directors in four provinces across the country, Battambang (Netyong and Bvil High Schools), Siem Reap (Kralanh and Angkor High Schools) Preah Vihear (Chea Sim Tbeng Mean Chey and Rovieng High Schools) and Kampot (Prareachsampea and Chhouk High Schools)). In data analysis, the researchers used a mix method to analyze the data both quantitative and qualitative. The results showed that the using of science laboratory in resource building is limited and the challenges of using a resource building, including materials used for conduct experiment are not enough and some materials that do not meet the needs of teachers. Some teachers have never been trained how to do experiments, and some can do little experiments. Additionally, the science teacher knows the material and how to use it a little.

Keywords: Experiments, Science Laboratory, resource building, Science Education

1. Introduction

Today, products derived from science and technology show the level of growth of each country. As a result, each country competes in the education system to be successful in developing the nation. Products derived from science and technology depend on scientific thinking and the use of scientific methods to solve everyday problems

(Guner.T & Nedim A., 2009). Therefore, the main purpose of scientific education is to enhance scientific skills and positive attitudes. The important thing of study science is linking theories to practical application (Íilenti & Özçelik, 1991). Science is one of the main subjects. In Cambodia, we are currently pushing for scientific research and implementation of STEM (Science, Technology, engineering and Mathematics) policy. For students to enjoy science, there are a number of factors, especially experiments that can attract students to study the subject (BIE, 2008; Howe & J ones, 1998). To perform the experiment, it requires laboratory and equipment (DeBoer, 1991). As a result, the Ministry of Education, Youth and Sports has built 36 resource building in high schools in the provinces and cities. These provinces such as Banteay Meanchey (Chup Vary High School and Hun Sen Klang Khoun High School), Battambang Province (Neth Yong High School and Boreal High School), Kampong Cham Province (Preah Sihanouk High School), Kampong Speu Province (Kampong Speu High school), Kampot Province (Phrareach Sampear High School and Chhouk High School) , Siem Reap province (Angkor High School and Kralanh High School), Kampong Thom Province (Hun Sen Balang High School and Kampong Thmor High School), Oddar Meanchey Province (Hun Sen Oddar Meanchey High School), Preah Vihear Province (Chea Sim Tbeng Meanchey High School and Rovieng High School), Stung Treng province (Prahreach Boneykich High School), Rattanakiri province (Samdech out Samdech Mear High School) Mondulkiri Province (Hun Sen Mondulkiri High School), Kratie Province (Kroches Krong High School), Tbong Khmum Province (Samdech Akka Moha Sena Padei Techo Hun Sen Sourng High School), Prey Veng Province (Hun Sen Pupil High School and Preah Ang Duong High School), Svay Rieng Province (Svay Rieng High School and Hun Sen Prestor High School), Kandal province (Tepranom High School and Hun Sen Seripeap High School), Phnom Penh city (Chumpouvorn High School and Chbar Ampoeo High School), Takeo Province (Samdech High School and Chea Sim Takeo High School), Kep province (Hun Sen Chamkar Dong High School), Preah Sihanouk Province (Sihanouk High School), Koh Kong Province (Koh Kong High School), Pailin Province (Hun Sen Krong Tep High School), Pursat province (Pursat High School), Kampong Chhnang Province (Preah Suramarit High School) (Department of Secondary Education, 2011).

Resource center was built with financial support from EEQP (Enhancing Education Quality Project) and Publish financial project (PB). However, no reports have been made about the use of laboratory at high schools. Researchers have designed this study to know how to use laboratory and the challenges of using the laboratory in the

high school of in Cambodia. Research questions are (1) How is the situation of using the science laboratory at resource high school? And (2) What are the challenges of using science laboratory at resource high school? This study aims to (1) Find out the level of using science laboratory at resource high school and (2) Find out the challenges of using science laboratory at resource high school. In this study, the researchers identified the levels of using laboratory and the challenges of using laboratory at resource high schools. In collecting data, the researchers created a questionnaire for students, teachers, directors, vice-directors, and group discussions for science teachers including chemistry, biology, physics, and Earth science. The target of data collection for analysis the results is resource high school.

The experiment plays an important role in teaching science subjects that can make students understand theories and concepts more scientifically. Teaching a science subject without an experiment is difficult to make the students understand the lessons. The relationship between experimental and theoretical are presented in Figure 1 (Reinders & Maike Tesch, 2010).

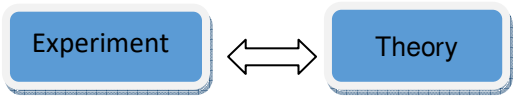


Figure 1. On the relation of experiment and theory in scientific investigations

Scientific teaching in Cambodia today requires teachers to use Inquiry-Based Learning (IBL). IBL is that encourages students to work together to provide answers to their questions rather than directly teaching them what to do with teachers. The work of teachers in IBL is not only to provide knowledge to the student, but to help the students gain his or her own knowledge. Inquiry-based learning is required for the teacher to conduct experiment. To do experiment requires location, materials and chemicals (STEPSAM 2, 2011).

According to the research of Waddington,D., & Schanze,S., (2007) showed that many countries in the world used Inquiry-Based learning(IBL) for teaching. Teachers change their teaching methodology from traditional to IBL. Tranditional methodlogy of teaching is the way that teachers use in classroom by let stuents follow something that has only in textbook, but not give the chance for students find out the answers by themself.

In science subject we shoud know 5 steps of scientific method are indentify the problem, make hypothesis, test hypothesis (conduct experiment), analyze the result and make a conclusion. To get a good result in study science subject is requried teachers to conduct experiment that we called "learning by doing" (McComas, W.F.,1998).

Various aims are affiliated with the experiment in science instruction that show in figure 2. Doing experiment is to show the abstract of science, scientific principles to see the real thing. (Tesch M., (2005).

Aims of carrying out experiments in science instruction:

a) increasing the interests from students
b) Illustrating the significance of science in everyday life and technology
c) Teaching philosophy of science
d) Teaching science processs and scince skills
e) Demonstrating science content issues
f) Helping to develop social skills

According the research of Kircher, Girwids, & Haubler(2009) showed the aims of carrying out experiment in science instruction:

(1) Illustrate a phenomenon
(2) Illustrate science concept
(3) Provide basic experiences
(4) Prove theoretical predictions
(5) Investigate student conceptions
(6) Make familiar with applications of science in everyday contexts.
(7) Motivate student thinking
(8) Build up science ideas
(9) Prove science laws
(10) Know the science process
(11) Motivate and raise interests
(12) Provide sustainable impressions

Other study by Melzel, et al., 1998) showed about aims of conducting experiment in science instruction for 5 points:

(1) Link theory and practice(kirschner & Meester., 1988)
(2) Recieve skills to carry out experiments
(2) Know the way to find out science concept
(4) Motivate and solve social issues
(5) Improve science knowledge

Two other studies that show the same purpose of practicing in scientific teaching are study of Kerr (1964), Swain, Monk & Johnson (2001). The resulf of that study showed that:

(1) Encourage students to have a clear understanding
(2) Show the real phenomenon
(3) Increase interest in study
(4) Increase sensitivity

According to other research studies have shown that teachers and students don't conduct experiment much in teaching and learning science. As a result of this research, the reason why teachers and students have not been experimented with the lack of basic knowledge of experiments such as observation, measurement, drawing, conclusion, and report writing (Guner.T & Nedim A., (2009), Akdeniz & Keser, 2000, Akdeniz & Devecioğlu, 2001). Another is the lack of equipment and chemicals. Experimental practice is needed for equipment and chemicals to conduct experiments. Without laboratory equipment and chemicals, doing experiments were not possible (Akdeniz and Devecioğlu, 2001).

2. Research Methodology

Questionnaires are divided into three parts: For students grades 10-12, for science teachers that teach grade 10-12, and for Directors/vice directors. Researcher also made question for group discussion for science teachers. In order to collect accurate data, the researchers used both quantitative and qualitative approaches.

2.1 Sample

In the course of the study, 343 students, 110 science teachers, and 12 directors / deputy directors completed the questionnaires. There are four provinces that researchers conducted research such as Battambang, Siem Reap, Preah Vihear, and Kampot provinces. Battambang province has two resources high schools (Nant Yong High School and Bavel High School), Siem Reap province has two resources high schools (Kralanh High School and Angkor High School), Preah Vihear Province has two resources high schools (Chea Sim Tbeng Mean Chey High School and Rovieng High School), Kampot Province has 2 resource high schools (Prarech Sampear high school and Chhouk high school). The actual data for each province (Table 1)

Table 1. Samples in four provinces that filled out the questionnaire

Province	High School	St.	Tea.	Director Vice-diirector
Battambang	Nant Yong	43	20	2
	Bavel	45	13	2
Siem Reap	Kralanh	45	6	1
	Angkor	46	26	2
Preah Vihear	Chea Sim Banteay Mean Chey	35	7	1
	Rovieng	39	9	1
Kampot	Prarech Sampear	46	14	2
	Chhouk	44	15	1
Total		343	110	12

2.2 Research Tools

The study uses research tools (1) questionnaires for grades 10-12, (2) questionnaires for science teachers grades 10-12, (3) questionnaires for directors / vice-directors, (4) Group discussion questions for science teachers grade 10-12.

2.3 Data Analysis

This study uses two approaches to analyze the data are quantitative and qualitative. Researchers input data in SPSS, and group discussion questions have been analyzed in a qualitative.

3. Result and discussion

3.1 Background

a) Sex

The percentage of female students who completed the questionnaire was 62% and the percentage of female teachers was 45%.

b) Education level

110 science teachers who completed the questionnaire, 17.27% of teachers are holding the degree 12+2 and 82.73% of teachers are holding Bachelor +1.

c) Resource High School location

The result of this study showed that 91.67% respond that resource high school is located in downtown area and 8.33% respond that resource high school is located in remote area. As a result, most of resource high schools are located in the downtown area.

3.2 Level of using laboratory in resource building

As a result of this study show in Figure 2, 39.1% of students answered that they had never conduct experiment in resource building, 54.8% which students answered that sometime they conduct experiment in resource building, and 6.1% of the students answered that they had been experimenting often. Thus, using the resource building is limited.

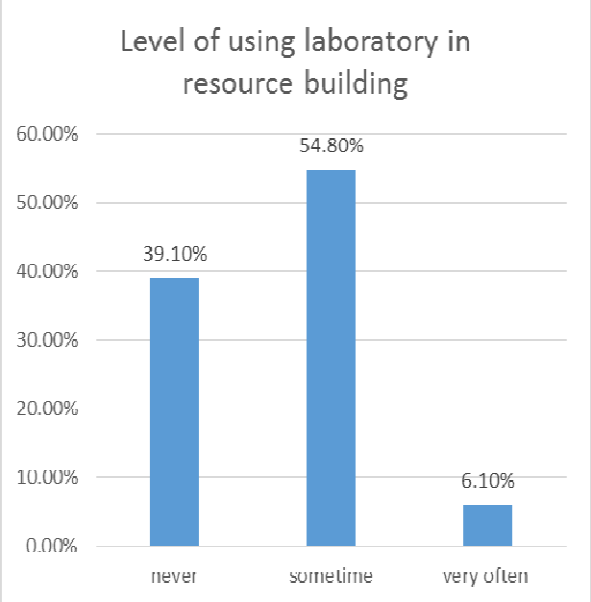


Figure 2: Level of using laboratory in resource building

3.3 Challenge in using laboratory in resource building

3.3.1 Materials that had in resource building

Througout the questionnaire for teachers, most of respondent answered that they had material for doing experiment. 64.55% answered that they were inadequate and some of the materials were not in accordance with the needs of the teachers to conduct experiment, and 35.45% answered that those materials are in accordance with the need of teachers (see Figure 3).

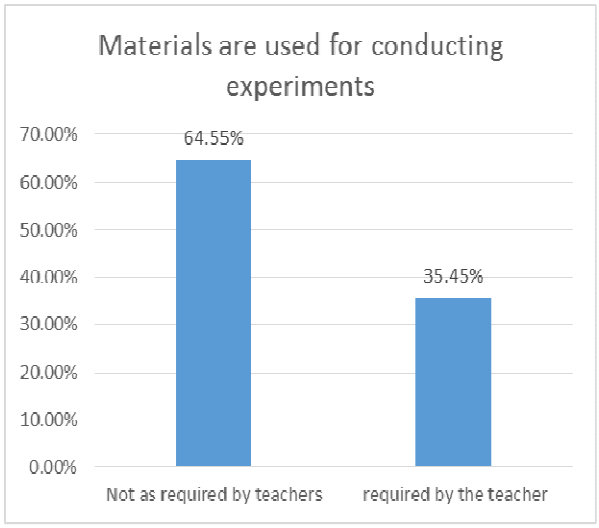


Figure 3: Materials are used for conducting experiments

3.3.2 Resource building managerment

In the study, the researchers also collected information related to the management of the resource building. The results of this study (Table 2) show that some resource high schools have someone to prepare chemical and materials and have record book for doing experiment also.

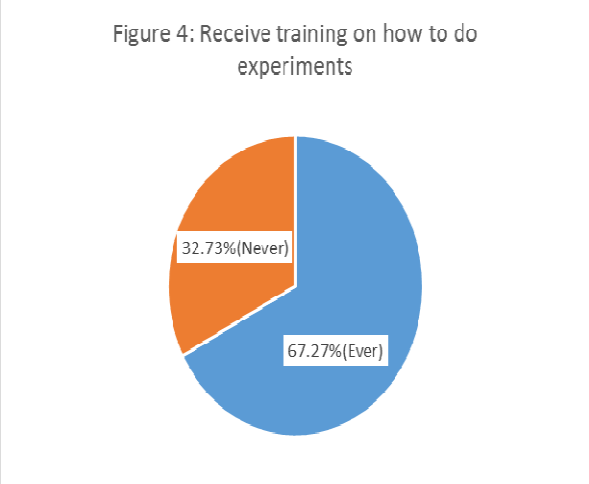
Table 2. Resource center managerment

	Percentage(%)	
	Don't have	Have
Organizers contain chemical elements and experimental equipment	31.82	68.18
A record of the teacher's entrance	15.45	84.55

3.3.3 Experimental knowledge

a) Receive training on how to do experiments

Among 110 science teachers, 67.27% answered that they had received training and 32.73% of whom had never received training. . As a result of Figure 4, some teachers know how to do some experiments, but there are still some teachers who have never learned how to do experiments.



b) Know materials in the resource building

Knowing the equipment and chemicals are the key to implementing the experiment. If teachers do not know the equipment and chemicals, they cannot teach the students to do the experiment. As a result of this study (Figure 5), 93.63% have known materials (3.64%), which they did not know of materials and only 2.73% they know all materials are in the resource building. So, most science teachers do not know much of the materials, they know only a few.

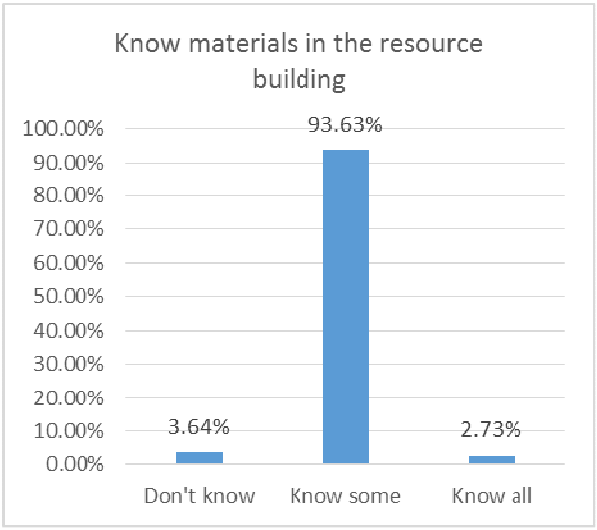


Figure 5: Know materials in the resource building

c) Know how to use materials in resource building

Knowing material is not enough to carry out the experiment. Teachers need to know how to use them. As a result of the study, 93.64% knew how to use materials, and 0.91% knew how to use all materials and 5.45% did not know how to use the material. Overall, most science teachers know how to use some materials (Figure 6).

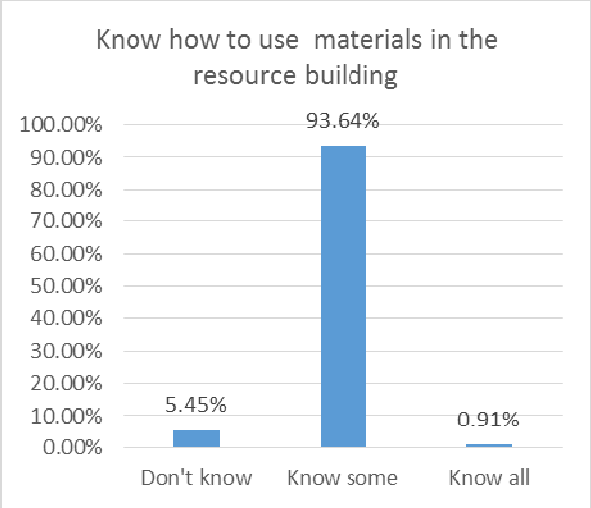


Figure 6: Know how to use materials in the resource building

d) Know how to conduct simple experiments

Knowing the equipment and how to use them are still not enough. The results of this study show that 86.37% of teachers can do afew simple experiments, 0.91% of teachers can not conduct experiment, and only 12.72% of teachers can conduct simple experiemnt alot(Figure 7), As result, most science teachers can do simple experiments little.

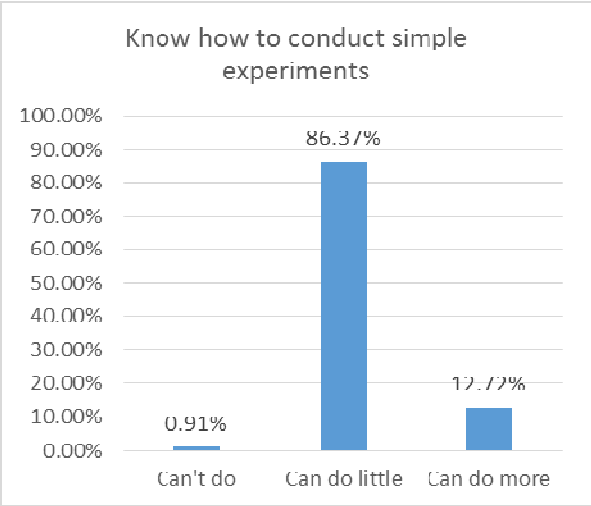


Figure 7: Know how to conduct simple experiments

3.4 Group disucssion

For more information, the researchers form group discussion. Science teachers discussed the following two questions:

1. Waht are the reasons that teachers do not conduct experiments in resource building?
2. What should we do to make teachers conduct experiments in resource building?

3.5 The reasons that teachers do not conduct experiments in resource building

- Lack of experimental materials
- Have never experimented in the past
- Lack of material and not enough chemicals
- Never learned about experiment
- Less experience (lack of knowledge on experiment)
- Training on experiment is short
- Insufficient time
- Lack of funds to purchase equipment for experiments
- Narrow space is difficult to conduct experiments (number of students from 50 to 60 per class)
- Some materials are not standard (too old, unaffected, fragile, no quality)
- Students are less interested in science subjects
- Hard to find chemicals
- No professional management
- There is not enough room to store equipment and chemicals

- Lessons in the textbook are difficult to understand and are beyond the grades of students' perceptions
- Lack of seat for students
- laboratory manager come to school irregular
- No breakdown hours for experiments(lab is closed and no one stand by)
- Water and electricity systems are damaged
- There are many lessons that cause teachers no time to do experiments

3.6 To encourage teachers to conduct experments in resource building:

- Train on experiments
- Have a clear timetable set by the Ministry of Education, Youth and Sports
- Separate laboratories in each subject
- Has enough equipment and chemicals
- Teachers should have clear knowledge and skills
- Manuals, lesson plan for experiment, and how to write reports

4. Conclusion

The using laboratory in resource building is still limited. Conducting Experiment in resource building has not been frequent.

Challenges of using loboratory at resource high schools include materials are not enough, and some materials do not meet the needs of teachers. Some teachers have never been trained in how to do some experiments, and some teachers know littel. Additionally, science teachers know little about materials and how to use them.

5. Suggestions

According to the findings of the study, there are some suggestions that need to be considered:

- Training courses for 4 subjects(chemistry, biology, physic, and Earth science)
- Requiring teachers who have never been to train to attend an experimental training course
- Providing some more materials and chemical
- Separating experiment hours and teaching hours
- Having LCD in laboratory
- Providing clothes and books for experiments
- Providing voice assistant to teachers
- Increasing budget for more experiments
- Providing specialist teachers for laboratory management
- Separating laboratory for each subject
- Making clear the lesson that have to do experiment
- Teaching how to use materials clearly
- Providing documents for doing experiments
- Preparing curriculum and lesson for conducting experiment for each level

- Providing color picture of experiments

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The effectiveness of school support on student study

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Abstract

This research will demonstrate the effective factors of school support on student learning. The study focuses on 11th grade students and on mathematics and Khmer literature, which are the main subjects and are being received by the Ministry of Education, Youth and Sports. Data collected from students and school boards in Cambodia by completing quizzes, interviews and other study studies were analyzed for the relationship between student achievement and other relevant factors. School factors, factors, teachers, family factors, student units, and social factors.Overall, the results showed that student achievement was clearly related to a number of factors, such as faculty, teacher, school, and student status. Other factors such as family life, factors, parental knowledge, and student background factors do not affect student achievement. Also, using a mix of leniometric models in each school's quality classification shows that a good quality school is an incentive school and educates students to have a math curriculum.

Keywords: Learning factors, Study of students, Mathematics Subjects, Khmer literature

1. Introduction

Problem pattern Normally, general guardians always pay great attention to their children's education and education.Generally, beforedeciding to send their children to study at any educational institution, they usually focus on the quality of educational institutions. Every parent or guardian wishes to have children get an excellent school education, whether a state institution or a private institution that can help their children succeed in both the academic and the future. He wants to see his children become a good citizen and a successful individual in the society.

All of these reasons are driving a lot of research on the quality of education in each school-the quality classification of educational institutions in the country.This quality education class plays an important role for parents and guardians in making decisions before sending their children to study at an institution.In addition, this class of quality of education is also a mirror for reflecting strength And the weaknesses of

each institution to take into consideration and identify the root of the problem in order to develop strategies to develop quality Its institutions or entities conform to the principles of the Ministry of Education, Youth and Sport based on the five pillars:1. Teacher PolicyImplementation 2.Rating 3. Inspection work 4. Curriculum and Environment 5.Higher Education.

Obviously, in Cambodia, we have now seen a study of the quality classification of educational institutions at higher and tertiary levels (universities, institutes, institutes ...), but there is no such thing as a study. This is for general education schools.In fact, we know that general knowledge institutions play an important role in building a foundation of knowledge for students before they reach profes- sional vocational knowledge.

Thus, if the quality of the school is generally limited, it will have a significant impact on the national education policy as well as the policy of the Royal Government in developing the country, especially in the future of ASEAN integration. The Ministry of Education, Youth and Sport has underlined the Sustainable Development Targets for Education 20130 and the 2019-2023 Education Strategic Plan, which has two policies:1. Ensure quality education, equity, and promote lifelong learning opportunities for all. Ensure the leadership effectiveness and management of education officers at all levels.

Education Management Reform Strategy: 1. Regular Learning Management Review, Student Continuity Study, Improving Teaching Methodology and Integrating Citizenship with Quality In curriculum and textbooks2. Administrative management reform focuses on ensuring the participation of mothers, students and local communities, school administration practices, and implementation of Education Policy and Strategic Plan for Education. 3. Financial management reform focuses on increasing the autonomy and financial accountability of schools, regular budgetary audit of education. And increased budget allocation associated with education policy. 4. Human Resource Management Reform focuses on training focusing on teaching methodology and on-the-job training programs, increasing teacher training and implementing performance evaluation of educational staff.

For this reason, our research team decided to study the topic of "Effectiveness of School Support on Student Study". In this study we will try to answerquestion "What is a good school? "Then we will classify the quality of the school (high school). There are a number of reasons why our team is interested in learning only high-quality and high-grade classifications for this research. First, there is a single curriculum set by the Ministry of Education, Youth and Sport.2nd: At university level, teachers have similar capacities (most of them master at the

National Institute of Education).Third: After graduating from high school, students have to choose skills to go to college.To answer the above question, the objective of this research is to study the effectiveness of schools using value-added indicators and to identify factors that affect students' learning. In order to achieve this objective, we will use a statistical model called Linear Mixed Model or Multilayer Model (Hierarchical Linear Model) by applying the actual data we collect.

2. Research method

2.1. Samples and samples selection

Due to the limited time and data to be used in relation to student testing, the research focuses only on the majority of high schools in the southern part of the KingdomCambodia only includes Sihanoukville, Koh Kong and Kampot provinces.

Table1. Number of samples taken by provinces surveyed

Province	Location of data collection	Sample	
		Management	Number of Students
Sihanoukville	Veal Rean	3	40
	Prey Nup	2	40
Kampot	PrasreachSamphea	3	42
	AngRameas	2	45
	Chhouk	3	40
Koh Kong	Koh Kong	4	34
	Paklong	2	44
	Botumsakor	4	40
Total		23	325

2.2. Research tools

Research using a questionnaire and questionnaire for interview.

