IMPACT STATEMENTS ON THE K-12 SCIENCE PROGRAM IN THE ENHANCED BASIC EDUCATION CURRICULUM IN PROVINCIAL SCHOOLS

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ABSTRACT

The study described the knowledge, observations, benefits, expectations or potentials and sources of misinterpretations on the K-12 science program on its first implementation in selected provincial high schools in the Philippines. The impact statements of teachers, students and parent-respondents were analyzed using thematic content coding technique. Coding frames were constructed by adopting both "a priori" and "in-vivo" codes. The results showed the respondents viewed the K-12 science program as a means of preparing students toward better employment opportunities in the country or abroad. It also reports the program is viewed for holistic development of the 21st century learners equipped with necessary life skills who can contribute for economic and social development of the family and community. The impact statements suggest the need for close monitoring of the program implementation and provision of continuous professional trainings for teachers to clear areas of misinterpretations. Misconceptions on the nature of additional years of study further suggest the provision and wide dissemination of policy standards on employment and education opportunities in the ASEAN Economic Community integration.

Keywords: Impact statement, K-12 curriculum, basic education, science program.

INTRODUCTION:

The implementation of the K-12 curriculum in the Philippines started in 2012 beginning with grade 1 and grade 7 learners and the succeeding levels were introduced as these students get promoted to the next grade levels in the ensuing school year. Prior to this, the Kindergarten Education Act was implemented in school year 2011–2012 by virtue of Republic Act 10157; the law institutionalized the inclusion of kindergarten education into the basic education system of the Philippines (PhilStar.com.,2012). Subsequently, Republic Act 10533 also known as the "Enhanced Basic Education Act of 2013" enabled the implementation of the K-12 in the country (The Official Gazette,2013).

The Philippine K-12 curricular program provides at least one year of Kindergarten education and a total of twelve years of basic education similar with most of the countries in the world. The addition of two years on the former ten-year basic education program was envisioned for mastery of learning making learners better prepared for the world of work besides the conventional belief of just preparing them for collegiate education. (K-12 Basic Education Program, *The Official Gazette*, 2012; K-12 Primer |K-12 Update *Teachers' Lounge*, 2013). The features of the K-12 Enhanced Basic Education Program include the strengthened Science and Math education which follows a spiral progression. The use of spiral progression avoids disjunctions between stages of schooling and allows learners to learn topics and skills appropriate to their developmental and/or cognitive stages. The spiral progression is also believed to strengthen retention and mastery of topics and skills as they are revisited and consolidated with increasing depth and complexity of learning in the succeeding grade levels (Quijano and Technical Working Group on Curriculum, 2012).

In the articles "Additional Years in Philippine Basic Education" by the SEAMEO-INNOTECH (2010) and the K-12 Primer|K-12 Update in Teachers' Lounge of Rex publishing (2013), the comparative data on the length of basic and pre-university education in Asia was explained and showed the Philippine education system provides only ten (10) years for the basic education cycle and as the preparatory education for the collegiate level while most of the countries around the globe have either 11