2.3. Data collection method

At first, we randomly select the high school in each province (downtown and remote areas), then randomly selected students from the selected high school. These students, including school management, are asked to fill out questionnaires and interviews.The research will use most of the data in the quantitative areas to be collected through completing questionnaires and interviews.The questionnaire is structured in half-design.

The federation already has answers for the recruiter to have open questions so that the respondent can share their own ideas. However, the number of samples collected and considered appropriate for analysis and variation in each province. Depending on the number of practical participants and the attention they need to adequately answer the questionnaire by providing enough information.

2.4. Data analysis methods

Because education data is grouped data, meaning students in classrooms in schools and schools in the province, the statistical model that matches the data is the model.Linear Mixed Model or Multilevel

Model or Hierarchical Linear Model.The mixed linear model is the model in the following format:

$y_{ij} = \beta x_{ij} + \theta_i + \varepsilon_{ij}$; $i = 1,2,\ldots,n$; $j = 1,2,\ldots,m$ (1)

That

y_{ij} :Student score j In school i or Dependent Variable

x_{ij} :Covariates or Independent Variable

β : Is the coefficient that corresponds to constant effects (Fixed Effect)

θ_i : Is the coefficient that corresponds to the influence of the variable (Random Effect)

n: A number of high schools that have been studied

m :Number of students in each high school Note: y_{ij} Is the annual score of the student j in school i.

The research will use value-added indicators as a measure for ranking each school quality.What are Value Added Indicators?

Definition: Value added indicators have been given Definitionby

$$AV_i = \frac{1}{m}\sum_{i=1}^{m} E\left(y_{ij} / x_{ij}, \theta_i\right) - \frac{1}{m}\sum_{i=1}^{m} E\left(y_{ij} / x_{ij}\right)$$

that $i = 1,2,\ldots,n$.

If we study in case (1)That's the value added indicator $AV_i = \theta_i$ that $i = 1,2,\ldots,n$.

So to estimate the school's value-added indicator "i" We only calculate the estimated value of θ_i in model(1). We will use the softwareSPSS orR To analyze the data needed to classify each of the samples of the samples we have obtained.

2.4.1 Variation Selection

Because of the mixed linear model $y_{ij} = \beta x_{ij} + \theta_i + \varepsilon_{ij}$; $i = 1,2,\ldots,n$; $j = 1,2,\ldots,m$

We have been used to evaluate the rankings of each school in this study so the selection Variables related to the unrelated variables of the mixed linear model are crucial as we need to think and decide before analyzing the statistics program above.

Related variables: In general, the quality of a school can be determined based on a number of factors, including student achievement scores, especially their scores. Is an important measure of the quality of the schools they are trained to train. So we choose their annual score as a related variable y_{ij} Which is a student score j in school i .

Unrelated variables: n general, we know that school, individual, social factors and household factors affect the student's learning, so we have developed a lot of quizzes to get this information from students. These implications are assumed to be irrelevant variables. According to the research questionnaire, we have observed that we have 99 unrelated variants, which is an overwhelming number. Seeing this problem, we decided to choose only the variables that we think are particularly useful, which strongly affect students' scores. Therefore, we decided to opt out of only 22 variables in all 99 variables. To analyze the linear alignment model in the R program, in

order to explore any variables that are strongly related to the relative variables, which are the factors that affect student score. Below are 22 unrelated variants that are divided into sections of information obtained by students:

General information: Schools, sex and age are three variables that we think affect the student's learning

- Student Information: Mathematical study, Khmer language learning, homework, library, supplementary training, learning clubs, free time.
- Family Information: Academic Counselor (Parent) Parent Guardian Advice
- Teacher information: Assignment to students and teaching of teachers in mathematics and Khmer language.
- School Information: Management and Instruction for Students
- Information about the social environment: Friends (outstanding students and weak students), the security of the area of online learning, social play on Facebook.

2.4.2. Data Analysisby R

Since the R software is a statistical software that is popular with statistical experts, because the software has more statistical functions than other applications, especially in linear and nonlinear data analysis, so we decided to use this program to analyze our data. And use SPSS to access the data we have.

The following is a step-by-step process in R-based data analysis

- With 265 specimens in this study, we find that some data are missing data, which requires us to clear these data before being analyzed. As a result, after cleaning, we have only 257 data available for study.
- After cleaning these data, we take the remaining data, namely the 23 variables (Variables related to non-invariant variables) to check the Correlations multiplier to delete some interrelated variables.
- In the next step, we take the remaining variable from above to analyze the linear regression model. Using the delete method
- In the step backward variable, we can choose irrelevant variables with linear relations with variable variables by checking See its significance, ie p-value.
- In this step, we take the remaining variables into the linear model to derive linear linear alignment models that we want.
- The final step we will calculatemathematical in the linear regression model and Linear models integrate in each school to determine the size of the additional indicator values (adding value) $AV_i = \theta_i$ ‘1
- After receiving indexes at each school, we will classify each school at this indicator

price, where schools have value, large and positive indicator, which means that the school has the highest quality or rank.

3. Research results and discussions

3.1. Factors that influence student learning

To answer the research question "What is a good school or a quality school and what factors have a real impact on student learning?˝ We will analyze the data above by the linear alignment model by selecting all non-contact variables that affect the student score, because if any variable affects the student score, of course the variable is a value. Can reflect students' learning. Thus, the variable does not correspond to the linear regression model. Regarding variables that are significantly significant with the variable variables, students are the variables that answer the above questions.

Unselected Variable Choices We first look at the correlations of variables in order to delete some variables. As a result, not all variables seem to have a strong relationship, except for variables, extra training and variable variables, assignments for students with a 0.6630 multiplicity algorithm and variable, extra training and behavioral variables of the cohort Contacts 0.5352. So we decided to delete the extra training variables from the linear regression model. Similarly, the other two variables are variables, preferences, learning mathematicsand the mathematical variables are also significant (Relationship coefficient 0.4992).

Therefore, we decided to delete the mathematical variable, leaving the variable as a learning subject, because if students liked mathematics, then it was clear that they would work hard on the subject. So in the first stage, we have 20 more non-contact variables to be studied. By following a step backward of the linear alignment model, we see that there are only two variables that are left over: the school variable, which we denote by the x1 and the mathematical variables of the mathematics By x2 permissions which is significant with the variable-related variables, the students represented by y in the linear model, which are both variables that affect the actual student scores. In fact, these two variables have a p-value of less than 0.05 (Table 2).

Table 2.Linear alignment model with influential unrelated variables

Call:

lm(formula = y ~ x1 + x2)

Residuals:

Min	1Q	Median	3Q	Max
-24.4329	-4.7584	-0.4887	5.2868	16.6942

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)	
(Intercept)	19.0269	1.9497	9.759	< 2e-16	***
x1	0.9795	0.1752	5.591	5.81e-08	***

x22.1476 0.4904 4.379 1.74e-05 ***

Signif. codes:0‘***’0.001‘**’0.01‘*’0.05‘.’0.1‘ ’ 1

Residual standard error: 7.329 on 254 degrees of freedom

Multiple R-squared: 0.1827,

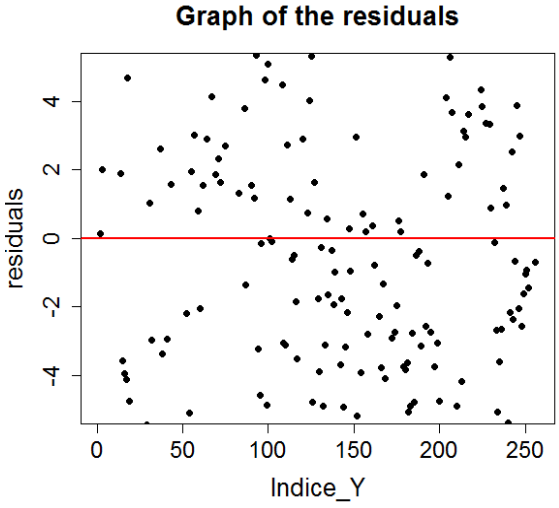
Adjusted R-squared: 0.1763

F-statistic: 28.39 on 2 and 254 DF,

p-value: 7.455e-12

According to Table 2 above, Although the school's students' preferences and the mathematical interests of each student have a strong relationship with their annual scores, the analysis data seems to be in a state of dispersion compared to the linear regimen Multiple R-squared: 0.1854 in Figure 1.

Figure 1: Graph of residual linear regimen model



However, in the case of normalized mortality (Table 3)This data is still in line with the linear distribution of the test line

$\alpha = 0.01$; $W_{\alpha} = 0.93$

Table 3. Normal Test

Shapiro-Wilk normality testdata: reg$residuals

W = 0.98596, p-value = 0.01452

Similarly, the chart of Residuals of the estimation of the model above can prove that these variables can still be studied because the average price and its standard deviation are still low.

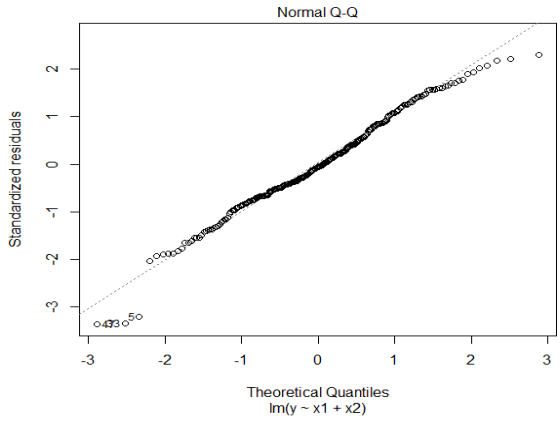
Table 4. Mean and Standard deviation of Residuals

mean	abs_meanvariance	std
2.1e-16	5.804847	53.737 7.330604

More clearly, this bias data is in the standard normal N(0,1), although not as good as we would like (Figure 2).

These testimonies are evidence that the school's factors and preferences on mathematics (self-determining factors) actually influence students' learning.

Figure 2: Normal Q-Q



We can basically conclude that the school really has a close relationship with the

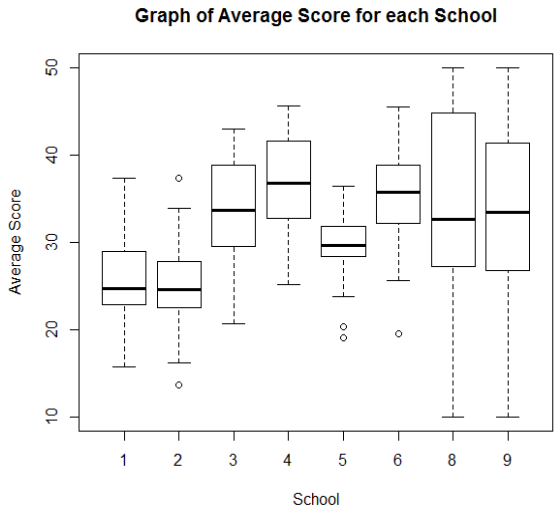


Figure 3.Graph of average score on each high school

academic results of the students. In particular, we can also conclude that students who enjoy math skills are often a good student or a good student. Overall, we can prove that quality schools are schools that are rich in outstanding students or students who are more likely to study mathematics and science than social subjects. It states that if a school is well-trained in mathematics and science, it can make students interested in these subjects, that school is a quality school.

3.2. Classification of schools using Value Added Indicators

What can we do to ensure that our schools are accurate and accurate?First of the eight high schools we have studied: 1. BotumSakor High School 2. Paklorng High School 3.Koh Kong High School 4.Pras Reach Samphea High5. Chhouk High School 6.AngRameas High School.Veal Rean High School 9.Prey Nup High School. We see high schoolPras Reach Sampheahave the best score, with the average score being between 35 and 45, with an average score of around 40.

At the same time, we also see that students in Veal Veng High School have the highest score among the seven high schools, but the average score for this high school is lower than the Koh Kong High School, High School of Khmer General Education and Technical School, Royal AngRameas High School and High School in Prey Nup (Figure 2).

So how can we evaluate or classify these high schools?Of course, in the present, we have observed that there are some schools, the overall performance of the general class is not good (the percentage of high school graduates), but the school has outstanding students who can get the results Good (outstanding student winners or A). This is one of the many complications that make it difficult to classify the school, which is totally different at higher education, with a focus on student job search rates. Higher Education. For these reasons, we need to use a Linear mixed model to study this class. As we mentioned above to classify a good school, we have to rely on the value added indicator,

$$AV_i = \theta_i = \frac{1}{m}\sum_{i=1}^{m} E\left(y_{ij} / x_{ij}, \theta_i\right) - \frac{1}{m}\sum_{i=1}^{m} E\left(y_{ij} / x_{ij}\right)$$

$i = 1, 2, \ldots, n$ ๆ

So we have to create two models, one model is a linear alignment model (LM), and another is a LMM model, using a

mathematical algorithm as an unrelated variable (x2) and an annual grades of students. Is the relative variable (y) because the two variables have a very strong relationship. We have two models in the following format: $(\mathrm{LM}): y = \beta_{01} + \beta_1 x_2$ $(\mathrm{LMM}): y = \beta_{02} + \beta_2 x_2 + \theta$

In the LMM, the term "Fixed Effect" is the coefficient corresponding to the Random Effect. So, to determine the value of an additional indicator, just make a difference between the scores from the two models' predictions.

Table5: Linear Mixed ModelLinear Model(LM)

Call:

Im(formula = y~x2)

Residuals:

Min	1Q	Median	3Q	Max
-20.1755	-5.4145	-.0.7005	5.3495	20.2855

Coefficients:

	Estimate	Std. Error	t value	Pr(>|t|)
(Intercept)	22.3317	1.9651	11.364	< 2e-16***
X2	2.4609	0.5153	4.776	3.02e-06***

Linear Mixed Model (LMM)

$school	(Intercept	x2
1	16.277916	2.5176446
2	18.468591	2.0559194
3	35.249665	-0.4681588
4	29.385206	2.1072799
5	23.680899	1.6020894
6	31.184772	0.9477223
8	19.915594	4.0556463
9	8.574778	6.0380330

Table 6. Values of indicator for each school

School	Indicator	Rank
BotumSakor	-5.837541	8
Baklong	-5.201795	7
Koh Kong	1.674159	4
PrareachSamphea	5.893190	1
Chhouk	-1.849139	6
Angrameas	2.755856	3
Veal Rean	3.218664	2
Prey nup	0.9348743	5

Based on the above chart, we see that Pras Reach Samphea High School is the highest value indicator of 5.893190, followed by Veal Rean High School and AngRameas High School, while BotumSakor High School is only -5.837541.Despite such a result, we still have doubts about trusting the indicator price, since there are only two variables to be studied to find the value of this indicator, which leaves the initial claim We have argued that the student's study should be influenced by four key factors - self-factors, school factors, family factors, and social factors.So what's going to happen to the value of this indicator if there are some variables added to the linear equation?

To ease the suspicion, the prefix variable, denoted by the x1 variable, parental guardianx2 Variable area area x3 students and teachers' explanations by attaching the theory and practice x4 (x4 as Variations that refer to school factors) were tested again in a mixed linear model.

Table 7: Differential multiplier coefficients

Model	LMM	LM
Variable	25.7669912	26.2254348
x1	2.0834672	2.1130352
x2	-0.5386024	-0.5503608
x3	-0.5122880	-0.5131697
x4	0.2290582	

We note that some of these variables are not significant, which is why the linear model is not good at predicting. However, based on the magnitude test, we find that the above model can still be used to calculate the value of each additional indicator of a school.

Table 8. Test Normal(Shapiro-Wilk normality test)

Model	W-values	p-values
LMM	0.99643	0.7501
LM	0.99604	0.6677

Through both models, the price index for each school is calculated as follows:

Table 9. School Additional Indicators

School	Additional indicator	Rank
Botumsakor	-0.103929	8
Baklong	-0.007205543	4
Kohkong	-0.001253257	3
Prasreachsamphea	-0.06119253	7
Chhouk	0.07325188	2
Angrameas	0.1401728	1
Veal rean	-0.02612899	5
Prey nup	-0.02760791	6

We notice that BotumSakor High School remains Lowest rankings while in science. The Royal School of General Knowledge and Technical Procedures dropped from the top to 7th place.

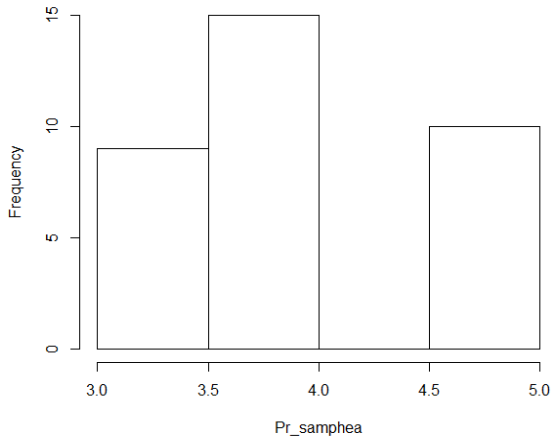
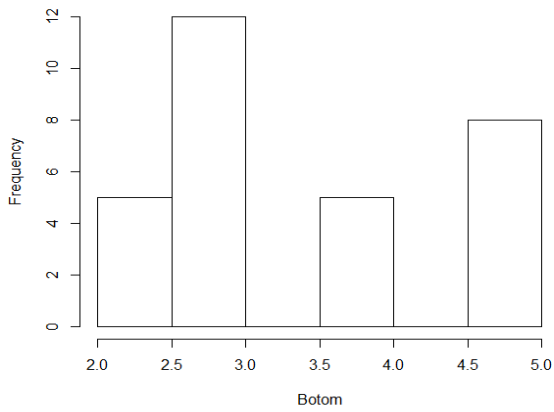
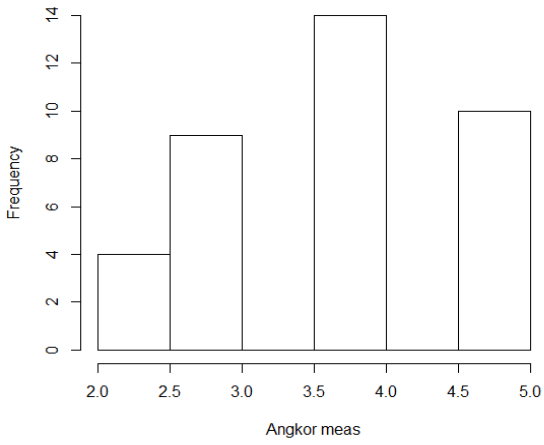


Figure 4: Drawings of student preferences in mathematics





This is due to the other variables (variable, guardianship, guardianship, and student-area variables) that have pulled down the high school rankings. However, Angkor Gold has maintained a good ranking.In conclusion, the value of the additional indicator varies as we add some variables. All of these issues can be caused by inadequate research (some not formally targeted quizzes, some students may misrepresent or justify) to make a linear model of alignment It is good to predict the scores of each student in each school properly or at the least marginal level. However, we still remain optimistic about the use of the Linear Neighborhood Models to measure the quality of each school. In fact, we can still presume that even though we add another variable, Angkor high school, located in Kampot, remains the best high school in providing educational services to students, namely schools that have trained students to love and love Learning mathematics and science while at BotumSakor High School in Koh Kong, a remote area with Ranked the lowest of the eight high schools taking the study.

4.Conclusion

The study shows that self factors, school factors are the primary factor affecting student learning, while family factors and student living factors do not seem to be relevant to their academic achievement. Additionally, teaching by linking theory and practice, as well as teacher motivation as well as school management is a factor that encourages students to love learning, especially in mathematics and Khmer literature.At the same time, we can further assess that using a linear model to classify school quality, even though it is not perfect, can still be used to analyze data in the calculation. Find the value of each additional indicator of each school. In fact, we still dare to confirm the quality of the school, based on the value of these additional indicators and the actual situation of the schools.

5. Suggestion

Good schools are schools that support, trust and inspire students to work hard to learn. A good school is a school full of intellectual capital, a teacher with a professional ethic.A good school is a school with a visionary, transparent, transparent and integrity. Therefore, the Ministry of Education, Youth and Sports as well as concerned bodies should pay attention. Putting on teacher training and management skills, especially on teaching methods and leadership to make our education sector reach another step. Also the rigorous classification of each school's quality of education is still important because it serves as a mirror for reflecting the strengths and weaknesses of each school. So, for this linear model to be accurate and well-suited to measure the quality of both analysts.It is

important that the quiz should be prepared, as the data to be analyzed must be sufficient in both quantity and quality (the data collection method must be standard and the data collected must be reliable data).Finally, our team still thinks there are other models that can be used to evaluate school quality or rank more accurately and more accurately than the integrated linear model. Therefore, we hope that subsequent researchers will do more research to find better models that can measure the accuracy and validity of school rankings, which are of vital importance to education as well as to other sectors of society.

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មូលន័យសង្ខេប៖ ការស្រាវជ្រាវនេះ នឹងបង្ហាញឱ្យឃើញពីកត្តាទាំងឡាយដែលជះឥទ្ធិពលទៅលើការជ្រើសរើសជំនាញសម្រាប់បន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សា។ ការសិក្សានឹងផ្តោតទៅលើតែសិស្សថ្នាក់ទី១២ ដែលកំពុងសិក្សានៅឆ្នាំ២០១៦-២០១៧ ដែលកំពុងមានការយកចិត្តទុកដាក់ពីសំណាក់ក្រសួងអប់រំ យុវជន និងកីឡា នៃប្រទេសកម្ពុជា ក៏ដូចជាបណ្តាប្រទេសក្នុងតំបន់ និងសាកលលោក។ ហេតុដូចនេះហើយ ការជ្រើសរើសជំនាញសម្រាប់បន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាពិតជាមានសារៈសំខាន់ណាស់សម្រាប់ពួកគេ ព្រោះវាបានជះឥទ្ធិពលដល់សមត្ថភាពពេញលេញរបស់ពួកគេសម្រាប់អនាគតការងារ។ ម្យ៉ាងទៀតការស្វែងយល់ពីការជ្រើសរើសជំនាញ និងកត្តាដែលជះឥទ្ធិពលដល់ការសម្រេចចិត្តជ្រើសរើសជំនាញនៅកម្រិតមហាវិទ្យាល័យ មានសារៈសំខាន់ណាស់សម្រាប់ឱ្យ ក្រសួងអប់រំ យុវជន និងកីឡា មានលទ្ធភាព និងសមត្ថភាពក្នុងការពង្រីកកម្មវិធីកំណែទម្រង់កម្មវិធីសិក្សានៅតាមគ្រឹះស្ថានឧត្តមសិក្សានានា។ ដោយមើលឃើញពីសារៈសំខាន់ខាងលើទើបប្រធានបទ "ការជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សារបស់សិស្សថ្នាក់ទី១២ នៅរាជធានី-ខេត្ត" ត្រូវបានសិក្សាដោយផ្តោតលើគោលបំណងសំខាន់ៗចំនួនបីគឺ (១)-កំណត់កត្តាសំខាន់ៗដែលជះឥទ្ធិពលលើការសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សារបស់សិស្សថ្នាក់ទី១២ (២)-កំណត់អំពីជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សានីមួយៗ ដែលសិស្សថ្នាក់ទី១២ សម្រេចចិត្តជ្រើសរើស និង (៣)-ប្រៀបធៀបជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាដែលបានជ្រើសរើសរវាងសិស្សថ្នាក់ទី១២ នៅតំបន់ទីប្រជុំជន និងតំបន់ជនបទ។ សិស្សវិទ្យាល័យថ្នាក់ទី១២ ដែលកំពុងសិក្សាក្នុងឆ្នាំសិក្សា ២០១៦-២០១៧ ត្រូវបានជ្រើសរើសពីរាជធានី-ខេត្តក្រុង ចំនួន០៥ ជារាជធានី-ខេត្តតំណាង ដែលមានគ្រឹះស្ថានសាកលវិទ្យាល័យនានា (ដូចជា រាជធានីភ្នំពេញ ខេត្តកំពង់ចាម ខេត្តតាកែវ ខេត្តស្វាយរៀង និងក្រុងព្រះសីហនុ)។ វិទ្យាល័យស្ថិតនៅតំបន់ទីប្រជុំជនចំនួនពីរ និងតំបន់ជនបទចំនួនពីរក្នុងរាជធានី-ខេត្តនីមួយៗ ត្រូវបានជ្រើសរើស ហើយសិស្សថ្នាក់ទី១២ ចំនួន១០នាក់ពីក្នុងថ្នាក់នីមួយៗ នៅតាមគ្រប់វិទ្យាល័យដែលបានជ្រើសរើស ដើម្បីបំពេញគម្រងសំណួរតាមបែបបរិមាណវិស័យ។ លទ្ធផលស្រាវជ្រាវបានបង្ហាញថា មុខវិជ្ជាដែលសិស្សចូលចិត្តរៀនបំផុតនៅវិទ្យាល័យគឺភាសាខ្មែរ និងគណិតវិទ្យាដែលមានភាគរយច្រើនជាងគេរហូតដល់២៧.២% និង២៣.៨% តាមលំដាប់រៀងគ្នា។ សិស្សទាំងអស់ដែលបានធ្វើការសម្រេចចិត្តដំបូងក្នុងការជ្រើសរើសជំនាញបន្តការសិក្សារបស់ពួកគេនៅថ្នាក់ឧត្តមសិក្សាមានសិស្សដែលកំពុងរៀននៅកម្រិត៖ វិទ្យាល័យមានចំនួន៧% អនុវិទ្យាល័យមានចំនួន២០.២% និងបឋមសិក្សាមានចំនួន៦.៥% ។ ចំណែកឯជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាវិញលទ្ធផលបានបង្ហាញឱ្យឃើញថា សិស្សបានជ្រើសរើសលើជំនាញផ្សេងៗរហូតដល់ ៣៧ ជំនាញឯកទេសដូចជា៖ វេជ្ជសាស្ត្រ វិស្វកម្ម ច្បាប់ គ្រប់គ្រង រដ្ឋបាលសាធារណៈ ព័ត៌មានវិទ្យា គណនេយ្យ អក្សរសាស្ត្រខ្មែរ គណិតវិទ្យា រូបវិទ្យា គីមីវិទ្យា ជីវវិទ្យា ភូមិវិទ្យា ប្រវត្តិវិទ្យា ភាសាបរទេស កសិកម្ម ធនាគារ អគ្គិសនី ទេសចរណ៍ ទីផ្សារ ទំនាក់ទំនងអន្តរជាតិ ហិរញ្ញវត្ថុ ធុរកិច្ច និងស្ថាបត្យកម្ម។ ក្នុងនោះជំនាញវេជ្ជសាស្ត្រមានភាគរយខ្ពស់ជាងគេរហូតដល់ទៅ ១១.៧% នៃសិស្សទាំងអស់ និងជំនាញវិស្វកម្មមានភាគរយខ្ពស់លំដាប់ទី២ រហូតដល់ទៅ ៧.៩% នៃសិស្សទាំងអស់។ កត្តាដែលមានឥទ្ធិពលលើការសម្រេចចិត្តរបស់សិស្សក្នុងការជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាច្រើនជាងគេបំផុត គឺកត្តាប្រាក់ទ្រទ្រង់ជីវភាព កត្តាភាពមានអាហារូបករណ៍ កត្តាទីផ្សារការងារក្នុងសង្គម កត្តាណែនាំពីម្តាយ ឬឪពុក និងកត្តាប្រាក់បង់ថ្លៃឈ្នួលសិក្សានៅតាមសាកលវិទ្យាល័យនានា (មធ្យមភាគ > ៤.០ ដែលលេខ៤ មានតម្លៃល្អ និងលេខ៥ មានតម្លៃល្អណាស់)។ ដោយឡែកកត្តាណែនាំពីម្តាយ ឬឪពុក កត្តាអាចរកបានកន្លែងស្នាក់នៅ កត្តាប្រាក់បង់ថ្លៃឈ្នួលសិក្សានៅតាមសាកលវិទ្យាល័យនានា កត្តាភាពមាន អាហារូបករណ៍ និងកត្តាទីផ្សារការងារក្នុងសង្គម គឺបានជះឥទ្ធិពលយ៉ាងខ្លាំងចំពោះសិស្សនៅតាមទីជនបទ បើប្រៀបធៀបនឹងសិស្សនៅតាមទីប្រជុំជន (sig. <0.05 បើ sig. តូចជាង 0.05 នោះភាពខុសគ្នារវាងភាគរយនៃសំណាកទាំងពីរក្រាកដជាត្រឹមត្រូវ) ដែលនាំ ឲ្យសិស្សនៅតាមទីជនបទ ទទួលរងឥទ្ធិពលខ្លាំងជាងសិស្សនៅតាមទីប្រជុំជន។

១. សេចក្តីផ្តើម

នៅក្នុងសតវត្សរ៍ទី២១នេះ ទស្សនៈនៃការអប់រំរបស់ពិភពលោក មាននិន្នាការផ្លាស់ប្តូរពីសង្គមសេដ្ឋកិច្ចផ្អែកលើកម្លាំងពលកម្ម ទៅជាសង្គមសេដ្ឋកិច្ចផ្អែកលើចំណេះដឹង ហើយមានតែការអប់រំប្រកបដោយគុណភាពទេ ដែលអាចកសាងធនធានមនុស្ស ជួយសង្គមឱ្យមានការអភិវឌ្ឍលើគ្រប់វិស័យបាន។ ជាមួយគ្នានេះ សហគមន៍អាស៊ាន (២០១៥) បានផ្តោតទៅលើសហគមន៍សេដ្ឋកិច្ច ក្នុងនោះរួមមានលំហូរសេវាកម្ម កម្លាំងពលកម្មនិងធនធានមនុស្ស។ បច្ចុប្បន្នរាជរដ្ឋាភិបាលកម្ពុជាបានយកចិត្តទុកដាក់យ៉ាងខ្លាំងដល់វិស័យអប់រំ ដែលជាជ្រុងមួយដ៏សំខាន់នៃយុទ្ធសាស្ត្រចតុកោណដំណាក់កាលទី៣ ដោយផ្តោតទៅលើការបណ្តុះបណ្តាលធនធានមនុស្ស ឱ្យមានសមត្ថភាពពេញលេញប្រកបដោយសីលធម៌វិជ្ជាជីវៈល្អ គឺជាការរួមចំណែកក្នុងការកាត់បន្ថយភាពក្រីក្រ និងការអភិវឌ្ឍសេដ្ឋកិច្ចជាតិផ្អែកលើសង្គមពុទ្ធិ និងវិបុលភាព។ ដើម្បីឆ្លើយតបនិន្នាការអប់រំពិភពលោក និងតំបន់ រាជរដ្ឋាភិបាលកម្ពុជាបានដាក់ចេញនូវយុទ្ធសាស្ត្រចតុកោណដែលក្នុងនោះមុំទី៤ បានផ្តោតទៅលើការកសាងសមត្ថភាពនិងការអភិវឌ្ឍធនធានមនុស្ស ជាពិសេសយុវជនឱ្យក្លាយទៅជាពលរដ្ឋពេញលេញ (វិជ្ជាសម្បទា បំណិនសម្បទា និងចរិយាសម្បទា) មានជំនាញវិជ្ជាជីវៈច្បាស់លាស់ និងប្រាស្រ័យទាក់ទងល្អ ពិសេសវប្បធម៌ចែករំលែកសម្រាប់រួមចំណែកលើកកម្ពស់សេដ្ឋកិច្ចជាតិ (ប្រសាសន៍របស់សម្តេចអគ្គមហាសេនាបតីតេជោ **ហ៊ុន សែន**)។ រាជរដ្ឋាភិបាលកម្ពុជាមានមហិច្ឆតា ក្នុងការផ្លាស់ប្តូរពីប្រទេសដែលមានចំណូលមធ្យមកម្រិតទាប ទៅជាប្រទេសដែលមានចំណូលមធ្យមកម្រិតខ្ពស់ ក្នុងឆ្នាំ២០៣០ ហើយបន្តក្លាយជាប្រទេសអភិវឌ្ឍនៅឆ្នាំ២០៥០។ កំណើនសេដ្ឋកិច្ច និងការប្រកួតប្រជែងនាពេលបច្ចុប្បន្ន និងពេលអនាគត់របស់កម្ពុជា ដើម្បីសម្រេចបានមហិច្ឆិតានេះ គឺពឹងផ្អែកលើសមត្ថភាពរបស់ពលរដ្ឋខ្មែរ ក្នុងការក្រេបយកចំណេះដឹងសមស្រប និងជំនាញពាក់ព័ន្ធដែលអាចឆ្លុះបញ្ចាំងពីមរតកវប្បធម៌និងសីលធម៌របស់ប្រទេសជាតិ។ វិស័យអប់រំមានតួនាទីយ៉ាងសំខាន់ក្នុងការរួមចំណែកអភិវឌ្ឍប្រទេសជាតិ(MoEYS, 2014)។ កុមារ យុវជន និងមនុស្សពេញវ័យត្រូវទទួលបានការសិក្សា និងការអប់រំពេញមួយជីវិតដែលមានភាពពាក់ព័ន្ធ និងឆ្លើយតបនឹងតម្រូវការទីផ្សារការងារប្រកបដោយគុណភាពខ្ពស់។ កាលានុវត្តភាពនៃការអប់រំត្រូវផ្តោតលើការកសាងជំនាញ និងការផ្តល់ឱកាសដល់សិស្ស និស្សិតគ្រប់រូបក្នុងការទទួលបានជំនាញបច្ចេកទេស និងជំនាញឯកទេសផ្សេងៗ ដើម្បីសម្រេចបានការអភិវឌ្ឍ ដែលផ្តល់អត្ថប្រយោជន៍ពេញលេញ ដល់ប្រជាជនកម្ពុជាគ្រប់ស្រទាប់វណ្ណៈ និងគ្រប់ទីតាំងភូមិសាស្ត្រ។ ក្រសួងអប់រំយុវជន និងកីឡា នឹងផ្តល់អាទិភាពខ្ពស់ដល់ការផ្តល់សេវាអប់រំមូលដ្ឋានប្រកបដោយសមធម៌ និងមានគុណភាពខ្ពស់។ ផែនការយុទ្ធសាស្ត្រវិស័យអប់រំ ២០១៤-២០១៨ ក៏ផ្តោតការយកចិត្តទុកដាក់ខ្ពស់ផងដែរ លើការពង្រីកការអប់រំកុមារតូច ការបង្កើនលទ្ធភាពទទួលបានការអប់រំនៅមធ្យមសិក្សា និងក្រោយមធ្យមសិក្សាប្រកបដោយគុណភាព ព្រមទាំងការពង្រីកការងារអប់រំក្រៅប្រព័ន្ធ និងការអប់រំបច្ចេកទេស។

ចំនួនសាលារៀន និងសាកលវិទ្យាល័យនៅក្នុងប្រទេសកម្ពុជា បានរីកលូតលាស់ជាខ្លាំងក្នុងប៉ុន្មានទសវត្សរ៍ចុងក្រោយនេះ។ សាលាបឋមសិក្សា និងអនុវិទ្យាល័យ ត្រូវបានសាងសង់ឡើងនៅទូទាំងប្រទេសដើម្បីគាំទ្រដល់ដំណើការអប់រំ សម្រាប់កុមារ ពិសេសនៅតាមជនបទ។ នៅកម្ពុជាសព្វថ្ងៃនេះមានចំនួន១១៩ គ្រឹះស្ថានឧត្តមសិក្សា ក្នុងនោះមានចំនួន៨៦ គ្រឹះស្ថានឧត្តមសិក្សាសាធារណៈនិងចំនួន ៧៣ គ្រឹះស្ថានឧត្តមសិក្សាស្ថិតនៅក្រោមការគ្រប់គ្រងរបស់ឯកជន (មគ្គុទេសក៍,ន.ឧត្តមសិក្សា,២០១៦)។ទោះបីជាយ៉ាងនេះក្តីនៅតែមាននិស្សិតដែលបញ្ចប់ពីមហាវិទ្យាល័យ មិនអាចរកការងារធ្វើបាន ខណៈពេលមាននិស្សតផ្សេងទៀតទទួលបានការងារខុសជំនាញ និងត្រូវជំនាញខ្លះដែលគេបានបញ្ចប់ការសិក្សាពីសាកលវិទ្យាល័យ។ អ្នកខ្លះទៀតត្រូវវិលត្រឡប់ទៅបំពេញការងារអាជីវកម្មជាមួយឪពុកម្តាយរបស់ពួកគេ នៅឯស្រុកកំណើតទៅវិញក្រោយពីបញ្ចប់ការសិក្សាអស់រយៈពេលជាច្រើនឆ្នាំ។ បញ្ហាទាំងនេះ បង្កមកពីកត្តាផ្សេងៗជាច្រើន។ បើយោងតាមលោក Peou(2017) បញ្ហានេះ គឺបណ្តាលមកពីសិស្សភាគច្រើន សម្រេចចិត្តជ្រើសរើសមុខវិជ្ជារៀនសូត្រមិនបានត្រឹមត្រូវ។ ឧទាហរណ៍ សិស្សវិទ្យាល័យជាច្រើនបានជ្រើសរើសជំនាញចាំបាច់សម្រាប់ការងារខាងសេវាសាធារណៈដូចជា: វិស័យធនាគារ ការគ្រប់គ្រងទីផ្សារ និងគណនេយ្យជាដើម ដោយពួកគេមិនបានធ្វើការសិក្សាស្វែងយល់ឱ្យបានច្បាស់ពីតម្រូវការទីផ្សារការងារសង្គមបច្ចុប្បន្នបានត្រឹមត្រូវ ដែលជាហេតុនាំឱ្យពួកគេអត់ការងារធ្វើបន្ទាប់ពីពួកគេបានបញ្ចប់ថ្នាក់បរិញ្ញបត្រ។ក្រៅពីតម្រូវការនៃមុខជំនាញការងារ គុណភាពរបស់សិស្សដែលបានបញ្ចប់ការសិក្សាក៏ជះឥទ្ធិពលដល់ឱកាសទទួលបានការងារដែរ(Chen et al.,2007;

Peou,2013)។ សិស្សថ្នាល់គួរតែធានាថា ពួកគេបានចំណាយពេលចាំបាច់ទៅលើការសិក្សាអប់រំ មានមូលដ្ឋានគ្រឹះបានល្អមុនពេលដែលពួកគេបន្ទោសទៅលើទីផ្សារការងារ។ សិស្សវិទ្យាល័យភាគច្រើនដែលបានឡងជាប់សញ្ញាបត្រមធ្យមសិក្សាទុតិយភូមិ នៅមានការសម្រេចចិត្តស្រពិចស្រពិលនៅឡើយដែលទាក់ទងទៅនឹងការជ្រើសរើសជំនាញ ដើម្បីបន្តការសិក្សានៅតាមគ្រឹះស្ថានឧត្តម សិក្សារដ្ឋ និងឯកជន ឱ្យឆ្លើយតបទៅនឹងតម្រូវការទីផ្សារការងារក្នុងសង្គម។ លើសពីនេះទៅទៀត វគ្គសិក្សា និងជំនាញជាច្រើនគួរតែបង្កើតឱ្យមានឡើងទៅតាមតម្រូវការទីផ្សារផងដែរ។ ម្យ៉ាងវិញទៀតសាកលវិទ្យាល័យជាច្រើននៅកម្ពុជាផ្តល់ជំនាញ ឱ្យសិស្សជ្រើសរើស នៅមានកម្រិតបើប្រៀបធៀបជាមួយនឹងសាកលវិទ្យាល័យនានានៅបរទេស (World Bank, 2010; 2012)។

ជារៀងរាល់ឆ្នាំសិស្សដែលបញ្ចប់មធ្យមសិក្សាទុតិយភូមិបានប្រឈមមុខទៅនឹងបញ្ហានៃការសម្រេចចិត្ត លើការជ្រើសរើសវិជ្ជាជីវៈនាពេលអនាគត(Niu and Tienda, 2008)។ មានកត្តាជាច្រើន ដែលមានផលប៉ះពាល់ដល់ការសម្រេចចិត្តចុងក្រោយនៅពេលបញ្ចប់ការសិក្សាពីវិទ្យាល័យ ខណៈពួកគេមានការសម្រេចចិត្តមិនច្បាស់លាស់ទៅលើតម្រូវការសិក្សានាពេលអនាគត និងការរកប្រាក់ចំណូល។ ការសម្រេចចិត្តចុះឈ្មោះចូលរៀននៅមហាវិទ្យាល័យ បានក្លាយទៅជាភាពស្មុគស្មាញកាន់តែខ្លាំងឡើងក្នុងអំឡុងពេល៣០ឆ្នាំចុងក្រោយ (James et al., 1999; Hoxby, 2001)។ ការជ្រើសរើសវិជ្ជាជីវៈ គឺជាផ្នែកមួយយ៉ាងសំខាន់សម្រាប់យុវជន និងយុវនារី ហើយការជ្រើសរើសវិជ្ជាជីវៈនេះនឹងជះឥទ្ធិពលដល់ពួកគេអស់មួយជីវិត។ម្យ៉ាងទៀតសិស្សមានភាពស្មុគស្មាញ និងពិបាកក្នុងការសម្រេចចិត្តជ្រើសរើសមុខជំនាញចូលរៀនថ្នាក់មហាវិទ្យាល័យ។ ដោយមើលឃើញពីបញ្ហាខាងលើនេះហើយ ទើបមានការសិក្សាស្រាវជ្រាវលើប្រធានបទ "ការជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សារបស់សិស្ស ថ្នាក់ទី១២ នៅរាជធានី-ខេត្ត"។

ការសិក្សាលើប្រធានបទខាងលើ មានគោលបំណងសំខាន់ចំនួនបី គឺ

(១)- កំណត់កត្តាសំខាន់ៗ ដែលជះឥទ្ធិពលលើការសម្រេចចិត្តជ្រើសរើសជំនាញ បន្តការសិក្សាថ្នាក់ឧត្តមសិក្សារបស់សិស្សថ្នាក់ទី១២

(២)- កំណត់អំពីជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សានីមួយៗ ដែលសិស្សថ្នាក់ទី១២សម្រេចចិត្តជ្រើសរើស

(៣)- ប្រៀបធៀបជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាដែលបានជ្រើសរើសរវាងសិស្សថ្នាក់ទី១២ នៅតំបន់ទីប្រជុំជននិងតំបន់ជនបទ។

ដើម្បីសម្រេចវត្ថុបំណងខាងលើ ការស្រាវជ្រាវនេះផ្តោតលើសំណួរស្រាវជ្រាវដូចខាងក្រោម៖

(១)-តើមានកត្តាអ្វីខ្លះ ដែលជះឥទ្ធិពលលើការសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សារបស់សិស្សថ្នាក់ទី១២?

(២)-តើជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាមានអ្វីខ្លះ ដែលសិស្សថ្នាក់ទី១២សម្រេចចិត្តជ្រើសរើស?

(៣)-តើការជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សារបស់សិស្សថ្នាក់ទី១២មានភាពខុសគ្នាទៅតាមតំបន់ទីប្រជុំជន និងតំបន់ជនបទយ៉ាងដូចម្តេច?

២. វិធីសាស្ត្រស្រាវជ្រាវ

២.១ សំណាក និងការជ្រើសរើសសំណាក

សំណាកដែលត្រូវជ្រើសរើសដើម្បីប្រមូលទិន្នន័យគឺសិស្សវិទ្យាល័យថ្នាក់ទី១២ដែលកំពុងសិក្សាឆ្នាំសិក្សា២០១៦-២០១៧។ រាជធានី-ខេត្តក្រុងចំនួន០៥ ត្រូវបានជ្រើសរើស ជាខេត្តតំណាងក្នុងការប្រមូលទិន្នន័យ។ ខេត្តនីមួយៗដែលត្រូវជ្រើសរើស គឺជាខេត្តដែលមានសាកលវិទ្យាល័យនានា ដែលស្ថិតនៅក្នុងតំបន់ខុសៗគ្នានៃប្រទេសកម្ពុជា ក្នុងនោះមាន៖ ១. រាជធានីភ្នំពេញជាតំបន់សេដ្ឋកិច្ចសំខាន់ ២.ខេត្តកំពង់ចាមតំណាងឱ្យតំបន់ភូមិភាគកណ្តាល ៣.ខេត្តស្វាយរៀងតំណាងឱ្យតំបន់ភាគអាគ្នេយ៍ ៤. ខេត្តតាកែវតំណាងឱ្យតំបន់ភាគទក្សិណ និង ៥. ក្រុងព្រះសីហនុតំណាងឱ្យតំបន់ភាគនិរតីជាប់មាត់សមុទ្រ។ ទោះជាយ៉ាងនេះក្តីការជ្រើសរើសខេត្តពីតំបន់ខុសៗគ្នានេះគឺក្នុងគោលបំណងទទួលបានតំណាងនៃរបាយទិន្នន័យដើម្បីឈានទៅរកការទាញសន្និដ្ឋានរួម ជាទូទៅសម្រាប់ប្រទេសកម្ពុជាទាំងមូល។ ការសិក្សានេះមិនមានគោលបំណងធ្វើការប្រៀបធៀបរវាងខេត្ត និងខេត្ត ឬតំបន់ និងតំបន់ឡើយ។ វិទ្យាល័យចំនួន០២ ត្រូវបានជ្រើសរើសយកពីតំបន់ទីប្រជុំជននិង០២ទៀតពីតំបន់ជនបទក្នុងខេត្តនីមួយៗ។ ដូច្នេះ វិទ្យាល័យសរុបចំនួន២០ត្រូវបានជ្រើសរើសដោយចៃដន្យសម្រាប់ការប្រមូលទិន្នន័យ។ សិស្សថ្នាក់ទី១២ ចំនួន១០នាក់ត្រូវជ្រើសរើសចេញពីក្នុងថ្នាក់នីមួយៗ នៅតាមគ្រប់វិទ្យាល័យដែលបានជ្រើសរើសដើម្បីឱ្យបំពេញកម្រងសំណួរ។ ចំនួនអ្នកចូលរួមក្នុងការផ្តល់កម្រងសំណួរ ក្នុងដំណាក់កាលសិក្សាស្រាវជ្រាវនេះគឺអាស្រ័យលើចំនួនថ្នាក់សិស្សទី១២នៅតាមវិទ្យាល័យនីមួយៗ ដោយពុំបានកំណត់ចំនួនសម្រាប់សាលារៀននីមួយៗឡើយ។ សរុបរួមចំនួនសិស្សថ្នាក់ទី១២ទាំង៥ រាជធានី-ខេត្តដែលបានចូលរួមបំពេញកម្រងសំណួរ មានចំនួនសរុប៦៩៦នាក់ សិស្សប្រុសចំនួន ៣១៧នាក់ (៤៥.៦%) និង សិស្សស្រីចំនួន ៣៧៩នាក់ (៥៤.៤%) ហើយសិស្សមកពីតំបន់ទីប្រជុំជនចំនួន ៣៧២នាក់(៥៣.៤%)និងទីជនបទចំនួន៣២៤នាក់(៤៦.៥%)។

ចំនួនសំណាកតាមភេទ និងតាមតំបន់នៃសាលារៀនក្នុងការ សិក្សាស្រាវជ្រាវនេះ ត្រូវបានបង្ហាញនៅក្នុងតារាងទី១។

តារាងទី១៖ ចំនួនសំណាកតាមភេទ និងតំបន់សាលារៀន

ថ្នាក់ទិន្នន័យ	ប្រេកង់	ភាគរយ
ភេទ		
ប្រុស	៣១៧	៤៥.៦
ស្រី	៣៧៩	៥៤.៤
សរុប	**៦៩៦**	**១០០**
តំបន់នៃសាលារៀន		
ទីប្រជុំជន	៣៧២	៥៣.៤
ទីជនបទ	៣២៤	៤៦.៦
សរុប	**៦៩៦**	**១០០**

២.២ ការប្រមូលទិន្នន័យ

ការស្រាវជ្រាវនេះប្រើទិន្នន័យតាមបែបបរិមាណវិស័យដែលត្រូវប្រមូលតាមរយៈការបំពេញកម្រងសំណួរ។ កម្រងសំណួរត្រូវបានរៀបចំឡើងជាពាក់កណ្តាលទម្រង់ដែលមានចម្លើយស្រាប់ដើម្បីឱ្យអ្នកឆ្លើយជ្រើសរើស និងមានសំណួរបើក ដើម្បីឱ្យអ្នកឆ្លើយបានបញ្ចេញនូវគំនិតផ្ទាល់ខ្លួន។ កម្រងសំណួរដែលបានបង្កើតរួចត្រូវបានប្រើប្រាស់សាកល្បងនៅវិទ្យាល័យអនុវត្តន៍នៃវិទ្យាស្ថានជាតិអប់រំក្នុងរាជធានីភ្នំពេញដើម្បីរកឱ្យឃើញនូវភាពដែលអាចជឿទុកចិត្តបាននិងភាពមិនសមស្របនៃសំណួរនីមួយៗ ហើយត្រូវបានធ្វើការកែតម្រូវនៅមុនពេលប្រើប្រាស់ក្នុងការប្រមូលទិន្នន័យផ្លូវការ។

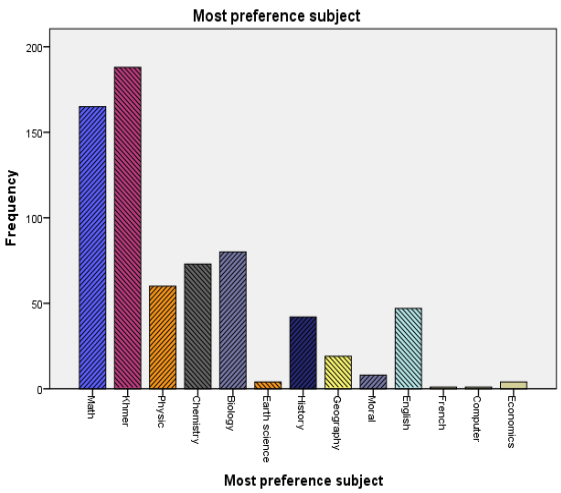
២.៣ ការវិភាគទិន្នន័យ

ទិន្នន័យ ដែលទទួលបានពីការសិក្សាស្រាវជ្រាវនេះ ត្រូវបានប្រើប្រាស់ដើម្បីឈ្វេងយល់ពីកត្តាសំខាន់ៗដែលជះឥទ្ធិពលលើការសម្រេច និងជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាដែលបានជ្រើសរើសរបស់សិស្សថ្នាក់ទី១២។ ទិន្នន័យទាំងអស់ដែលទទួលបានពីកម្រងសំណួរត្រូវបានធ្វើវិភាគ តាមបែបបរិមាណវិស័យដោយចងជាកូដនូវអថេរនីមួយៗ និងបញ្ចូលក្នុងកម្មវិធី SPSS។ ទិន្នន័យទាំងអស់ត្រូវបានបង្ហាញជាប្រេកង់ និងមធ្យមភាគ។យើងប្រើប្រាស់បញ្ជាមួយចំនួនក្នុងSPSSដូចជាExplore សម្រាប់គណនាតម្លៃមធ្យមនៃអថេរបរិមាណនីមួយៗ,Crosstab សម្រាប់រកភាគរយអថេរពីរខ្វែងគ្នា(ឧទាហរណ៍ មុខវិជ្ជាចូលចិត្តរៀននៅវិទ្យាល័យ និងមុខជំនាញជ្រើសរើស), Correlation Analysis (សម្រាប់វិភាគពីទំនាក់ទំនងរវាងការ ជ្រើសរើសមុខជំនាញធៀបនឹងកត្តាផ្សេងៗ),Independent T-Test (សម្រាប់សន្និដ្ឋានភាពខុសគ្នានៃតម្លៃមធ្យមរបស់កត្តាពីរៗ), Analysis of Variance (One-Way ANOVA) (សម្រាប់សន្និដ្ឋានភាពខុសគ្នានៃតម្លៃមធ្យមរបស់កត្តាទាំងអស់) និងChi-Square(សម្រាប់វិភាគរកភាពខុសគ្នានៃភាគរយមុខជំនាញចង់ជ្រើសរើស និងមុខវិជ្ជាដែលសិស្សចូលចិត្តរៀននៅវិទ្យាល័យ) ក៏ត្រូវបានប្រើប្រាស់ជាមូលដ្ឋានក្នុងការវិភាគនេះតាមរយៈកម្មវិធីIBM SPSS Statistics 23 ដើម្បីរកតម្លៃស្ថិតិបង្ហាញពីការពណ៌នាទិន្នន័យ កម្រិតទំនាក់ទំនងគ្នារវាងអថេរនីមួយៗកម្រិតខុសគ្នាជាក់លាក់នៃមធ្យម និងចំនួនប្រេកង់តាងចម្លើយរបស់ភាគសំណាក។ ទិន្នន័យដែលវិភាគរួចត្រូវបានបង្ហាញតាមរយៈតារាងនិងក្រាហ្វផ្សេងៗ

៣. លទ្ធផលស្រាវជ្រាវ

៣.១ មុខវិជ្ជាដែលសិស្សចូលចិត្តរៀនបំផុតនៅវិទ្យាល័យ ៖

លទ្ធផលនៃការសិក្សាស្រាវជ្រាវដូចមានក្នុងតារាងទី២ បានបង្ហាញឱ្យឃើញថា សិស្សថ្នាក់ទី១២មានចំណាងចំណូលចិត្តលើមុខវិជ្ជារៀនផ្សេងៗគ្នា។ តាមរយៈការវិភាគ Chi-square បានបង្ហាញឱ្យឃើញពីភាពខុសគ្នានៃការចូលចិត្តរៀនតាមមុខវិជ្ជានីមួយៗមានដូចជា ៖ ភាសាខ្មែរ គណិតវិទ្យា ជីវវិទ្យា គីមីវិទ្យា រូបវិទ្យា ភាសាអង់គ្លេស និងប្រវត្តិវិទ្យា)គេបានSig.=0.000ជាតម្លៃតូចបំផុតដែលអាចឱ្យយើងសន្និដ្ឋានបានថាចំនួនសិស្សដែលចូលចិត្តរៀនតាមមុខវិជ្ជាខាងលើមានភាពខុសគ្នាគួរឱ្យកត់សម្គាល់ខ្លាំងបំផុត។ ដូច្នេះយើងអាចអះអាងបានថា

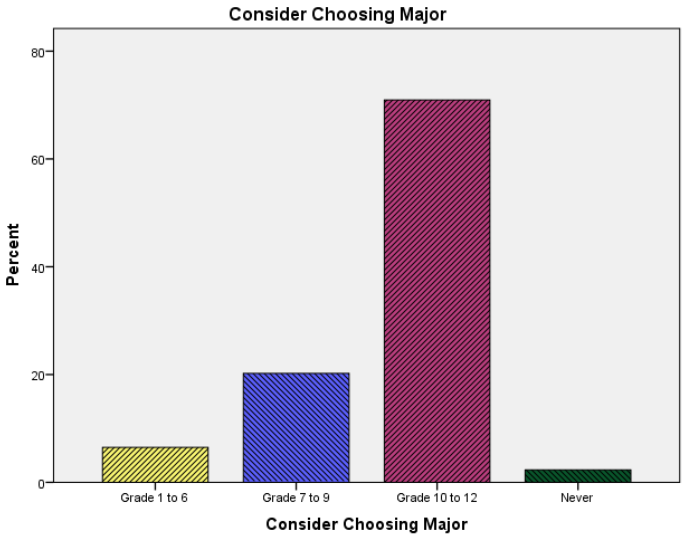


សិស្សមួយចំនួនដែលបានផ្តល់ទិន្នន័យភាគច្រើនចូលចិត្តរៀនមុខវិជ្ជាភាសាខ្មែរច្រើនជាងគេរហូតដល់ចំនួន២៧.២% មុខវិជ្ជាគណិតវិទ្យាមានចំនួន ២៣.៨% មុខវិជ្ជាជីវវិទ្យាមានចំនួន១១.៦% មុខវិជ្ជាគីមីវិទ្យាមានចំនួន១០.៥% មុខវិជ្ជារូបវិទ្យាមានចំនួន៨.៧% មុខវិជ្ជាភាសាអង់គ្លេសមានចំនួន៦.៨% មុខវិជ្ជាប្រវត្តិវិទ្យាមាន ចំនួន៦.១% និងមុខវិជ្ជាផ្សេងៗទៀតដូចជាភាសាបារាំង សីលធម៌ពលរដ្ឋ ភូមិវិទ្យា ផែនដីវិទ្យាសេដ្ឋកិច្ច និងព័ត៌មានវិទ្យាមានសិស្សចូលចិត្តរៀនតិចបំផុតដោយសរុបស្មើនឹង៥.៣% ប៉ុណ្ណោះនៃសិស្សទាំងអស់។

តារាងទី២៖ មុខវិជ្ជានានាដែលសិស្សថ្នាក់ទី១២ ចូលចិត្តរៀនបំផុតនៅវិទ្យាល័យ

មុខវិជ្ជា	ប្រេកង់	ភាគរយ
ភាសាខ្មែរ	១៨៨	២៧.២
គណិតវិទ្យា	១៦៥	២៣.៨
ជីវវិទ្យា	៨០	១១.៦
គីមីវិទ្យា	៧៣	១០.៥
រូបវិទ្យា	៦០	៨.៧
ភាសាអង់គ្លេស	៤៧	៦.៨
ប្រវត្តិវិទ្យា	៤២	៦.១
ផ្សេងៗ	៣៧	៥.៣
សរុប	**៦៩២**	**១០០**

៣.២- ដំណាក់កាលនៃការពិចារណាពីជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សា



លទ្ធផលដែលបានពីការសិក្សាស្រាវជ្រាវលើការពិចារណាដំបូងរបស់សិស្សថ្នាក់ទី១២ក្នុងការរើសជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សា ត្រូវបានបង្ហាញក្នុងតារាងទី៣ និងក្រាបសសរនៅខាងស្តាំដៃ។ យើងសង្កេតឃើញថា សិស្សចំនួន២.៣% មិនដែលធ្លាប់បានគិតពីការជ្រើសរើសជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាឡើយ។ ម្យ៉ាងទៀត សិស្សភាគច្រើនបានចាប់ផ្តើមគិតគូរពីការជ្រើសរើសជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាក្នុងកំឡុងពេលដែលពួកគេកំពុងសិក្សានៅថ្នាក់វិទ្យាល័យ ដែលមានរហូតដល់ ៧១% ថ្នាក់អនុវិទ្យាល័យមានចំនួន ២០.២% និងថ្នាក់បឋមសិក្សាមានត្រឹមតែ៦.៥%ប៉ុណ្ណោះ។ ម៉្យាងទៀត តាមរយៈការវិភាគ Chi-square លើចំនួនប្រេកង់នៃទិន្នន័យខាងលើយើងបាន Sig.=0.000 មានតម្លៃខិតទៅរកសូន្យ ដែលនាំឱ្យយើងអាចសន្និដ្ឋានបានថា សិស្សភាគច្រើនបំផុតបានសម្រេចចិត្តជ្រើសរើសឯកទេសសម្រាប់សិក្សានៅមហាវិទ្យាល័យ នៅពេលដែលពួកគេកំពុងសិក្សានៅវិទ្យាល័យ។

តារាងទី៣៖ កម្រិតសិក្សាដែលសិស្សបានពិចារណាដំបូងពីជំនាញដែលត្រូវរៀននៅសាកលវិទ្យាល័យ

កម្រិតសិក្សា	ប្រេកង់	ភាគរយ
វិទ្យាល័យ	៤៩១	៧១
អនុវិទ្យាល័យ	១៤០	២០.២
បឋមសិក្សា	៤៥	៦.៥
មិនធ្លាប់គិត	១៦	២.៣
សរុប	**៦៩២**	**១០០**

៣.៣ ជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សា

ជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សា ដែលបានជ្រើសរើសដោយសិស្សថ្នាក់ទី១២ ដែលបានពីការសិក្សាស្រាវជ្រាវនេះ ត្រូវបានបង្ហាញតាមរយៈតារាងទី៤ និងក្រាបខាងក្រោម។ តាមលទ្ធផលនៃការវិភាគ Chi-square ទៅលើចំនួនប្រែកង់របស់សិស្ស ដែលបានរើសមុខជំនាញឯកទេសនីមួយៗដើម្បីបង្ហាញពីភាពខុសគ្នានៃការរើសឯកទេស យើងទទួលបានតម្លៃ Sig.=0.000 ដែលបង្ហាញឱ្យឃើញថា ចំនួនសិស្សដែលចង់បន្តការសិក្សាថ្នាក់ឧត្តមសិក្សាតាមជំនាញនីមួយៗមានតម្លៃផ្សេងគ្នាយ៉ាងពិតប្រាកដ ។ ដូចនេះ យើងអាចសន្និដ្ឋានបានថា មុខជំនាញឯកទេសចំនួន៣៧ មុខដែលសិស្សចូលចិត្ត និងចង់បន្តការសិក្សាបំផុតនៅថ្នាក់ឧត្តមសិក្សាមានចំណាត់ថ្នាក់ដូចខាងក្រោម ៖

១- វេជ្ជសាស្ត្រមានសិស្សចំនួន ១១.៧% ចង់បន្តការសិក្សា
២-វិស្វករសំណង់មានសិស្សចំនួន ៧.៩% ចង់បន្តការសិក្សា
៣- ច្បាប់ និងគ្រប់គ្រងមានសិស្សចំនួន ៦.៨% ដូចគ្នាចង់បន្តការសិក្សា
៤- រដ្ឋបាលសាធារណៈមានសិស្សចំនួន ៦.២% ចង់បន្តការសិក្សា
៥ -ព័ត៌មានវិទ្យាមានសិស្សចំនួន ៥.៩% ចង់បន្តការសិក្សា
៦- គណនេយ្យមានសិស្សចំនួន ៥.៦% ចង់បន្តការសិក្សា
៧- កសិកម្មមានសិស្សចំនួន ៤.៤% ចង់បន្តការសិក្សា
៨- គីមីវិទ្យា និងអគ្គិសនីមានសិស្សចំនួន ៤.២% ដូចគ្នាចង់បន្តការសិក្សា
៩- ធនាគារ ទេសចរណ៍ និងភាសាខ្មែរមានសិស្សចំនួន ៤.0% ៣.៩% និង៣.៨%រៀងគ្នាចង់បនុ្តការសិក្សា
១0- ភាសាអង់គ្លេស និងទីផ្សារមានសិស្សចំនួន៣.៦% និង៣.៤% រៀងគ្នាចង់បន្តការសិក្សា
១១- គណិតវិទ្យា ជីវវិទ្យា និងទំនាក់ទំនងអន្តរជាតិមានសិស្សចំនួន ២.៨% ២.0% និង១.៩%រៀងគ្នាចង់បន្តការសិក្សា
១២- ពាណិជ្ជកម្ម ស្ថាបត្យកម្ម និងប្រវត្តិវិទ្យាមានសិស្សចំនួន ១.៥% ១.៤% និង១.២%រៀងគ្នាចង់បន្តការសិក្សា ។ល។

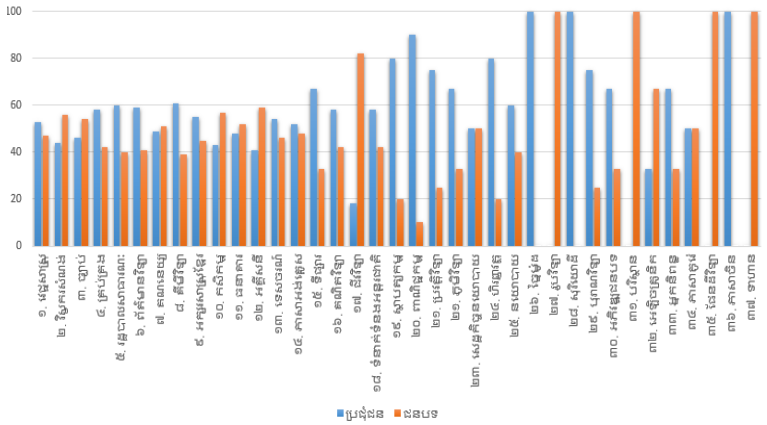
តារាងទី៤៖ ជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាដែលបានជ្រើសរើស

ចំណាត់ថ្នាក់	ជំនាញឯកទេស	ចំនួនសិស្ស	ភាគរយសិស្ស
១	វេជ្ជសាស្ត្រ	81	11.7
២	វិស្វករសំណង់	55	7.9
៣	ច្បាប់	46	6.6
៤	គ្រប់គ្រង	45	6.5
៥	រដ្ឋបាលសាធារណៈ	42	6.1
៦	ព័ត៌មានវិទ្យា	39	5.6
៧	គណនេយ្យ	37	5.3
៨	គីមីវិទ្យា	31	4.5
៩	ភាសាខ្មែរ	29	4.2
១0	កសិកម្ម	28	4
១១	ធនាគារ	27	3.9
១២	អគ្គិសនី	27	3.9
១៣	ទេសចរណ៍	26	3.7
១៤	ភាសាអង់គ្លេស	25	3.6
១៥	ទីផ្សារ	24	3.5
១៦	គណិតវិទ្យា	19	2.7
១៧	ជីវវិទ្យា	17	2.4
១៨	ទំនាក់ទំនងអន្តរជាតិ	12	1.7
១៩	ស្ថាបត្យកម្ម	10	1.4
២0	ពាណិជ្ជកម្ម	10	1.4

២១	ប្រវត្តិវិទ្យា	8	1.2
២២	ភូមិវិទ្យា	6	0.9
២៣	នយោបាយសេដ្ឋកិច្ច	6	0.9
២៤	ហិរញ្ញវត្ថុ	5	0.7
២៥	នគរបាល	5	0.7
២៦	ថ្នែម៉ូត	5	0.7
២៧	រូបវិទ្យា	4	0.6
២៨	សុរិយោដី	4	0.6
២៩	បុរាណវិទ្យា	4	0.6
៣០	អភិវឌ្ឍជនបទ	3	0.4
៣១	បរិស្ថាន	3	0.4
៣២	អេឡិចត្រូនិក	3	0.4
៣៣	អ្នកនិពន្ធ	3	0.4
៣៤	ភាសាកូរ៉េ	2	0.3
៣៥	ផែនដីវិទ្យា	1	0.1
៣៦	ភាសាចិន	1	0.1
៣៧	ទាហាន	1	0.1
សរុប		694	100

៣.៤ ការរើសមុខជំនាញរបស់សិស្សនៅទីប្រជុំជន និងជនបទ

តាមតារាងទី៥ ខាងក្រោមនេះបានបង្ហាញថា មានសិស្សនៃសាលារៀននៅទីប្រជុំជនចំនួន ៥៣.៥% និងសិស្សនៃសាលារៀននៅទីជនបទចំនួន ៤៦.៥% បានចូលរួមក្នុងការស្ទង់មតិនេះ ។



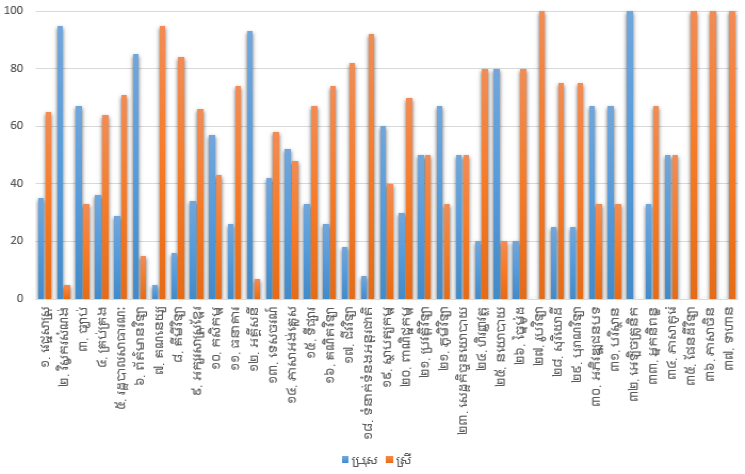
យើងសង្កេតឃើញថា ៖

- ***សិស្សនៅតាមទីប្រជុំជន៖*** ចង់បន្តសិក្សាជំនាញឯកទេសធៀបនឹងសិស្សនៅតំបន់ជនបទមានដូចជា៖ ជំនាញឯកទេសគណិតវិទ្យា(៥៧%) គីមីវិទ្យា(៦១%) ប្រវត្តិវិទ្យា(៧៥%) ភូមិវិទ្យា(៦៦%) អក្សរសាស្ត្រខ្មែរ(៥៥%) ព័ត៌មានវិទ្យា(៥៩%) ភាសាអង់គ្លេស(៦៦%) ទីផ្សារ(១៦%) គ្រប់គ្រង(២៦%) រដ្ឋបាលសាធារណៈ(៥៩%)ទេសចរណ៍(៥៣%) វេជ្ជសាស្ត្រ(៥៣%) ស្ថាបត្យកម្ម(៨0%) ទំនាក់ទំនងអន្តរជាតិ(៥៨%) និងពាណិជ្ជកម្ម(៩0%) ច្រើនជាងសិស្សនៅតាមទីជនបទ ។
- ***សិស្សនៅតាមទីជនបទ៖*** ចង់បន្តសិក្សាជំនាញឯកទេសធៀបនឹងសិស្សនៅតំបន់ទីប្រជុំជន មានដូចជា ៖ ជំនាញឯកទេសរូបវិទ្យា(១00%) ជីវៈវិទ្យា(៨២%) ច្បាប់(៥៤%) គណនេយ្យ(៥១%) កសិកម្ម(៥៧%) អគ្គិសនី(៥៩%) និងវិស្វកម្មសំណង់(៥៦%) ច្រើនជាងសិស្សនៅតាមទីប្រជុំជន ។

៣.៥ ការរើសមុខជំនាញរបស់សិស្សប្រុស និងសិស្សស្រី

តាមតារាងទី៥ ដដែលក៏បានបញ្ជាក់ថាមានសិស្សស្រីចំនួន ៥៤.៥% និងសិស្សប្រុសចំនួន ៤៥.៥% បានចូលរួមផ្តល់ចម្លើយស្តីពីការជ្រើសរើសជំនាញសម្រាប់បន្តការសិក្សានៅកម្រិតឧត្តមសិក្សា។

- ***សិស្សស្រី*** ៖ ភាគច្រើន ចង់បន្តការសិក្សាលើជំនាញឯកទេសគណិតវិទ្យា(៧៣%) រូបវិទ្យា(១០០%) គីមីវិទ្យា(៨៣%) ជីវវិទ្យា(៨២%) អក្សរសាស្ត្រខ្មែរ(៦៥%) គណនេយ្យ(៩៤%) ទីផ្សារ(៦៦%) ហិរញ្ញវត្ថុ(៨០%) គ្រប់គ្រង(៦៤%) រដ្ឋបាលសាធារណៈ(៧១%) ធនាគារ(៧៤%) វេជ្ជសាស្ត្រ(៦៥%) ទេសចរណ៍(៥៧%) ទំនាក់ទំនងអន្តរជាតិ(៩១%) ច្នៃម៉ូត(៨០%) ពាណិជ្ជកម្ម (៧០%) និងអ្នកនិពន្ធច្រើនជាងសិស្សប្រុស ។



- ***សិស្សប្រុស៖***

ភាគច្រើនពួកគេចង់បន្តការសិក្សាលើជំនាញឯកទេស ភូមិវិទ្យា(៦៦%) ច្បាប់(៦៧%) ព័ត៌មានវិទ្យា(៨៤%) ភាសាអង់គ្លេស (៥២%) កសិកម្ម(៥៧%) អគ្គិសនី(៩៦%) វិស្វកម្មសំណង(៩៤%) ស្ថាបត្យកម្ម(៦០%)អេឡិចត្រូនិក(១០០%) និងនយោបាយច្រើនជាងសិស្សស្រី ។ ដោយឡែកជំនាញឯកទេសដែលសិស្សទាំងពីរ ភេទចង់បន្តការសិក្សាដូចគ្នាមានដូចជា៖ ប្រវត្តិវិទ្យា និងសេដ្ឋកិច្ចនយោបាយ ។

តារាងទី៥៖ ជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាដែលបានជ្រើសរើសទៅតាមតំបន់របស់សិស្ស

ជំនាញឯកទេស	តំបន់របស់សាលារៀន			ភេទ		
	ប្រជុំជន	ជនបទ		ប្រុស	ស្រី	សរុប
១. វេជ្ជសាស្ត្រ	43	38		28	53	81
២. វិស្វកម្មសំណង់	24	31		52	3	55
៣. ច្បាប់	21	25		31	15	46
៤. គ្រប់គ្រង	26	19		16	29	45
៥. រដ្ឋបាលសាធារណៈ	25	17		12	30	42
៦. ព័ត៌មានវិទ្យា	23	16		33	6	39
៧. គណនេយ្យ	18	19		2	35	37
៨. គីមីវិទ្យា	19	12		5	26	31
៩. អក្សរសាស្ត្រខ្មែរ	16	13		10	19	29
១០. កសិកម្ម	12	16		16	12	28
១១. ធនាគារ	13	14		7	20	27
១២. អគ្គិសនី	11	16		25	1	27
១៣. ទេសចរណ៍	14	12		11	15	26
១៤. ភាសាអង់គ្លេស	13	12		13	12	25
១៥. ទីផ្សារ	16	8		8	16	24
១៦. គណិតវិទ្យា	11	8		5	14	19
១៧. ជីវវិទ្យា	3	14		3	14	17
១៨. ទំនាក់ទំនងអន្តរជាតិ	7	5		1	11	12
១៩. ស្ថាបត្យកម្ម	8	2		6	4	10

២០. ពាណិជ្ជកម្ម	9	1		3	7	10
២១. ប្រវត្តិវិទ្យា	6	2		4	4	8
២១. ភូមិវិទ្យា	4	2		4	2	6
២៣. សេដ្ឋកិច្ចនយោបាយ	3	3		3	3	6
២៤. ហិរញ្ញវត្ថុ	4	1		1	4	5
២៥. នយោបាយ	3	2		4	1	5
២៦. ច្នៃម៉ូដ	5	0		1	4	5
២៧. រូបវិទ្យា	0	4		0	4	4
២៨. សុរិយោដី	4	0		1	3	4
២៩. បុរាណវិទ្យា	3	1		1	3	4
៣០. អភិវឌ្ឍជនបទ	2	1		2	1	3
៣១. បរិស្ថាន	0	3		2	1	3
៣២. អេឡិចត្រូនិក	1	2		3	0	3
៣៣. អ្នកនិពន្ធ	2	1		1	2	3
៣៤. ភាសាកូរ៉េ	1	1		1	1	2
៣៥. ផែនដីវិទ្យា	0	1		0	1	1
៣៦. ភាសាចិន	1	0		0	1	1
៣៧. ទាហាន	0	1		0	1	1
សរុប	**370**	**323**		**315**	**378**	**693**

៣.៦ ជំនាញឯកទេសចង់បន្តការសិក្សានៅកម្រិតឧត្តមសិក្សាធៀបនឹងមុខវិជ្ជាដែលសិស្សចូលចិត្តរៀននៅវិទ្យាល័យ

តាមតារាងទី៦ បានបង្ហាញថាសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាដូចខាងក្រោមខ្លាំងបំផុត៖

- ***គណិតវិទ្យា*** ៖ ពួកគាត់ចង់បន្តការសិក្សានៅឧត្តមសិក្សាលើជំនាញឯកទេសគឺ វិស្វករ(១៨%), វេជ្ជសាស្ត្រ (១៣%), គណិតវិទ្យា(១១%), ព័ត៌មានវិទ្យា(១០%), គណនេយ្យ(៧%), ធនាគារ(៧%), ច្បាប់(៥%), អគ្គិសនី(៦%), គ្រប់គ្រង (៣%) និងស្ថាបត្យកម្ម(៣%) ធៀបនឹងចំនួនសរុប ១៦៥នាក់។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀន មុខវិជ្ជាគណិតវិទ្យាចំនួន ១៨%បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***រូបវិទ្យា ៖*** ពួកគាត់ចង់បន្តការសិក្សានៅឧត្តមសិក្សាលើជំនាញឯកទេសគឺ វិស្វករសំណង់(២០%), វេជ្ជសាស្ត្រ (១៣%) អគ្គិសនី(១៣%), គ្រប់គ្រង(៨.៣៣%), ព័ត៌មានវិទ្យា(៨.៣៣%), រូបវិទ្យា(៥%) ធៀបនិងចំនួនសរុប ៦០នាក់ ។ តាម លទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជារូបវិទ្យាចំនួន២១.៣៣% បានជ្រើសរើសជំនាញឯកទេស ពុំត្រឹមត្រូវ។
- ***គីមីវិទ្យា ៖*** ពួកគាត់ចង់បន្តការសិក្សានៅឧត្តមសិក្សាលើជំនាញឯកទេសគឺ គីមីវិទ្យា(២៧%) វេជ្ជសាស្ត្រ (១៥%), វិស្វករសំណង់(៦%), កសិកម្ម(៤%), ព័ត៌មានវិទ្យា(៤%), គណនេយ្យ(៣%), ធនាគារ(២%), គ្រប់គ្រង(២%) និងនគរបាល(២%) ធៀបនឹងចំនួនសរុប ៧៣នាក់។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជា គីមីវិទ្យាចំនួន ១៣%បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***ជីវវិទ្យា ៖*** ពួកគាត់ចង់បន្តការសិក្សានៅឧត្តមសិក្សាលើជំនាញឯកទេសគឺ វេជ្ជសាស្ត្រ(៣២%), ជីវវិទ្យា(១៦%) កសិកម្ម(៤%), គណនេយ្យ(៥%), ទេសចរ(៤%), វិស្វករសំណង់(៤%), ធនាគារ(២%), ទីផ្សារ(២%) និងច្បាប់(២%) ធៀបនឹង ចំនួនសរុប៨០នាក់។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាជីវវិទ្យាចំនួន ១៩%បានជ្រើសរើស ជំនាញឯកទេសពុំត្រឹមត្រូវ។

- ***ផែនដីវិទ្យា ៖*** ពុំសូវជាមានច្រើននាក់ទេ ហើយពួកគេមិនបានជ្រើសរើសជំនាញឯកទេសនេះទេ ប៉ុន្តែពួកគេបែរជាចង់សិក្សាជំនាញច្បាប់០១នាក់ កសិកម្ម០១នាក់ ព័ត៌មានវិទ្យា០១នាក់ និងវិស្វករសំណង់០១នាក់ ទៅវិញ។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាផែនដីវិទ្យាចំនួន ១០០%បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***ភូមិវិទ្យា ៖*** ពុំសូវជាមានសិស្សច្រើននាក់ទេ ពួកគេចង់សិក្សាជំនាញគឺ ភូមិវិទ្យា៤នាក់, គ្រប់គ្រង៣នាក់, កសិកម្ម៣នាក់, រដ្ឋបាលសាធារណៈ២នាក់, រូបវិទ្យា០១នាក់, ផែនដីវិទ្យា០១នាក់, ច្បាប់០១នាក់, ព័ត៌មានវិទ្យា០១នាក់ ទីផ្សារ ០១នាក់, វេជ្ជសាស្ត្រ០១នាក់ និងពាណិជ្ជកម្ម០១នាក់។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាភូមិវិទ្យាចំនួន១១នាក់ ត្រូវនឹង៥៨%នៃសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាភូមិវិទ្យា បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***កុំព្យូទ័រ ៖*** ខ្លាំងបំផុតមានតែម្នាក់គត់ គាត់ចង់សិក្សាជំនាញព័ត៌មានវិទ្យា។
- ***សេដ្ឋកិច្ច ៖*** ពួកគេចង់សិក្សាជំនាញគឺ ទីផ្សារ ៣នាក់ និង៣ណិជ្ជកម្ម ០១នាក់ ។
- ***ភាសាខ្មែរ ៖*** ពួកគាត់ចង់បន្តការសិក្សានៅឧត្តមសិក្សាលើជំនាញឯកទេស ទី១គឺភាសាខ្មែរ២៩ ទី២គឺរដ្ឋបាលសាធារណៈ២៨នាក់ ទី៣គឺគ្រប់គ្រង២៥នាក់ ទី៤គឺច្បាប់១៩នាក់ ទី៥គឺគណនេយ្យ១៥នាក់ ទី៦គឺទីផ្សារ១១នាក់ ទី៧គឺ កសិកម្ម ៨នាក់ ធនាគារ ៧នាក់ អង់គ្លេស ៦នាក់ ទេសចរណ៍ ៦នាក់ អគ្គិសនី ៥នាក់ និងព័ត៌មានវិទ្យា ៤នាក់ ។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាភាសាខ្មែរចំនួន ៥០នាក់ ត្រូវនឹង ៣០.៥% នៃសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាភាសាខ្មែរបានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***ប្រវត្តិវិទ្យា៖*** ពុំសូវជាមានច្រើននាក់ទេ ពួកគេចង់សិក្សាជំនាញគឺ ប្រវត្តិវិទ្យា ៨នាក់ ច្បាប់ ៦នាក់ ទេសចរណ៍ ៦នាក់ ព័ត៌មានវិទ្យា ៣នាក់ អង់គ្លេស ២នាក់ ទីផ្សារ ២នាក់ គ្រប់គ្រង២នាក់ អគ្គិសនី ២នាក់ និង បុរាណវិទ្យា ២នាក់ ។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាប្រវត្តិវិទ្យាចំនួន ១១នាក់ ត្រូវនឹង ៣៣.៣៣% នៃសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាប្រវត្តិវិទ្យា បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***សីលធម៌ ៖*** ពុំសូវជាមានច្រើននាក់ទេពួកគេចង់សិក្សាជំនាញទី១គឺរដ្ឋបាលសាធារណៈ២នាក់ និងច្បាប់២នាក់ ទី២គឺ វេជ្ជសាស្ត្រ១នាក់ គ្រប់គ្រង១នាក់ ទីផ្សារ១នាក់ និងភូមិវិទ្យា១នាក់ ។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាសីលធម៌ចំនួន ៤នាក់ ត្រូវនឹង ៥០% នៃសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជានេះ បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***ភាសាអង់គ្លេស ៖*** ពុំសូវជាមានច្រើននាក់ដែរ ពួកគេចង់សិក្សាជំនាញទី១គឺភាសាអង់គ្លេស១៤នាក់ ទី២គឺ ទំនាក់ទំនងអន្តរជាតិ ៦នាក់ និងទេសចរណ៍ ៦នាក់ ទី៣គឺច្បាប់៤នាក់ ទី៤គឺរដ្ឋបាលសាធារណៈ ៣នាក់ និងព័ត៌មានវិទ្យា ៣នាក់ ទី៥គឺ ពាណិជ្ជកម្ម ២នាក់ អគ្គិសនី ២នាក់ និងទីផ្សារ ២នាក់។ តាមលទ្ធផលនេះបង្ហាញឱ្យឃើញថាមានសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជាភាសាអង់គ្លេសចំនួន ៩នាក់ ត្រូវនឹង ២១.៤៣% នៃសិស្សដែលចូលចិត្តរៀនមុខវិជ្ជានេះ បានជ្រើសរើសជំនាញឯកទេសពុំត្រឹមត្រូវ។
- ***ភាសាបារាំង ៖*** មានតែម្នាក់គត់តែបែរជាចង់សិក្សាជំនាញគណិតវិទ្យាទៅវិញ។

សរុបមកមានសិស្សចំនួន ១៥៩នាក់ស្មើនឹង ២៣% នៃសិស្សទាំងអស់ដែលបានជ្រើសរើសជំនាញឯកទេសសម្រាប់សិក្សានៅតាមគ្រឹះស្ថានឧត្តមសិក្សា ពុំបានត្រឹមត្រូវតាមមុខវិជ្ជាដែលខ្លួនចូលចិត្តសិក្សានៅវិទ្យាល័យ បញ្ហាទាំងនេះបញ្ជាក់ឱ្យឃើញថាពួកគេបានទទួលរងឥទ្ធិពលពីកត្តាផ្សេងៗមួយចំនួនដូចជា៖ កត្តាមជ្ឈដ្ឋានសាលារៀន កត្តាមាតាបិតា កត្តាបងប្អូន និងកត្តាសង្គមការងារជាដើម ដែលក្រុមស្រាវជ្រាវយើងខ្ញុំនឹងព្យាយាមវិភាគរុករកឱ្យឃើញពីកត្តាទាំងនេះនៅផ្នែកខាងមុខទៀត។

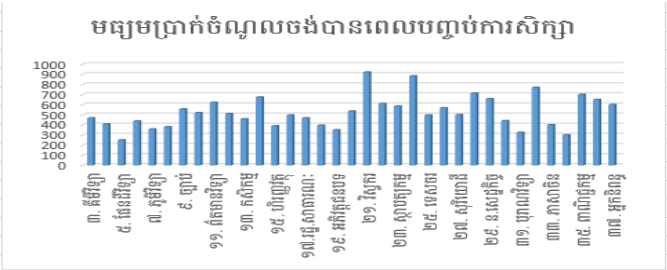
តារាងទី៦៖ ជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាធៀបនឹងមុខវិជ្ជាដែលសិស្សចូលចិត្តរៀនបំផុតនៅវិទ្យាល័យ

ល.រ	ជំនាញឯកទេស	មុខវិជ្ជាដែលចូលចិត្តរៀនបំផុតនៅវិទ្យាល័យ													
		គណិត	ខ្មែរ	រូប	គីមី	ជីវៈ	ផែនដី	ប្រវត្តិ	ភូមិ	សី.ធម៌	អ.គ្លេស	បារាំង	កុំព្យូទ័រ	សេដ្ឋកិច្ច	សរុប
១	វេជ្ជសាស្ត្រ	22	0	8	15	32	0	1	1	1	1	0	0	0	81
២	វិស្វករសំណង់	30	1	12	6	4	1	0	0	0	1	0	0	0	55
៣	ច្បាប់	9	19	2	0	2	1	6	1	2	4	0	0	0	46
៤	គ្រប់គ្រង	6	25	5	2	0	0	2	3	1	1	0	0	0	45
៥	រដ្ឋ.សាធារណៈ	2	28	2	1	1	0	1	2	2	3	0	0	0	42
៦	ព័ត៌មានវិទ្យា	17	4	5	4	0	1	3	1	0	3	0	1	0	39

๗	គណនេយ្យ	12	15	2	3	5	0	0	0	0	0	0	0	0	37
๘	គីមីវិទ្យា	1	1	2	27	0	0	0	0	0	0	0	0	0	31
๙	ភាសារខ្មែរ	0	29	0	0	0	0	0	0	0	0	0	0	0	29
๑๐	កសិកម្ម	4	8	1	4	6	1	0	3	0	0	0	0	0	27
๑๑	អគ្គិសនី	9	5	8	0	1	0	2	0	0	2	0	0	0	27
๑๒	ធនាគារ	12	7	2	2	2	0	1	0	0	0	0	0	0	26
๑๓	ទេសចរណ៍	2	6	1	1	4	0	6	0	0	6	0	0	0	26
๑๔	អង់គ្លេស	1	6	1	0	1	0	2	0	0	14	0	0	0	25
๑๕	ទីផ្សារ	0	11	1	1	2	0	2	1	1	2	0	0	3	24
๑๖	គណិតវិទ្យា	18	0	0	0	0	0	0	0	0	0	1	0	0	19
๑๗	ជីវវិទ្យា	0	0	0	1	16	0	0	0	0	0	0	0	0	17
๑๘	ទំ.ទំ.អន្តរជាតិ	0	4	0	0	1	0	1	0	0	6	0	0	0	12
๑๙	ស្ថាបត្យកម្ម	6	0	2	1	0	0	1	0	0	0	0	0	0	10
๒๐	ពាណិជ្ជកម្ម	5	0	0	1	0	0	0	11	0	2	0	0	1	10
๒๑	ប្រវត្តិវិទ្យា	0	0	0	0	0	0	8	0	0	0	0	0	0	8
๒๒	ភូមិវិទ្យា	0	0	0	0	0	0	1	4	1	0	0	0	0	6
๒๓	ន.សេដ្ឋកិច្ច	2	0	1	1	1	0	0	0	0	1	0	0	0	6
๒๔	ហិរញ្ញវត្ថុ	1	3	1	0	0	0	0	0	0	0	0	0	0	5
๒๕	នគរបាល	1	2	0	2	0	0	0	0	0	0	0	0	0	5
๒๖	ច្នៃម៉ូត	5	0	0	0	0	0	0	0	0	0	0	0	0	5
๒๗	រូបវិទ្យា	0	0	3	0	0	0	0	1	0	0	0	0	0	4
๒๘	សុរិយោដី	0	3	0	0	0	0	0	0	0	1	0	0	0	4
๒๙	បុរាណវិទ្យា	0	1	0	0	1	0	2	0	0	0	0	0	0	4
๓๐	អភិវឌ្ឍជនបទ	0	3	0	0	0	0	0	0	0	0	0	0	0	3
๓๑	បរិស្ថាន	0	1	0	1	1	0	0	0	0	0	0	0	0	3
๓๒	អេឡិចត្រូនិក	0	1	1	0	0	0	1	0	0	0	0	0	0	3
๓๓	អ្នកនិពន្ធ	0	2	0	0	0	0	1	0	0	0	0	0	0	3
๓๔	ភាសាកូរ៉េ	0	2	0	0	0	0	0	0	0	0	0	0	0	2
๓๕	ផែនដីវិទ្យា	0	0	0	0	0	0	0	1	0	0	0	0	0	1
๓๖	ភាសាចិន	0	1	0	0	0	0	0	0	0	0	0	0	0	1
๓๗	ទាហាន	0	0	0	0	0	0	1	0	0	0	0	0	0	1
សរុប		**165**	**188**	**60**	**73**	**80**	**4**	**42**	**19**	**8**	**47**	**1**	**1**	**4**	**692**

๓.๗ កត្តាដែលមានឥទ្ធិពលលើការសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សា

๓.๗.๑.ភ្ជាប់ពីងចង់បានប្រាក់ចំណូល



តាមលទ្ធផលស្រាវជ្រាវបង្ហាញថា (តារាងទី៧) សិស្សដែលមានបំណងចង់រៀនជំនាញពេទ្យ មានចំនួនច្រើនជាង ពីព្រោះគេចង់បានប្រាក់ចំណូលច្រើនគួរសមគិតជាមធ្យមចំនួន៦១០$ ដោយឡែកមុខជំនាញវិស្វកម្មសំណង់ដែលជាប់ចំណាត់ទី២នោះ សិស្សចង់បានប្រាក់ចំណូលច្រើនជាងគេគិតជាមធ្យមចំនួន៩២២$។ មុខជំនាញច្បាប់ និងគ្រប់គ្រង ដែលជាប់ចំណាត់ទី៣នោះសិស្សចង់បានប្រាក់ចំណូលគិតជាមធ្យមចំនួន៥៥៦.៦៧$ និង៤៩៦.៦៧$ រៀងគ្នា។ មុខជំនាញរដ្ឋបាលសាធារណៈដែលជាប់ចំណាត់ទី៤នោះ សិស្សចង់បានប្រាក់ចំណូលគិតជាមធ្យមចំនួន៤៦៧.៨០$។ មុខជំនាញព័ត៌មានវិទ្យាដែលជាប់ចំណាត់ទី៥នោះ សិស្សចង់បានប្រាក់ចំណូលគិតជា

មធ្យមចំនួន៦២២.៣៧$។ មុខជំនាញគណនេយ្យដែលជាប់ចំណាត់ទី៦នោះ សិស្សចង់បានប្រាក់ចំណូលគិតជាមធ្យមចំនួន ៥២០.២៧$។ មុខជំនាញកសិកម្មដែលជាប់ចំណាត់ថ្នាក់ទី៧នោះ សិស្សចង់បានប្រាក់ចំណូលគិតជាមធ្យមចំនួន៤៥៩$។ មុខជំនាញគីមីវិទ្យា និងអគ្គិសនីដែលជាប់ចំណាត់ទី៨នោះ សិស្សចង់បានប្រាក់ចំណូលគិតជាមធ្យមចំនួន៤៦៧.៧៤$ និង៥៣៦.៣០$ រៀងគ្នា។ ជាសរុបយើងពិនិត្យឃើញថា សិស្សចង់បានប្រាក់ចំណូលពេលចាប់ផ្តើមធ្វើការដំបូងគិតជាមធ្យមចំនួនប្រហែល ៥០០$ ដែលក្នុងនោះសមាជិកក្នុងគ្រួសាររបស់ពួកគេគិតជាមធ្យមមានចំនួនតែ ៥នាក់ប៉ុណ្ណោះ។

តារាងទី៧៖ ជំនាញបន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សាធៀបនឹងការចង់បានប្រាក់ចំណូល និងចំនួនសមាជិកគ្រួសារ

ជំនាញឯកទេស	មធ្យមប្រាក់ចំណូលចង់បានពេលបញ្ចប់ការសិក្សា($)	មធ្យមចំនួនសមាជិកក្នុងគ្រួសារ(នាក់)
១. គណិតវិទ្យា	452.63	4.95
២. រូបវិទ្យា	462.50	3.00
៣. គីមីវិទ្យា	467.74	5.84
៤. ជីវវិទ្យា	407.65	5.82
៥. ផែនដីវិទ្យា	250.00	11.00
៦. ប្រវត្តិវិទ្យា	437.50	5.75
៧. ភូមិវិទ្យា	358.33	6.67
៨. ភាសាខ្មែរ	381.03	5.66
៩. ច្បាប់	556.67	5.50
១០. គណនេយ្យ	520.27	5.41
១១. ព័ត៌មានវិទ្យា	622.37	5.18
១២. អង់គ្លេស	510.42	4.84
១៣. កសិកម្ម	458.93	5.86
១៤. ទីផ្សារ	674.09	5.04
១៥. ហិរញ្ញវត្ថុ	390.00	6.00
១៦. គ្រប់គ្រង	496.67	5.09
១៧.រដ្ឋ.សាធារណៈ	467.80	5.00
១៨. ធនាគារ	395.56	5.15
១៩. អភិវឌ្ឍជនបទ	350.00	3.67
២០. អគ្គិសនី	536.30	5.59
២១. វិស្វករសំណង់	921.70	5.24
២២. វេជ្ជសាស្ត្រ	609.63	5.22
២៣. ស្ថាបត្យកម្ម	585.00	5.40
២៤. បរិស្ថាន	883.33	4.00
២៥. ទេសចរណ៍	497.08	5.38
២៦. អេឡិចត្រូនិក	566.67	5.67
២៧. សុរិយោដី	500.00	6.50
២៨. ទំ.ទំ.អន្តរជាតិ	712.50	5.33
២៩. ន.សេដ្ឋកិច្ច	658.33	4.50
៣០. នគរបាល	440.00	4.80
៣១. បុរាណវិទ្យា	325.00	5.50
៣២. ឆ្នៃម៉ូត	770.00	5.80

៣៣. ភាសាចិន	400.00	5.00
៣៤. ទាហាន	300.00	7.00
៣៥. ពាណិជ្ជកម្ម	700.00	5.30
៣៦. ភាសាកូរ៉េ	650.00	6.50
៣៧. អ្នកនិពន្ធ	600.00	6.00
សរុប	**555.37**	**5.33**

៣.៧.២ កត្តាស្ថានភាពគ្រួសារ

តាមការវិភាគរាប់ចំនួនតាម CrossTabe ដោយប្រើប្រាស់កម្មវិធី SPSS យើងអាចកំណត់បានថាសិស្សដែលចង់រៀនឯកទេសជំនាញដូចខាងក្រោម៖

- ***វេជ្ជសាស្ត្រ*** ៖ សិស្សភាគច្រើនពួកគេមានស្ថានភាពគ្រួសារ៖ ឪពុក-ម្តាយរស់នៅជាមួយគ្នា ឪពុកមានកម្រិតអប់រំបឋមសិក្សា ម្តាយមានកម្រិតអប់រំអនុវិទ្យាល័យ ឪពុក និងម្តាយមានការងារជាកសិករដូចគ្នា និងមានសមាជិកក្នុងគ្រួសារជានិស្សិតសិក្សានៅតាមសាកលវិទ្យាល័យនានា។
- ***ជំនាញវិស្វករ ច្បាប់ គ្រប់គ្រង រដ្ឋបាលសាធារណៈ និងគណនេយ្យ*** ៖ សិស្សភាគច្រើនពួកគេមាន ស្ថានភាពគ្រួសារ៖ ឪពុក-ម្តាយរស់នៅជាមួយគ្នា ឪពុក និងម្តាយមានកម្រិតអប់រំអនុវិទ្យាល័យ ឪពុក និងម្តាយមានការងារជាកសិករដូចគ្នា និងគ្មានសមាជិកក្នុងគ្រួសារជានិស្សិតសិក្សានៅតាមសាកលវិទ្យាល័យទេ។
- ***ព័ត៌មានវិទ្យា*** ៖ សិស្សភាគច្រើនពួកគេមានស្ថានភាពគ្រួសារ៖ ឪពុក-ម្តាយរស់នៅជាមួយគ្នា ឪពុកមានកម្រិតអប់រំវិទ្យាល័យ ម្តាយមានកម្រិតអប់រំអនុវិទ្យាល័យ ឪពុក និងម្តាយមានការងារជាកសិករដូចគ្នា និងមានសមាជិកក្នុងគ្រួសារមិនមែនជានិស្សិតសិក្សានៅតាមសាកលវិទ្យាល័យទេ។

និយាយជារួមសិស្សដែលមានបំណងបន្តការសិក្សាឯកទេសជំនាញនៅតាមសាកលវិទ្យាល័យនានា ពួកគេភាគច្រើនមានស្ថានភាពគ្រួសារ៖ ឪពុក-ម្តាយរស់នៅជាមួយគ្នា ឪពុកមានកម្រិតអប់រំអនុវិទ្យាល័យ ម្តាយមានកម្រិតអប់រំអនុវិទ្យាល័យ ឪពុក និងម្តាយមានការងារជាកសិករដូចគ្នា និងគ្មានសមាជិកក្នុងគ្រួសារជានិស្សិតបានសិក្សានៅតាមសាកលវិទ្យាល័យទេ។

តារាងទី៨៖ កត្តាស្ថានភាពគ្រួសារ

ឯកទេសជ្រើសរើស	តើឪពុកម្តាយរស់នៅជាមួយគ្នាឬទេ?					សរុប
	ជាមួយគ្នា	លែងលះ	ឪពុកស្លាប់	ម្តាយស្លាប់	ស្លាប់ទាំងពីរ	
១.វេជ្ជសាស្ត្រ	69	9	0	3	0	81
២.វិស្វករសំណង់	47	3	3	1	1	55
៣. ច្បាប់	39	4	2	1	0	46
៤. គ្រប់គ្រង	41	0	2	1	1	45
៥.រដ្ឋ.សាធារណៈ	37	1	3	1	0	42
៦. ព័ត៌មានវិទ្យា	32	2	4	0	1	39
៧. គណនេយ្យ	34	1	2	0	0	37
៨. គីមីវិទ្យា	29	0	2	0	0	31
៩. ភាសាខ្មែរ	26	1	2	0	0	29
១០. កសិកម្ម	25	0	2	1	0	28
១១. ធនាគារ	19	3	1	4	0	27
១២. អគ្គិសនី	21	5	0	1	0	27
១៣. ទេសចរណ៍	20	1	3	2	0	26

១៤. អង់គ្លេស	22	2	0	1	0	25
១៥. ទីផ្សារ	19	1	4	0	0	24
១៦. គណិតវិទ្យា	14	2	3	0	0	19
១៧. ជីវវិទ្យា	16	1	0	0	0	17
១៨. ទំ.ទំ.អន្តរជាតិ	9	1	1	1	0	12
១៩. ស្ថាបត្យកម្ម	8	0	2	0	0	10
២០. ពាណិជ្ជកម្ម	8	1	1	0	0	10
២១. ប្រវត្តិវិទ្យា	7	1	0	0	0	8
២២. ភូមិវិទ្យា	5	0	1	0	0	6
២៣. ន.សេដ្ឋកិច្ច	4	0	1	1	0	6
២៤. ហិរញ្ញវត្ថុ	5	0	0	0	0	5
២៥. នគរបាល	4	1	0	0	0	5
២៦. ច្នៃម៉ូត	4	1	0	0	0	5
២៧. រូបវិទ្យា	4	0	0	0	0	4
២៨. សុរិយោដី	4	0	0	0	0	4
២៩. បុរាណវិទ្យា	4	0	0	0	0	4
៣០. អភិវឌ្ឍជនបទ	2	0	0	0	1	3
៣១. បរិស្ថាន	2	0	1	0	0	3
៣២. អេឡិចត្រូនិក	3	0	0	0	0	3
៣៣. អ្នកនិពន្ធ	3	0	0	0	0	3
៣៤. ភាសាកូរ៉េ	2	0	0	0	0	2
៣៥. ផែនដីវិទ្យា	1	0	0	0	0	1
៣៦. ភាសាចិន	1	0	0	0	0	1
៣៧. ទាហាន	0	1	0	0	0	1
សរុប	**590**	**42**	**40**	**18**	**4**	**694**

តារាងទី៩៖ កត្តាកម្រិតវប្បធម៌របស់មាតាបិតា

ឯកទេសជ្រើសរើស	កម្រិតវប្បធម៌របស់មាតាបិតា													
	មិនចេះអាន និងសរសេរ		បឋម		អនុវិទ្យាល័យ		វិទ្យាល័យ		បរិញ្ញាបត្រ		បរិញ្ញាបត្រជាន់ខ្ពស់		បណ្ឌិត	
	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ
១.វេជ្ជសាស្ត្រ	1	9	26	13	19	32	23	26	6	1	2	0	3	0
២.វិស្វកម្មសំណង់	4	6	10	8	19	21	17	16	2	1	2	3	1	0
៣. ច្បាប់	2	4	12	9	13	20	10	11	7	2	2	0	0	0
៤. គ្រប់គ្រង	0	2	13	9	21	23	7	10	2	1	2	0	0	0
៥.រដ្ឋ.សាធារណៈ	1	3	12	7	16	20	10	11	3	1	0	0	0	0
៦. ព័ត៌មានវិទ្យា	0	1	6	9	11	16	14	10	5	3	2	0	0	0
៧. គណនេយ្យ	1	4	8	4	13	20	12	9	3	0	0	0	0	0
៨. គីមីវិទ្យា	2	6	8	4	10	13	9	7	1	1	1	0	0	0
៩. ភាសាខ្មែរ	3	6	8	3	9	11	6	9	3	0	0	0	0	0

១០. កសិកម្ម	1	4	7	3	10	13	8	7	2	1	0	0	0	0
១១. ធនាគារ	1	2	5	3	10	9	9	11	1	1	1	0	0	0
១២. អគ្គិសនី	3	1	7	5	6	12	9	8	2	1	0	0	0	0
១៣.ទេសចរណ៍	5	4	6	5	5	12	8	4	1	0	0	0	0	0
១៤. អង់គ្លេស	1	2	4	2	8	17	6	3	4	0	1	0	0	0
១៥. ទីផ្សារ	2	5	5	3	7	12	8	4	2	0	0	0	0	0
១៦. គណិតវិទ្យា	0	1	6	2	6	12	5	3	1	1	1	0	0	0
១៧. ជីវវិទ្យា	0	2	3	3	10	10	3	2	1	0	0	0	0	0
១៨. ទំ.ទំ.អន្តរជាតិ	0	1	2	2	2	3	4	4	3	1	1	1	0	0
១៩. ស្ថាបត្យកម្ម	1	1	3	2	1	4	1	2	3	1	1	0	0	0
២០. ពាណិជ្ជកម្ម	1	1	3	3	3	3	1	2	1	1	0	0	0	0
២១. ប្រវត្តិវិទ្យា	1	1	2	0	2	2	3	5	0	0	0	0	0	0
២២. ភូមិវិទ្យា	0	0	1	0	4	4	1	2	0	0	0	0	0	0
២៣. ន.សេដ្ឋកិច្ច	0	0	1	3	2	1	1	2	1	0	1	0	0	0
២៤. ហិរញ្ញវត្ថុ	0	3	1	0	1	2	1	0	2	0	0	0	0	0
២៥. នគរបាល	0	1	1	1	2	3	2	0	0	0	0	0	0	0
២៦. ថ្នៃម៉ូត	0	1	2	2	0	1	1	1	2	0	0	0	0	0
២៧. រូបវិទ្យា	0	1	0	1	2	1	1	1	1	0	0	0	0	0
២៨. សុរិយោដី	0	1	2	0	2	2	0	1	0	0	0	0	0	0
២៩. បុរាណវិទ្យា	0	0	1	2	1	2	1	0	1	0	0	0	0	0
៣០. អភិវឌ្ឍជនបទ	0	0	1	0	2	1	0	2	0	0	0	0	0	0
៣១. បរិស្ថាន	0	0	0	0	2	2	1	1	0	0	0	0	0	0
៣២. អេឡិចត្រូនិក	0	1	2	1	0	1	1	0	0	0	0	0	0	0
៣៣. អ្នកនិពន្ធ	0	0	1	0	1	1	1	2	0	0	0	0	0	0
៣៤. ភាសាកូរ៉េ	0	1	1	0	1	1	0	0	0	0	0	0	0	0
៣៥. ផែនដីវិទ្យា	0	0	0	0	1	1	0	0	0	0	0	0	0	0
៣៦. ភាសាចិន	0	0	0	0	1	1	0	0	0	0	0	0	0	0
៣៧. ទាហាន	0	0	0	0	0	1	1	0	0	0	0	0	0	0
សរុប	30	75	170	109	223	310	185	176	60	17	17	4	4	0

តារាងទី១០៖ កត្តាមុខរបរមាតាបិតា

ឯកទេសជ្រើសរើស	មុខរបររបស់មាតាបិតា																
	គ្រូបង្រៀន		បុគ្គលិកក្រុមហ៊ុន		វិស្វករ		កសិករ		មន្ត្រីរាជការ		ម៉ូតូឌុប	រកស៊ី		នគរបាល		បុគ្គលិក Casino	មេផ្ទះ
	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ	ឪពុក	ម្តាយ
១.រៀបចំសាស្ត្រ	7	6	0	0	0	0	35	43	12	1	2	19	29	5	0	0	1
២. វិស្វករសំណង់	3	1	4	0	1	1	35	36	4	1	0	6	12	1	0	0	2
៣. ច្បាប់	3	4	2	1	0	0	24	27	4	1	1	4	11	7	0	1	1
៤. គ្រប់គ្រង	2	0	3	0	2	0	26	31	4	2	0	4	9	4	0	0	3
៥.រដ្ឋ.សាធារណៈ	3	2	2	0	0	0	27	30	2	1	1	4	6	2	0	0	3

៦. ព័ត៌មានវិទ្យា	4	4	4	1	2	0	15	22	4	0	1	4	11	4	0	0	1
៧. គណនេយ្យ	2	2	0	0	1	0	21	25	0	0	0	7	9	5	1	0	0
៨. គីមីវិទ្យា	1	2	1	0	0	0	19	18	4	0	0	5	9	0	0	0	1
៩. ភាសាខ្មែរ	5	2	2	0	0	0	17	20	1	0	0	2	5	1	0	0	2
១០. កសិកម្ម	3	4	1	0	0	0	20	20	0	0	0	2	4	1	0	0	0
១១. ធនាគារ	1	0	0	1	1	0	16	17	1	0	1	4	6	3	0	0	1
១២. អគ្គិសនី	2	3	0	0	0	0	22	21	1	0	0	0	3	2	0	0	0
១៣. ទេសចរណ៍	1	3	1	0	0	0	14	15	1	0	0	6	6	2	0	0	0
១៤. អង់គ្លេស	4	1	2	1	0	0	11	17	1	0	0	3	4	4	0	0	2
១៥. ទីផ្សារ	3	0	0	0	0	0	15	15	1	0	1	4	8	0	0	0	1
១៦. គណិតវិទ្យា	1	0	1	0	0	0	11	16	1	0	0	2	2	1	0	0	1
១៧. ជីវវិទ្យា	0	0	0	0	0	0	14	16	1	0	0	1	1	1	0	0	0
១៨. ទំ.ទំ.អន្តរជាតិ	1	2	0	0	0	0	6	6	3	1	0	2	3	0	0	0	0
១៩. ស្ថាបត្យកម្ម	2	0	1	0	0	0	4	3	1	1	0	1	6	0	0	0	0
២០. ពាណិជ្ជកម្ម	0	2	0	0	0	0	3	2	0	1	1	3	4	3	1	0	0
២១. ប្រវត្តិវិទ្យា	0	1	1	0	0	0	7	7	0	0	0	0	0	0	0	0	0
២២. ភូមិវិទ្យា	0	0	0	0	0	0	6	5	0	0	0	0	1	0	0	0	0
២៣. ន.សេដ្ឋកិច្ច	0	0	0	0	0	0	3	4	2	1	0	0	1	1	0	0	0
២៤. ហិរញ្ញវត្ថុ	0	0	1	0	0	0	1	1	1	0	0	2	3	0	0	0	1
២៥. នគរបាល	0	0	0	0	0	0	2	4	0	0	0	2	1	1	0	0	0
២៦. ថ្នៃម៉ូត	1	3	3	0	0	0	1	1	0	1	0	0	0	0	0	0	0
២៧. រូបវិទ្យា	1	1	0	0	0	0	2	1	0	0	0	1	2	0	0	0	0
២៨. សុរិយោដី	0	0	0	0	0	0	1	0	2	0	0	1	1	0	0	0	3
២៩. បុរាណវិទ្យា	1	0	0	0	0	0	2	3	1	0	0	0	0	0	0	0	1
៣០. អភិវឌ្ឍជនបទ	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	0	0
៣១. បរិស្ថាន	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0
៣២. អេឡិចត្រូនិក	0	1	1	0	0	0	2	1	0	0	0	0	1	0	0	0	0
៣៣. អ្នកនិពន្ធ	1	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0
៣៤. ភាសាកូរ៉េ	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0
៣៥. ផែនដីវិទ្យា	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
៣៦. ភាសាចិន	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0
៣៧. ទាហាន	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
សរុប	**52**	**44**	**30**	**4**	**7**	**1**	**391**	**437**	**52**	**11**	**8**	**92**	**162**	**48**	**2**	**1**	**24**

តារាងទី១១៖ កត្តាសមាជិកគ្រួសារកំពុងសិក្សានៅសាកលវិទ្យាល័យ

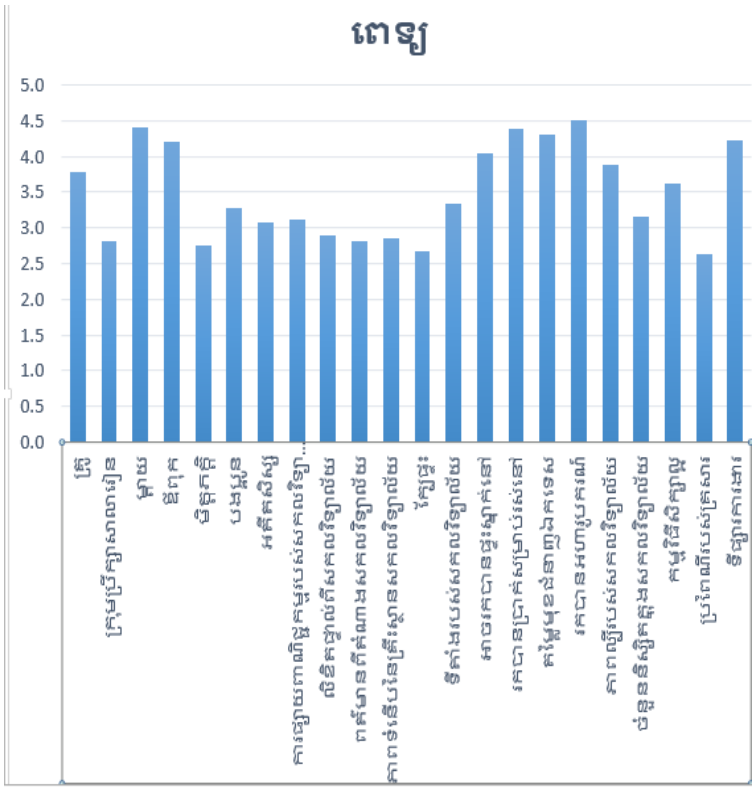
ឯកទេសជ្រើសរើស	មានសមាជិកគ្រួសារកំពុងសិក្សានៅសាកលវិទ្យាល័យ		សរុប
	គ្មាន	មាន	
១. វេជ្ជសាស្ត្រ	36	45	81
២. វិស្វកម្មសំណង់	37	18	55
៣. ច្បាប់	26	19	45
៤. គ្រប់គ្រង	27	18	45

៥. រដ្ឋបាលសាធារណៈ	25	17	42
៦. ព័ត៌មានវិទ្យា	20	19	39
៧. គណនេយ្យ	22	15	37
៨. គីមីវិទ្យា	16	15	31
៩. ភាសាខ្មែរ	17	12	29
១០. កសិកម្ម	18	10	28
១១. ធនាគារ	18	9	27
១២. អគ្គិសនី	13	14	27
១៣. ទេសចរណ៍	11	15	26
១៤. អង់គ្លេស	8	17	25
១៥. ទីផ្សារ	15	9	24
១៦. គណិតវិទ្យា	13	6	19
១៧. ជីវវិទ្យា	11	6	17
១៨. ទំ.ទំ.អន្តរជាតិ	3	9	12
១៩. ស្ថាបត្យកម្ម	3	7	10
២០. ពាណិជ្ជកម្ម	4	6	10
២១. ប្រវត្តិវិទ្យា	7	1	8
២២. ភូមិវិទ្យា	5	1	6
២៣. ន.សេដ្ឋកិច្ច	4	2	6
២៤. ហិរញ្ញវត្ថុ	3	2	5
២៥. នគរបាល	4	1	5
២៦. ច្នៃម៉ូត	1	4	5
២៧. រូបវិទ្យា	3	1	4
២៨. សុរិយោដី	2	2	4
២៩. បុរាណវិទ្យា	1	3	4
៣០. អភិវឌ្ឍជនបទ	2	1	3
៣១. បរិស្ថាន	2	1	3
៣២. អេឡិចត្រូនិក	2	1	3
៣៣. អ្នកនិពន្ធ	1	2	3
៣៤. ភាសាកូរ៉េ	1	1	2
៣៥. ផែនដីវិទ្យា	1	0	1
៣៦. ភាសាចិន	1	0	1
៣៧. ទាហាន	1	0	1
សរុប	**384**	**309**	**693**

៣.៧.៣ កត្តាដែលមានឥទ្ធិពលលើការសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សា

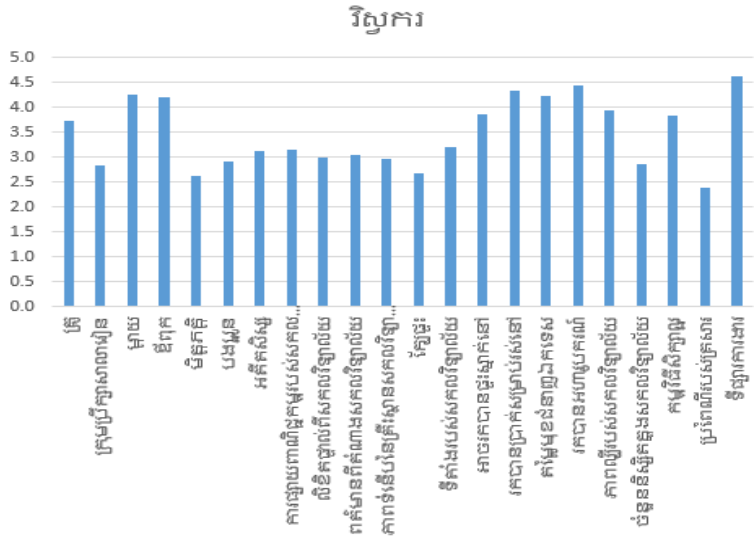
តាមការវិភាគលើតម្លៃមធ្យមនៃកត្តាលើកទឹកចិត្តសិស្ស ក្នុងការសម្រេចចិត្តជ្រើសរើសមុខជំនាញឯកទេសដែលមានចំនួន ២២កត្តាផ្សេងៗគ្នា (ការណែនាំពីលោកគ្រូ អ្នកគ្រូ ម្តាយ ឪពុក មិត្តភក្តិ បងប្អូន អតីតសិស្ស តំណាងសាកលវិទ្យាល័យ ក្រុមប្រឹក្សាសាលារៀន លិខិតផ្ទាល់របស់សាកលវិទ្យាល័យ និងកត្តាផ្សេងទៀតដូចជាការផ្សាយពាណិជ្ជកម្ម ភាពទំនើប កេរ្តិ៍ឈ្មោះ ចំនួននិស្សិត កម្មវិធីល្អៗរបស់សាកលវិទ្យាល័យ ទីតាំងរបស់សាកលវិទ្យាល័យ អាចរកបានផ្ទះសម្រាប់ស្នាក់នៅ អាចរកបានប្រាក់ទ្រទ្រង់ជីវភាព តម្លៃមុខជំនាញឯកទេស រកបានអាហារូបករណ៍ និងប្រពៃណីរបស់គ្រួសារ) យើងអាចសន្និដ្ឋានបានថា កត្តាដែលជះឥទ្ធិពលលើការសម្រេចចិត្តរបស់សិស្សក្នុងការជ្រើសរើសឯកទេសជំនាញសម្រាប់បន្តការសិក្សា ដែលពេញនិយមបំផុតមានដូចខាងក្រោម៖

១-ជំនាញវេជ្ជសាស្ត្រ ៖ កត្តាមួយចំនួនដែលជំរុញឱ្យសិស្សចង់បន្តការសិក្សាជំនាញវេជ្ជសាស្ត្រមានដូចខាងក្រោម៖



- ***កត្តាសំខាន់ខ្លាំង៖***
  ទី១.គឺការរកបានអាហារូបករណ៍ ទី២.គឺការលើកទឹកចិត្តពីម្តាយនិងការរកប្រាក់សម្រាប់ជីវភាពប្រចាំថ្ងៃ ទី៣.គឺតម្លៃលើឯកទេសជំនាញ ទី៤.គឺទីផ្សារការងារ ទី៥.គឺការលើកទឹកចិត្តពីឪពុកនិងការរកប្រាក់សម្រាប់ជីវភាពរស់នៅ ទី៦.គឺលទ្ធភាពរកបានកន្លែងស្នាក់នៅ។
- ***កត្តាសំខាន់ល្មមមាន៖***ទី១គឺកេរ្តិ៍ឈ្មោះសាកលវិទ្យាល័យ ទី២គឺការណែនាំពីគ្រូ ទី៣គឺកម្មវិធីសិក្សាល្អៗ ទី៤គឺទីតាំងរបស់សាកលវិទ្យាល័យ ទី៥គឺការលើកទឹកចិត្តពីបងប្អូន ទី៦គឺចំនួននិស្សិតកំពុងសិក្សាក្នុងសាកលវិទ្យាល័យ ទី៧ គឺការផ្សាយពាណិជ្ជកម្មរបស់សាកលវិទ្យាល័យនិង ទី៨គឺការណែនាំពីអតីតសិស្សនៅវិទ្យាល័យខ្លួន។
- កត្តាសំខាន់តិចតួច៖ កត្តាដែលនៅសល់ទាំងអស់ គឺជាកត្តាសំខាន់តិចតួចសម្រាប់សិស្ស ។

២- ជំនាញវិស្វកម្មសំណង់ ៖ សិស្សដែលជ្រើសរើសជំនាញនេះគិតថាមានកត្តាមួយចំនួនដែលជំរុញឱ្យពួកគេចង់បន្តការសិក្សាជំនាញ ដូចខាងក្រោម៖

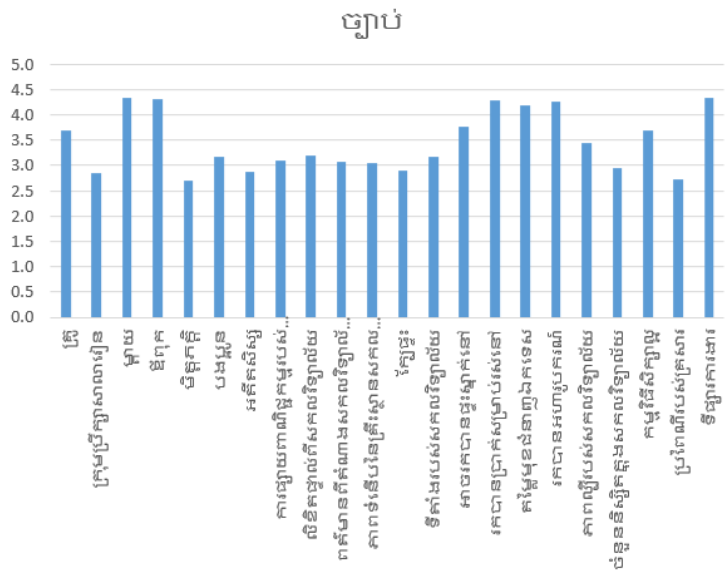


- ***កត្តាសំខាន់ខ្លាំងមាន៖***ទី១ គឺទីផ្សារ ការងារ ទី២ គឺអាចរកបានអាហារូបករណ៍ ទី៣ គឺរកបានប្រាក់សម្រាប់ការរស់នៅ ទី៤ ការលើកទឹកចិត្តពីម្តាយ ទី៥គឺតម្លៃមុខជំនាញឯកទេសនិង ទី៦ការលើកទឹកចិត្តពីឪពុក។
- ***កត្តាសំខាន់ល្មមមាន*** ៖ ទី១ គឺទីតាំង និងកេរ្តិ៍ឈ្មោះរបស់សកលវិទ្យាល័យ ទី២ គឺអាចរកបានកន្លែងស្នាក់នៅ ទី៣ គឺកម្មវិធីសិក្សាល្អ

ទី៤ គឺការណែនាំពីគ្រូបង្រៀន ទី៥ គឺការផ្សាយពាណិជ្ជកម្មរបស់សាកលវិទ្យាល័យ ទី៦ គឺការណែនាំពីអតីតសិស្ស ទី៧ គឺព័ត៌មានពីអ្នកតំណាងសាកលវិទ្យាល័យ និងទី៨លិខិតផ្ទាល់ពីសាកលវិទ្យាល័យ។

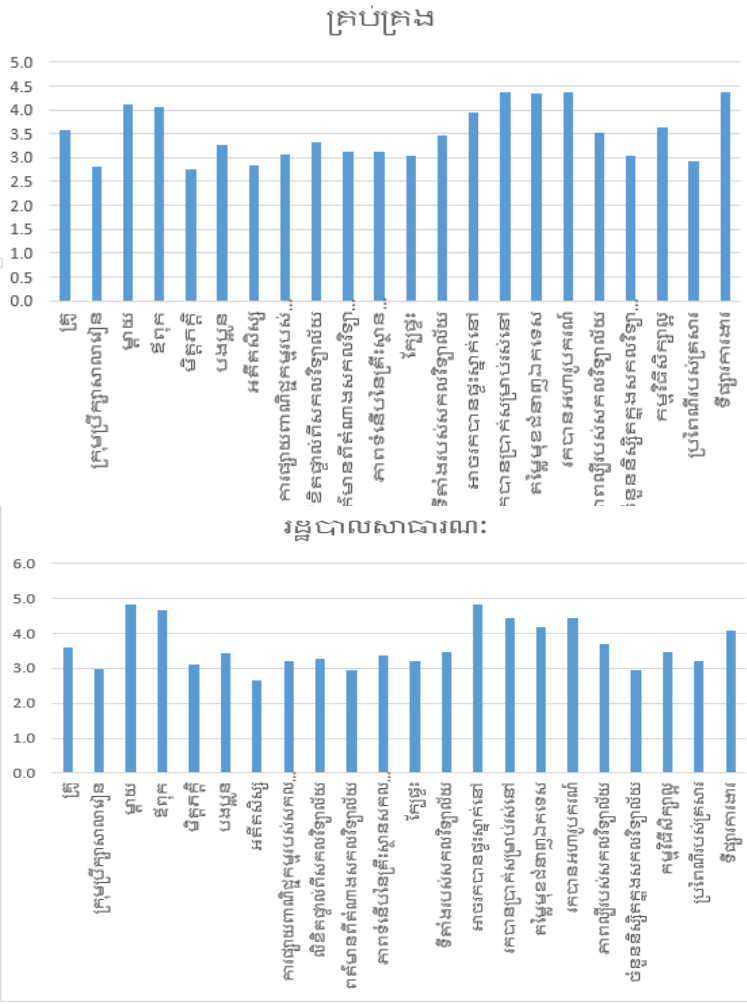
- ចំពោះកត្តាផ្សេងពីនេះត្រូវបានសិស្សចាត់ទុកថាមានភាពសំខាន់តិចតួចប៉ុណ្ណោះ ប៉ុន្តែពុំមានកត្តាណាមួយដែលមិន សំខាន់ទេ។

៣-ជំនាញថ្នាប់ ៖ សិស្សដែលជ្រើសរើសជំនាញនេះគិតថា មានកត្តាមួយចំនួនដែលជំរុញឱ្យពួកគេចង់បន្តការសិក្សាជំនាញនេះដូចខាងក្រោម៖



- ***កត្តាសំខាន់ខ្លាំងមាន ៖*** ទី១ គឺការណែនាំពីឪពុក-ម្តាយ និងទីផ្សារការងារ ទី២គឺអាចរកបានអាហារូបករណ៍ និងប្រាក់សម្រាប់ទ្រទ្រង់ជីវភាពប្រចាំថ្ងៃ និង ទី៣គឺតម្លៃមុខជំនាញឯកទេស
- ***កត្តាសំខាន់ល្មមមាន ៖*** ទី១គឺអាចរកបានផ្ទះស្នាក់នៅ ទី២គឺការណែនាំពីគ្រូបង្រៀន និងកម្មវិធីសិក្សាល្អ ទី៣គឺកេរ្តិ៍ឈ្មោះរបស់សកលវិទ្យាល័យទី ៤គឺលិខិតផ្ទាល់ពីសាកលវិទ្យាល័យ ទី៥គឺទីតាំងរបស់សាកលវិទ្យាល័យ និងការណែនាំពីបងប្អូន ទី៦គឺការផ្សាពាណិជ្ជកម្មរបស់សាកលវិទ្យាល័យ ទី៧គឺពត៌មានពីតំណាងសាកលវិទ្យាល័យ និងទី៨គឺភាព ទំនើបរបស់សាកលវិទ្យាល័យ។
- ចំពោះកត្តាផ្សេងពីនេះត្រូវបានសិស្សចាត់ទុកថាមានភាពសំខាន់តិចតួចប៉ុណ្ណោះ ប៉ុន្តែពុំមានកត្តាណាមួយដែលមិនសំខាន់ទេ។

៤-ជំនាញគ្រប់គ្រង ៖ សិស្សដែលជ្រើសរើសជំនាញនេះគិតថា មានកត្តាមួយចំនួនដែលជំរុញឲ្យពួកគេចង់បន្តការសិក្សាជំនាញនេះដូចខាងក្រោម៖



- ***កត្តាសំខាន់ខ្លាំងមាន៖*** ទី១គឺទីផ្សារការងារ រកបានអាហារូបករណ៍ រកបានប្រាក់សម្រាប់ទ្រទ្រង់ជីវភាព និងតម្លៃជំនាញឯកទេស ទី២ ការណែនាំពីឪពុក-ម្តាយ។
- ចំពោះកត្តាផ្សេងពីនេះត្រូវបានសិស្សចាត់ទុកថាមានភាពសំខាន់ល្មមទាំងអស់លើកលែងតែកត្តា ការណែនាំពីក្រុមប្រឹក្សាសាលារៀន ការណែនាំពីមិត្តភក្តិ ពីអតីតសិស្ស និងប្រពៃណីរបស់គ្រួសារដែលមានភាពសំខាន់តិចតួចក្នុងការជំរុញឱ្យពួកគេចង់បន្តការសិក្សាជំនាញគ្រប់គ្រង។

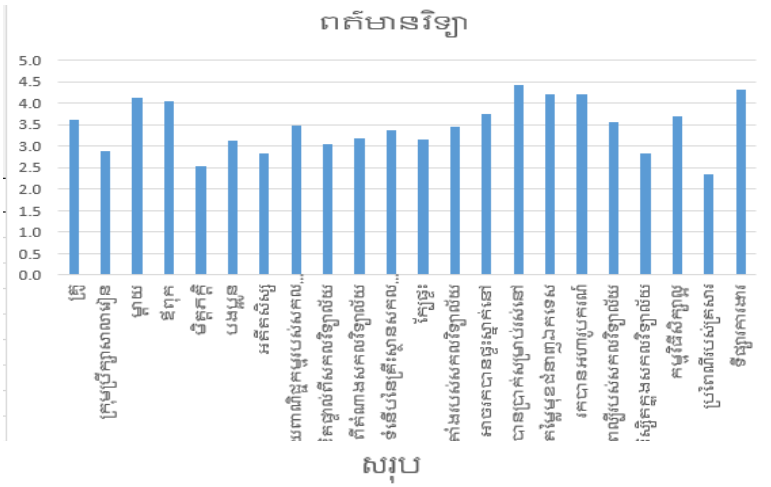
៥- ជំនាញរដ្ឋបាលសាធារណៈ៖សិស្សដែលជ្រើសរើសជំនាញនេះគិតថាមានកត្តាមួយចំនួនដែលជំរុញឱ្យពួកគេចង់បន្តការសិក្សាជំនាញនេះ ដូចខាងក្រោម៖

- ***កត្តាសំខាន់ខ្លាំងមាន ៖*** ទី១គឺការណែនាំរបស់

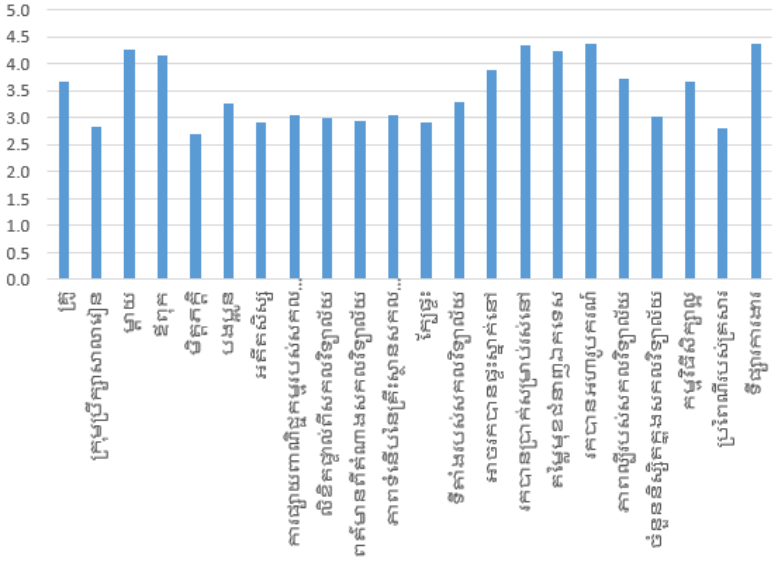
ម្តាយ និងអាចរកបានផ្ទះស្នាក់នៅ ទី២ គឺការណែនាំពីឪពុកទី៣ គឺអាចរកបានអាហារូបករណ៍ ទី៤គឺលទ្ធភាព អាចរកប្រាក់សម្រាប់ទ្រទ្រង់ជីវភាពបាន ទី៥ គឺតម្លៃមុខជំនាញឯកទេស និងទី៦ គឺទីផ្សារការងារ។

- ដោយឡែកកត្តាផ្សេងៗទៀតសុទ្ធតែជាកត្តាសំខាន់ល្មម លើកលែងតែកត្តា៤ប៉ុណ្ណោះដែលមានភាពសំខាន់តិតតួចដូចជា កត្តាទី១គឺការណែនាំពីក្រុមប្រឹក្សាសាលារៀន ទី២គឺព័ត៌មានពីតំណាងសាកលវិទ្យាល័យ និងចំនួននិស្សិតដែលមាននៅក្នុងសាកលវិទ្យាល័យ និងទី៣គឺការណែនាំពីក្រុមនិស្សិត។

៦-ជំនាញព័ត៌មានវិទ្យា ៖ សិស្សដែលជ្រើសរើសជំនាញនេះគិតថា មានកត្តាមួយចំនួនដែលជំរុញឱ្យពួកគេចង់បន្តការសិក្សាជំនាញនេះ ដូចខាងក្រោម៖



- ***កត្តាសំខាន់ខ្លាំងមាន ៖*** ទី១ គឺការរកបានប្រាក់សម្រាប់ទ្រទ្រង់ជីវភាព ទី២ គឺទីផ្សារការងារ ទី៣ គឺតម្លៃជំនាញឯកទេស និងរកបានអាហារូបករណ៍ ទី៤ គឺការណែនាំពីម្តាយ និងទី៥គឺការណែនាំពីឪពុក។
- ដោយឡែកកត្តាផ្សេងៗទៀតសុទ្ធតែជាកត្តាសំខាន់ល្មមលើកលែងតែកត្តា៤ប៉ុណ្ណោះដែលមានភាពសំខាន់តិតតួចដូចជាការណែនាំពីអតីតនិស្សិត ការណែនាំពីមិត្តភក្តិ ចំនួននិស្សិតក្នុងសាកលវិទ្យាល័យ និងប្រពៃណី គ្រួសារ។ ម្យ៉ាងវិញទៀតបើយើងពិនិត្យជាមធ្យមភាគលើកត្តានីមួយៗ វិញយើងសង្កេតឃើញថាទូទៅសិស្សថ្នាក់ទី១២ដែលសម្រេចចិត្តជ្រើសរើសមុខជំនាញឯកទេសសម្រាប់បន្តការសិក្សានៅសាកលវិទ្យាល័យនានានៅទូទាំងក្នុងព្រះរាជាណាចក្រកម្ពុជាមានកត្តាជំរុញ និងលើកទឹកចិត្តដល់ពួកគេឱ្យជ្រើសរើសមុខជំនាញឯកទេសសម្រាប់បន្តការសិក្សានៅតាមគ្រឹះស្ថានឧត្តមសិក្សានានា ដូចមានកត្តាខាងក្រោមនេះ ៖



- ***កត្តាសំខាន់ខ្លាំងមានដូចជា៖*** ទីផ្សារការងារសម្រាប់មុខជំនាញនីមួយៗ ការរកបានអាហារូបករណ៍ ការរកបានប្រាក់ចំណាយសម្រាប់ទ្រទ្រង់ជីវភាពប្រចាំថ្ងៃ និងការណែនាំពីឪពុក-ម្តាយ។
- ***កត្តាសំខាន់ល្មមមានដូចជា៖*** អាចរកន្លែងសម្រាប់ស្នាក់នៅ ការណែនាំរបស់គ្រូ កម្មវិធីសិក្សាល្អៗ ភាពល្បីរបស់សាកលវិទ្យាល័យ ការណែនាំរបស់មិត្តភក្តិ និងប្រពៃណីរបស់គ្រួសារ ។ល។
- យើងពុំអាចរកកត្តាណាមួយដែលមានសារសំខាន់តិចតួច ឬមិនសំខាន់នោះទេសម្រាប់ជំរុញឲ្យសិស្សានុសិស្សជ្រើសរើសមុខជំនាញឯកទេសសម្រាប់បន្តការសិក្សានៅតាមគ្រឹះស្ថានឧត្តមសិក្សានោះទេ ។

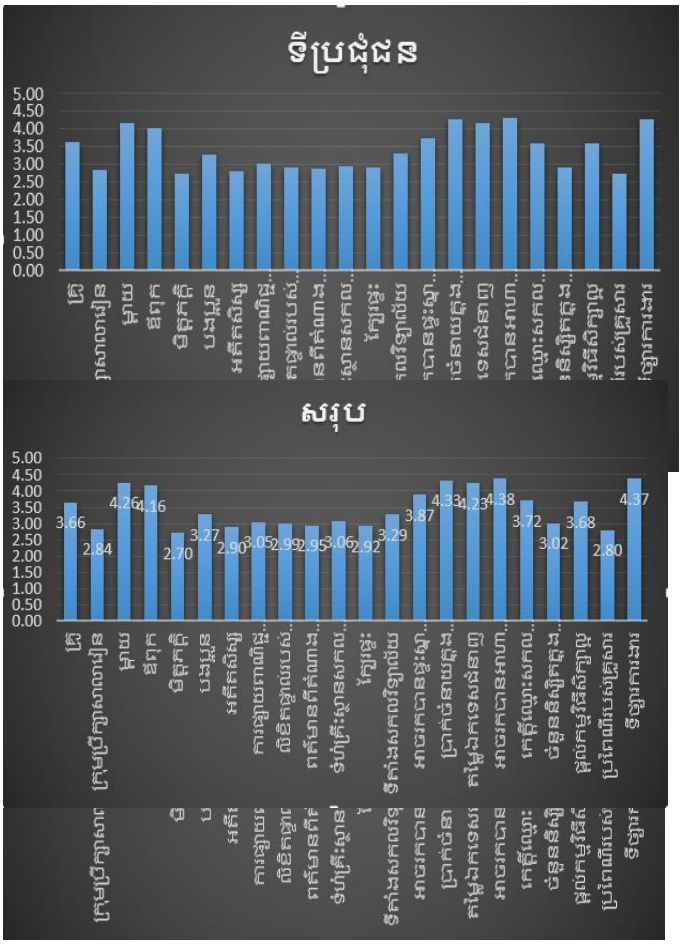
ទាំងនេះសបញ្ជាក់ឱ្យឃើញថា កត្តាទាំង២២ចំណុចដែលយើងទាំងអស់គ្នាគិតថា មានឥទ្ធិពលលើការសម្រេចចិត្តក្នុងការជ្រើសរើសមុខជំនាញឯកទេសសម្រាប់បន្តការសិក្សារបស់សិស្សានុសិស្ស ពិតជាមានសារៈសំខាន់ទាំងអស់សម្រាប់ការបន្តសិក្សារបស់សិស្សនៅតាមគ្រឹះស្ថានឧត្តមសិក្សា។

តម្លៃមធ្យមនៃការលើកទឹកចិត្តដោយកត្តា ៖

ឯកទេសជំនាញ	គ្រូ	ក្រុមប្រឹក្សាសាលារៀន	ម្តាយ	ឪពុក	មិត្តភក្តិ	បងប្អូន	អតីតនិស្សិត	ការផ្សាយពាណិជ្ជកម្មរបស់សាកលវិទ្យាល័យ	លិខិតផ្ទាល់ពីសាកលវិទ្យាល័យ	ពត៌មានពីតំណាងសាកលវិទ្យាល័យ	ភាពទំនើបនៃគ្រឹះស្ថានសាកលវិទ្យាល័យ	ក្បែរផ្ទះ	ទីតាំងរបស់សាកលវិទ្យាល័យ	អាចមកពីផ្ទះស្នាក់នៅ	អាចបានប្រាក់សម្រាប់រស់នៅ	តម្លៃមុខជំនាញឯកទេស	អាចបានអាហារូបករណ៍	ភាពល្បីរបស់សាកលវិទ្យាល័យ	ចំនួននិស្សិតក្នុងសាកលវិទ្យាល័យ	កម្មវិធីសិក្សាល្អ	ប្រាក់ណើរបស់គ្រួសារ	ទីផ្សារការងារ
ពេទ្យ	3.8	2.8	4.4	4.2	2.8	3.3	3.1	3.1	2.9	2.8	2.9	2.7	3.3	4.0	4.4	4.3	4.5	3.9	3.1	3.6	2.6	4.2
វិ.សំណង់	3.7	2.8	4.3	4.2	2.6	2.9	3.1	3.2	3.0	3.0	3.0	2.7	3.2	3.9	4.3	4.2	4.5	3.9	2.9	3.8	2.4	4.6
ច្បាប់	3.7	2.8	4.3	4.3	2.7	3.2	2.9	3.1	3.2	3.1	3.0	2.9	3.2	3.8	4.3	4.2	4.3	3.5	3.0	3.7	2.7	4.3
គ្រប់គ្រង	3.6	2.8	4.1	4.1	2.8	3.3	2.8	3.1	3.3	3.1	3.1	3.0	3.5	3.9	4.4	4.3	4.4	3.5	3.0	3.6	2.9	4.4
រដ្ឋ.ធារណៈ	3.6	3.0	4.8	4.7	3.1	3.4	2.6	3.2	3.3	3.0	3.4	3.2	3.5	4.8	4.4	4.2	4.4	3.7	3.0	3.5	3.2	4.1
ព័ត៌មានវិទ្យា	3.6	2.9	4.1	4.1	2.5	3.1	2.8	3.5	3.1	3.2	3.4	3.2	3.5	3.7	4.4	4.2	4.2	3.6	2.8	3.7	2.3	4.3
គណនេយ្យ	3.4	2.9	4.2	4.2	2.7	3.6	2.6	2.7	2.9	2.9	2.9	2.8	3.0	3.8	4.3	4.2	4.3	3.9	3.1	3.7	3.0	4.2
គីមីវិទ្យា	3.9	2.9	4.3	4.2	2.5	2.9	2.7	2.8	2.5	2.7	2.8	2.9	3.3	3.5	4.2	4.0	4.4	3.6	2.6	3.5	2.5	4.4
ខ្មែរ	3.9	3.0	4.3	4.2	2.6	3.3	2.6	2.9	2.8	2.8	3.3	3.3	3.2	3.7	4.3	4.3	4.5	3.6	3.0	3.4	3.4	4.3
កសិកម្ម	3.4	2.8	4.0	4.0	2.7	3.1	2.8	2.9	2.8	2.9	2.9	2.6	3.3	3.2	4.0	4.1	4.2	3.7	3.1	3.8	3.3	4.4
ធនាគារ	3.4	2.6	4.1	4.0	2.4	3.1	2.9	2.8	2.8	3.0	3.0	2.6	3.0	3.9	4.1	4.4	4.4	3.5	3.1	3.9	3.0	4.1
អគ្គិសនី	3.6	2.7	4.1	4.1	2.7	3.4	3.2	3.3	3.0	3.0	3.1	3.0	2.9	3.8	4.3	4.2	4.5	3.7	3.3	3.8	2.9	4.6
ទេសចរណ៍	3.6	3.0	4.3	4.3	3.0	3.8	2.8	3.0	2.8	3.0	2.9	3.0	3.5	4.0	4.5	4.5	4.5	3.8	2.9	3.6	2.3	4.5
អង់គ្លេស	3.8	2.8	4.3	4.0	3.1	3.6	3.2	3.2	3.0	3.2	3.2	3.1	3.4	4.0	4.0	4.0	3.9	3.6	2.9	3.7	3.1	4.6
ទីផ្សារ	3.9	3.2	4.6	4.2	2.7	3.5	2.9	3.0	2.8	3.2	3.3	3.7	3.6	3.9	4.5	4.5	4.7	3.6	3.3	3.7	3.5	4.5
គណិតវិទ្យា	3.9	2.8	4.2	3.9	2.5	3.0	2.7	3.0	3.2	3.1	3.1	2.5	3.2	3.9	4.4	4.2	4.3	3.7	3.1	4.0	2.6	4.5
ជីវវិទ្យា	3.7	3.1	4.5	4.5	2.6	3.5	2.9	3.2	3.4	3.1	3.4	3.1	3.6	4.5	4.6	4.4	4.5	3.9	3.3	3.6	3.4	4.3
ទំ.អន្តរជាតិ	3.7	2.0	4.1	3.8	1.9	3.4	3.4	3.4	3.0	3.0	2.8	2.5	3.5	3.4	4.3	4.3	4.6	3.4	3.1	3.8	2.0	4.7
ស្ថាបត្យកម្ម	3.6	2.5	3.6	3.2	2.9	3.1	3.5	3.3	3.5	3.0	3.1	2.6	3.8	3.7	4.4	4.2	4.6	4.0	3.4	4.1	2.3	4.7
ពាណិជ្ជកម្ម	3.4	3.1	3.6	3.6	2.5	3.2	2.9	2.6	3.0	2.2	2.8	3.0	3.3	3.7	4.4	4.4	4.4	4.2	3.0	3.7	2.5	4.5
ប្រវត្តិវិទ្យា	3.9	2.6	4.5	4.4	3.1	3.4	2.6	3.0	2.9	3.0	3.6	3.9	3.8	3.8	4.3	4.1	4.3	3.5	3.6	3.6	3.6	4.4
ភូមិវិទ្យា	3.7	3.0	3.7	3.7	2.2	3.5	2.5	2.8	3.0	2.8	2.8	3.8	2.8	4.2	4.3	3.8	4.0	3.5	2.5	3.2	2.7	3.2
សេដ្ឋកិច្ចនយោបាយ	3.3	2.8	4.0	3.7	2.8	2.8	3.3	2.5	2.3	2.0	2.7	2.2	2.5	2.8	4.2	3.7	3.3	4.0	2.7	3.5	1.7	4.7
ហិរញ្ញវត្ថុ	3.8	3.2	4.4	4.4	2.8	3.4	3.0	3.2	3.4	3.4	3.0	3.2	3.6	4.0	4.4	4.6	4.4	3.6	3.2	4.2	3.2	4.8
នគរបាល	3.8	3.2	4.8	4.8	3.4	3.6	3.6	3.2	3.4	2.6	2.4	3.0	2.8	3.0	4.0	4.0	3.0	3.8	3.4	3.4	3.2	4.6
ផ្នែម៉ូត	3.4	2.4	4.0	4.2	3.2	3.2	2.8	2.2	2.6	2.4	3.4	3.0	3.8	3.8	4.6	4.6	4.8	4.0	2.2	3.4	2.4	4.6
រូបវិទ្យា	3.8	2.3	4.8	5.0	2.8	3.0	2.5	2.8	3.3	3.0	3.3	3.8	3.3	4.0	4.5	4.0	4.5	4.3	3.3	3.8	4.8	4.3
សុរិយោដី	3.5	2.3	4.3	4.0	2.0	3.3	3.3	3.0	3.0	2.8	3.3	3.0	3.3	4.3	4.5	4.8	5.0	4.5	3.3	4.0	3.3	4.8
បូរាណវិទ្យា	2.5	2.5	3.5	3.5	2.3	3.0	3.0	2.5	3.3	2.5	3.3	1.8	2.5	2.5	4.0	3.8	4.8	3.7	2.5	4.0	1.0	4.3

អភិវឌ្ឍជនបទ	4.3	3.3	4.7	4.7	2.7	4.0	2.7	3.7	2.3	3.0	2.3	3.3	2.3	2.3	4.7	3.7	5.0	3.3	3.7	3.3	2.3	4.7
បរិស្ថាន	3.3	3.7	4.7	4.7	3.0	3.0	4.0	3.3	3.5	2.7	3.3	2.7	2.7	4.3	4.7	4.3	5.0	3.7	1.7	3.7	1.7	4.3
អេឡិចត្រូនិច	4.0	2.3	3.7	4.0	3.0	4.3	2.3	3.0	2.7	3.3	2.0	1.7	2.7	4.3	3.7	3.7	3.7	3.7	3.0	3.3	3.3	4.0
អ្នកនិពន្ធ	2.0	1.7	2.7	2.7	1.0	2.3	2.7	2.7	2.0	2.3	4.0	1.7	2.3	4.7	4.3	3.7	4.3	4.3	2.3	4.3	1.3	5.0
ភាសាកូរ៉េ	4.0	2.5	3.0	4.0	2.5	2.5	3.0	3.5	3.5	3.5	3.5	3.0	4.0	4.0	5.0	5.0	5.0	4.5	3.0	4.0	2.0	5.0
ផែនដីវិទ្យា	5.0	3.0	3.0	3.0	2.0	2.0	4.0	1.0	2.0	3.0	2.0	1.0	4.0	5.0	5.0	5.0	5.0	4.0	4.0	3.0	5.0	5.0
ភាសាចិន	2.0	1.0	4.0	4.0	2.0	4.0	2.0	2.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	3.0	2.0	1.0	2.0	2.0	2.0
ទាហាន	3.0	4.0	4.0	5.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	5.0	4.0	4.0	4.0	5.0	4.0	5.0
សរុប	**3.7**	**2.8**	**4.3**	**4.2**	**2.7**	**3.3**	**2.9**	**3.1**	**3.0**	**2.9**	**3.1**	**2.9**	**3.3**	**3.9**	**4.3**	**4.2**	**4.4**	**3.7**	**3.0**	**3.7**	**2.8**	**4.4**

៣.៧.៤ កត្តាដែលជំរុញឱ្យសិស្សនៅតាមទីប្រជុំជន និងជនបទសម្រេចចិត្តជ្រើសរើសជំនាញឯកទេស



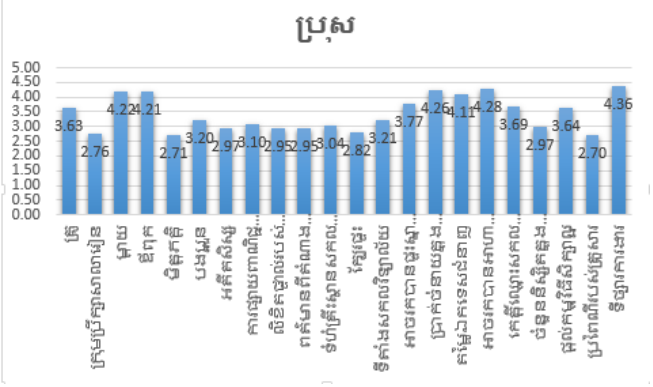
តាមតារាងខាងក្រោមនេះ និងក្រាបនៅខាងស្តាំដៃនេះ យើងអាចទាញការសន្និដ្ឋានថាសិស្សដែលកំពុងតែសិក្សានៅតាមទីប្រជុំជន ពួកគេបានវាយតម្លៃជាមធ្យមថា កត្តាការណែនាំរបស់ឪពុក និងម្តាយ កត្តាលទ្ធភាពអាចរកបានប្រាក់សម្រាប់ទ្រទ្រង់ជីវភាព កត្តាអាចរកបានអាហារូបករណ៍ កត្តាតម្លៃជំនាញឯកទេស និងកត្តាទីផ្សារការងារ គឺជាកត្តាសំខាន់ខ្លាំងដែលជំរុញឱ្យពួកគេជ្រើសរើសជំនាញឯកទេសសម្រាប់បន្តការសិក្សានៅតាមសាកលវិទ្យាល័យ។ ដោយឡែកទិន្នន័យពុំបានបង្ហាញថាមានកត្តាណាមួយដែលមិនសំខាន់ទាល់តែសោះនោះទេ កត្តាដែលនៅសល់ភាគច្រើនមានភាពសំខាន់ល្មមនិងសំខាន់តិចតួច។ ដូចគ្នានេះដែរចំពោះសិស្សដែលកំពុងតែសិក្សានៅតាមទីជនបទពួកគេបានវាយតម្លៃលើកត្តាជាច្រើនដែលមានភាពសំខាន់ខ្លាំងជំរុញឱ្យពួកគេជ្រើសរើសជំនាញ ឯកទេសសម្រាប់បន្តការសិក្សានៅសាកលវិទ្យាល័យដូចជា៖ការណែនាំរបស់ឪពុក និង ម្តាយលទ្ធភាពអាចរកបានប្រាក់សម្រាប់ទ្រទ្រង់ជីវភាព ការអាចរកបានអាហារូបករណ៍ តម្លៃជំនាញឯកទេស ទីផ្សារការងារ កម្មវិធីសិក្សាល្អ និងការណែនាំពីគ្រូបង្រៀន។ ចំពោះកត្តាទាំងឡាយផ្សេងទៀត ពួកគេចាត់ទុកថាមានភាពសំខាន់ល្មមដែលជំរុញឱ្យពួកជ្រើសរើសជំនាញឯកទេសសម្រាប់បន្តការសិក្សានៅសាកលវិទ្យាល័យ។នៅពេលយើងធ្វើការវិភាគលើសិស្សទាំងពីរតំបន់ជារួមវិញពិនិត្យ ឃើញថា មានកត្តាសំខាន់ខ្លាំងជាច្រើនដែលបានជំរុញឱ្យសិស្សជ្រើសរើសមុខជំនាញសម្រាប់បន្តការសិក្សានៅសាកលវិទ្យាល័យ ដូចជាការណែនាំពីឪពុកនិងម្តាយទីផ្សារការងារ អាហារូបករណ៍ ប្រាក់ចំណាយសម្រាប់ការរស់នៅពេលកំពុងសិក្សា និងតម្លៃមុខជំនាញឯកទេស។

កត្តាជំរុញ	តំបន់របស់សាលារៀន								
	ទីប្រជុំជន			ជនបទ			សរុប		
	មធ្យម	ចំនួន	គំ.ស្តង់ដា	មធ្យម	ចំនួន	គំ.ស្តង់ដា	មធ្យម	ចំនួន	គំ.ស្តង់ដា
គ្រូ	3.62	371	0.986	3.70	323	0.965	3.66	694	0.976
ក្រុមប្រឹក្សាសាលារៀន	2.84	371	1.097	2.83	321	1.002	2.84	692	1.053
ម្តាយ	4.18	372	1.029	4.36	323	0.979	4.26	695	1.009
ឪពុក	4.05	372	1.133	4.30	322	1.037	4.16	694	1.096
មិត្តភក្តិ	2.74	371	0.973	2.67	323	0.946	2.70	694	0.960
បងប្អូន	3.27	372	1.144	3.28	323	1.083	3.27	695	1.115
អតីតសិស្ស	2.80	372	1.010	3.02	322	1.012	2.90	694	1.016
ផ្សាយពា.របស់ ស.វិទ្យាល័យ	3.02	372	0.971	3.09	323	1.046	3.05	695	1.006
លិខិតរបស់ ស.វិទ្យាល័យ	2.92	371	1.033	3.07	322	1.050	2.99	693	1.043
ព័ត៌មានពីតំណាងស.វិទ្យាល័យ	2.87	372	0.920	3.04	323	0.960	2.95	695	0.942
ទំហំគ្រឹះស្ថានស.វិទ្យាល័យ	2.95	372	1.129	3.19	321	1.064	3.06	693	1.105
ក្បែរផ្ទះ	2.92	372	1.330	2.91	323	1.345	2.92	695	1.336
ទីតាំងសាកលវិទ្យាល័យ	3.31	372	1.094	3.27	323	1.088	3.29	695	1.091
អាចរកបានផ្ទះស្នាក់នៅ	3.74	372	1.886	4.03	323	1.877	3.87	695	1.887
ប្រាក់ចំណាយក្នុងការរស់នៅ	4.27	372	0.896	4.40	323	0.759	4.33	695	0.837
តម្លៃឯកទេសជំនាញ	4.16	372	0.909	4.32	322	0.800	4.23	694	0.863
អាចរកបានអាហារូបករណ៍	4.32	370	0.929	4.45	323	0.796	4.38	693	0.871
កេរ្តិ៍ឈ្មោះសាកលវិទ្យាល័យ	3.61	371	1.037	3.85	323	0.922	3.72	694	0.992
ចំ.និស្សិតក្នុងស.វិទ្យាល័យ	2.91	372	1.086	3.13	320	1.034	3.02	692	1.067
ផ្តល់កម្មវិធីសិក្សាល្អ	3.60	372	0.973	3.78	323	0.884	3.68	695	0.937
ប្រពៃណីរបស់គ្រួសារ	2.73	372	1.349	2.89	323	1.341	2.80	695	1.346
ទីផ្សារការងារ	4.29	372	0.975	4.47	323	0.740	4.37	695	0.878

៣.៧.៥ កត្តាដែលជំរុញឱ្យសិស្សស្រី និងសិស្សប្រុសសម្រេចចិត្តជ្រើសរើសជំនាញឯកទេស

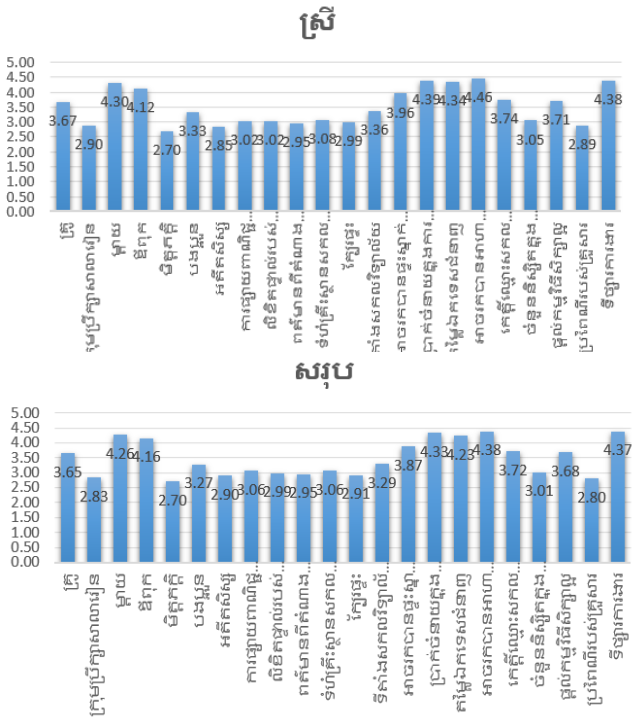
ម្យ៉ាងវិញទៀតបើយោងតាមការវិភាគលើភេទរបស់សិស្ស យើងពិនិត្យឃើញថា ៖

- សិស្សប្រុសផ្តល់សារៈសំខាន់ខ្លាំងលើកត្តាមួយចំនួនដូចជា៖ ទីផ្សារការងារ អាហារូបករណ៍ ប្រាក់ចំណាយក្នុងជីវភាពរស់នៅ ការលើកទឹកចិត្តពីឪពុកនិងម្តាយ។ ដោយឡែកកត្តាផ្សេងៗដែលនៅសល់សិស្សបានទុកថាមានសារៈសំខាន់ល្មមសម្រាប់ជំរុញឱ្យពួកគេជ្រើសជំនាញឯកទេសសម្រាប់ការសិក្សានៅសាកលវិទ្យាល័យនិង



មានកត្តាចំនួនពីរប៉ុណ្ណោះដែលមានសារៈសំខាន់តិចតួចក្នុងការរើសមុខជំនាញឯកទេសនៅសកលវិទ្យាល័យ ដូចជា៖ ការណែនាំរបស់ក្រុមប្រឹក្សា សាលារៀន ការណែនាំពីមិត្តភក្តិ និងពីប្រពៃណីរបស់គ្រួសារ។

- ចំពោះសិស្សស្រីវិញពួកគេគិតថា ការណែនាំរបស់ឪពុកនិងម្តាយ ភាពអាចរកបានអាហារូបករណ៍ មុខជំនាញមានទីផ្សារការងារច្រើន លទ្ធភាពអាចរកបានប្រាក់សម្រាប់ផ្គត់ផ្គង់ជីវភាពប្រចាំថ្ងៃនិងតម្លៃជំនាញឯកទេសគឺជាកត្តាសំខាន់ខ្លាំងដើម្បីជំរុញឱ្យពួកគេជ្រើសរើសមុខជំនាញដែលពួកគេស្រឡាញ់ និងចង់បន្តការសិក្សាបំផុតនៅសាកលវិទ្យាល័យ។ យើងមិនឃើញមានកត្តាណាមួយដែលសំខាន់តិចតួចទេដោយសារតែកត្តាទាំងអស់ សុទ្ធតែមានតម្លៃធំជាងមធ្យមភាគ(២.៥០)។
- ជាសរុបយើងអាចសន្និដ្ឋានបានថា កត្តាសំខាន់ខ្លាំងសម្រាប់ជំរុញឱ្យសិស្សជ្រើសរើសមុខជំនាញនៅ សាកលវិទ្យាល័យមានដូចជា៖ ទី១៖លទ្ធភាពរកបានអាហារូបករណ៍ ទី២៖មុខជំនាញត្រូវទីផ្សារការងារ ទី៣៖មានប្រាក់ សម្រាប់ចាយវាយនៅពេលកំពុងសិក្សា ទី៤៖ការណែនាំរបស់ម្តាយ ទី៥៖ តម្លៃឯកទេសជំនាញ និង ទី៦៖ការណែនាំពីឪពុក។



កត្តាជំរុញ	តេស								
	ប្រុស			ស្ត្រី			សរុប		
	មធ្យម	ចំនួន	គំ.ស្តង់ដា	មធ្យម	ចំនួន	គំ.ស្តង់ដា	មធ្យម	ចំនួន	គំ.ស្តង់ដា
គ្រូ	3.63	314	0.968	3.67	378	0.982	3.65	692	0.975
ក្រុមប្រឹក្សាសាលារៀន	2.76	313	1.045	2.90	377	1.058	2.83	690	1.054
ម្តាយ	4.22	315	1.043	4.30	378	0.982	4.26	693	1.010
ឪពុក	4.21	315	1.037	4.12	377	1.144	4.16	692	1.097
មិត្តភក្តិ	2.71	315	0.979	2.70	377	0.947	2.70	692	0.961
បងប្អូន	3.20	315	1.146	3.33	378	1.082	3.27	693	1.113
អតីតសិស្ស	2.97	315	1.083	2.85	377	0.954	2.90	692	1.016
ផ្សាយពាណិជ្ជកម្មស.វិទ្យាល័យ	3.10	315	1.028	3.02	378	0.984	3.06	693	1.004
លិខិតផ្ទាល់របស់ស.វិទ្យាល័យ	2.95	314	1.039	3.02	377	1.039	2.99	691	1.039
ព័ត៌មានពីតំណាងស.វិទ្យាល័យ	2.95	315	0.941	2.95	378	0.945	2.95	693	0.943
ទំហំគ្រឹះស្ថានស.វិទ្យាល័យ	3.04	313	1.116	3.08	378	1.094	3.06	691	1.104
ក្បែរផ្ទះ	2.82	315	1.308	2.99	378	1.351	2.91	693	1.333
ទីតាំងសាកលវិទ្យាល័យ	3.21	315	1.091	3.36	378	1.084	3.29	693	1.089
អាចរកបានផ្ទះស្នាក់នៅ	3.77	315	1.969	3.96	378	1.818	3.87	693	1.889
ប្រាក់ចំណាយក្នុងការរស់នៅ	4.26	315	0.845	4.39	378	0.827	4.33	693	0.837
តម្លៃឯកទេសជំនាញ	4.11	314	0.878	4.34	378	0.837	4.23	692	0.863
អាចរកបានអាហារូបករណ៍	4.28	315	0.943	4.46	376	0.799	4.38	691	0.872

កេរ្តិ៍ឈ្មោះសាកលវិទ្យាល័យ	3.69	315	1.008	3.74	377	0.979	3.72	692	0.992
ចំនួននិស្សិតក្នុងសាកលវិទ្យាល័យ	2.97	314	1.059	3.05	376	1.075	3.01	690	1.067
ផ្តល់កម្មវិធីសិក្សាល្អ	3.64	315	0.952	3.71	378	0.926	3.68	693	0.938
ប្រពៃណីរបស់គ្រួសារ	2.70	315	1.285	2.89	378	1.390	2.80	693	1.345
ទីផ្សារការងារ	4.36	315	0.890	4.38	378	0.870	4.37	693	0.878

៤. សេចក្តីសន្និដ្ឋាន

តាមរយៈការសិក្សាស្រាវជ្រាវលើប្រធានបទ កត្តាដែលជះឥទ្ធិពលទៅលើការសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សា ថ្នាក់ឧត្តមសិក្សារបស់សិស្សថ្នាក់ទី១២ នាឆ្នាំសិក្សា ២០១៦-២០១៧ ពិសេសសិស្សនៅតាមទីជនបទនិងទីប្រជុំជនយើងឃើញថា គុណភាពការងារនាពេលអនាគតរបស់ពួកគេមួយចំនួនអាចនឹងមិនសូវមានប្រសិទ្ធភាពបំនិនប្រសប់ នៃការងារ មានការផ្លាស់ប្តូរការងារជាញឹកញាប់ ហើយអ្នកខ្លះអាចប្រឈមនឹងភាពអត់ការងារធ្វើទៀតផង។ ឯស្ថាប័នដែលនឹងស្រូបយកអនាគតនិស្សិតទាំងនេះ អាចប្រឈមនឹងបញ្ហាការងារជាប្រចាំ និងការផ្លាស់ប្តូរបុគ្គលិកជាញឹកញាប់។ កត្តានេះជះឥទ្ធិពលដល់ការអភិវឌ្ឍប្រទេសកម្ពុជាផងដែរ។ ដោយហេតុថា សិស្សថ្នាក់ទី១២ នាឆ្នាំសិក្សា២០១៦-២០១៧ ជ្រើសរើសជំនាញជាច្រើនសម្រាប់បន្តការសិក្សានៅថ្នាក់ឧត្តមសិក្សា យើងអាចសន្និដ្ឋានបានថា ពួកគេនឹងមិនជួបប្រទះនូវបញ្ហាច្រើនឡើយ ក្នុងការស្វែងរកការងារបន្ទាប់ពីចេញពីសាកលវិទ្យាល័យភ្លាម។ លទ្ធផលនៃការស្រាវជ្រាវបានបង្ហាញថាកត្តានាំឱ្យសិស្សសម្រេចចិត្តជ្រើសរើសជំនាញមាន មាតាបិតាសៀវភៅមគ្គុទេស ការផ្តល់ប្រឹក្សាពីមិត្តភ័ក្ត ពីកិត្តនាមរបស់សាកលវិទ្យាល័យ តាមការផ្សព្វផ្សាយ តាមរយៈចែកខិតបណ្ណដល់សាលារៀន។ ជាងនេះទៅទៀត ការសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សារបស់សិស្សទីប្រជុំជន និងជនបទមានលក្ខណៈខុសគ្នា។

សិស្សនៅទីប្រជុំជន ជ្រើសរើសមុខជំនាញពាណិជ្ជកម្ម ស្ថាបត្យកម្ម វេជ្ជសាស្ត្រ គណិតវិទ្យា គីមីវិទ្យា ប្រវត្តិវិទ្យា ភូមិវិទ្យា អក្សរសាស្ត្រខ្មែរ ភាសាអង់គ្លេស ទំនាក់ទំនងអន្តរៈជាតិ ច្រើនជាងជំនាញដទៃសម្រាប់បន្តការសិក្សាថ្នាក់ឧត្តមសិក្សា។ រីឯសិស្សនៅតាមជនបទបានសម្រេចចិត្តជ្រើសរើសឯកទេសរូបវិទ្យា ជីវវិទ្យា អគ្គីសនី កសិកម្ម វិស្វករសំណង់ ច្បាប់ និងគណនេយ្យ ។ ម៉្យាងទៀតមុខវិជ្ជាមួយចំនួនព័ត៌មានវិទ្យា ធនាគារ គ្រប់គ្រងទីផ្សារ គ្រប់គ្រងសាធារណៈ ក៏សិស្សនៅជនបទនិងទីប្រជុំជនបានធ្វើការជ្រើសរើសដែរ។ យើងឃើញថាសង្គមកម្ពុជាអាចនឹងសម្បូរធនធានមនុស្សពោរពេញដោយមនសិការមានគោលដៅសំខាន់ៗ ជាច្រើនវិស័យ អាចចូលរួមកាត់បន្ថយគ្រោះអវិជ្ជានឹងកាត់បន្ថយបាននូវបញ្ហាប្រឈមមួយចំនួនមួយចំនួនក្នុងសង្គមបន្ថែមទៀត។ បើពិនិត្យទៅលើជំនាញបន្តការសិក្សាថ្នាក់ឧត្តមសិក្សា ដែលសិស្សថ្នាក់ទី១២ នៅតំបន់ទីប្រជុំជន និងតំបន់ជនបទបានជ្រើសរើសយើងឃើញថា មិនមានភាពខុសគ្នាច្រើនឡើយ ប៉ុន្តែសិស្សនៅតាមទីជនបទ ជួបប្រទះនឹងបញ្ហាលំបាកច្រើនជាងសិស្សនៅតាមទីប្រជុំជន។ លើសពីនេះទៀតក្រុមស្រាជ្រាវបានសិក្សាពីចំណង់ចំណូលចិត្តរបស់សិស្ស ចំពោះមុខវិជ្ជាដែលខ្លួនចូលចិត្តរៀននៅវិទ្យាល័យហើយជ្រើសរើសបន្តថ្នាក់ឧត្តមសិក្សាដូចជា៖ គណិតវិទ្យា (បន្តរៀនអគ្គិសនី) រូបវិទ្យា (រៀនវេជ្ជសាស្ត្រនិងគ្រប់គ្រង) គីមីវិទ្យា (រៀនវិស្វករសំណង់ គណនេយ្យ និងធនាគារ) ជីវវិទ្យាបន្តរៀន (គណនេយ្យ (វិស្វករសំណង់ ទីផ្សារច្បាប់) ផែនដី (ចង់បន្តយកជំនាញច្បាប់ កសិកម្ម ព័ត៌មានវិទ្យានិងវិស្វករ) ភូមិវិទ្យា (ជ្រើសរើសគ្រប់គ្រង ច្បាប់ រដ្ឋបាលសាធារណៈ ព័ត៌មានវិទ្យា ទីផ្សារ វេជ្ជសាស្ត្រ និងពាណិជ្ជកម្ម) ចំពោះសិស្សចូលចិត្តប្រវត្តិ ជ្រើសរើសមុខវិជ្ជាបន្ត (គឺទីផ្សារគ្រប់គ្រង និងអគ្គិសនី) សិស្សខ្លះទៀតចូលចិត្តភាសាអង់គ្លេសបៃជាចង់បន្តការសិក្សា(ផ្នែកព័ត៌មាន អគ្គិសនីនិងពាណិជ្ជកម្ម) ឯសិស្សចូលចិត្តភាសាបារាំងចង់បន្តថ្នាក់ឧត្តមផ្នែកគណិតវិទ្យា។ តាមរយៈសិក្សាស្រាវជ្រាវបានបញ្ជាក់ថា ៖សិស្សមួយចំនួនមិនទាន់មានការសម្រេចចិត្តបានត្រឹមត្រូវនៅឡើយ លើជំនាញឯកទេសដែលខ្លួនត្រូវបន្តនៅសាកលវិទ្យាល័យរដ្ឋ និងឯកជន ដូចមានរៀបរាប់ខាងលើស្រាប់។ ដោយហេតុនេះក្រសួងអប់រំ យុវជន និងកីឡា និងក្រសួងមន្ទីរពាក់ព័ន្ធគួរជួយសម្រួលដល់បញ្ហាទាំងនេះដោយផ្តល់នូវដំណោះស្រាយដ៏សមរម្យសម្រាប់ពួកគេ។

លទ្ធផលខាងលើបានបង្ហាញពីសារៈសំខាន់នៃការបណ្តុះបណ្តាល ថ្នាក់ឧត្តមសិក្សា ដែលជាកត្តាមួយយ៉ាងសំខាន់ក្នុងការចូលរួមពាក់ព័ន្ធទៅនឹងទីផ្សារការងាររបស់យុវជន ក៏ដូចជា ប៉ះពាល់ដល់កំណើនសេដ្ឋកិច្ចជាតិ។ ការជ្រើសរើសជំនាញបន្តការសិក្សាគឺមានសារៈសំខាន់សម្រាប់យុវជនជំនាន់ក្រោយដែលជាវិថីឆ្ពោះទៅកាន់ទីផ្សារការងារក្នុងបរិបទពិភពលោកនោះ ម្យ៉ាងទៀតគុណភាពនៃការអប់រំ ក៏ជាកត្តា

ចម្បងមួយសម្រាប់ភាពជោគជ័យក្នុងទីផ្សារការងារក្នុងសង្គមកម្ពុជាសម័យទំនើប។ ការសិក្សានេះគឺអាចឲ្យយើងបានយល់ពីបច្ចុប្បន្នភាពនៃបញ្ហាជ្រើសរើសជំនាញថ្នាក់ឧត្តមសិក្សា បញ្ហាដែលពាក់ពាន់និងទីផ្សារ ការងារក៏ដូចជាការអភិវឌ្ឍន៍ធនធានមនុស្សរបស់កម្ពុជាយើងឱ្យក្លាយជាសង្គមពុទ្ធិ និងវិបុលភាពស្របតាមគោលនយោបាយរបស់រាជរដ្ឋាភិបាលនាសតវត្សទិ២១។

សំណូមពរ

តាមរយៈលទ្ធផលស្រាវជ្រាវខាងលើ មានបញ្ហាខ្លះៗក្នុងការសម្រេចចិត្តជ្រើសរើសមុខជំនាញ បន្តការសិក្សាថ្នាក់ឧត្តមនៅតាមសាកលវិទ្យាល័យនានាក្នុង ព្រះរាជាណាចក្រកម្ពុជា។

១. គួរមានការពន្យល់បកស្រាយពីគណៈគ្រប់គ្រងវិទ្យាល័យលើការចង្អុលបង្ហាញឱ្យបានត្រឹមត្រូវ តាមជំនាញឯកទេសនិងចំណង់ចំណូលចិត្តរបស់ក្នុងពេលរៀននៅវិទ្យាល័យ

២. ស្ថាបនដែលចងក្រងខិតបណ្ណដែលចែកជូនដល់សិស្សស្តីពីកិត្តនាមរបស់សាកលវិទ្យាល័យ គប្បីយកចិត្តទុកដាក់បញ្ចាក់ពីគោលបំណងនៃមុខវិជ្ជានីមួយៗឱ្យបានជាក់លាក់។

៣. សិស្ស និស្សិតគួរតែធ្វើការពិចារណា លើចំណង់ចំណូលចិត្តចំពោះមុខវិជ្ជារបស់ខ្លួនកាលនៅវិទ្យាល័យមុននឹងសម្រេចចិត្តជ្រើសរើសជំនាញបន្តការសិក្សាថ្នាក់ឧត្តម។ចៀសវាងការសម្រេចចិត្តខុសអាចនឹងខូចអនាគតរបស់ខ្លួននិងប្រទេសជាតិ។

៤. គប្បីមានការយកចិត្តទុកដាក់ពីប្រព័ន្ធផ្សព្វផ្សាយឱ្យបានទូលំទូលាយតាមតំបន់ និង ទីប្រជុំជនដល់មាតាបិតាសិស្ស។

៥. គណៈគ្រប់គ្រងសាលាគួរកោះអញ្ជើញមាតាបិតាសិស្សមកផ្តល់ប្រឹក្សាពិគ្រោះយោបល់ចំពោះជំនាញបន្តការសិក្សារបស់បុត្រធីតា។

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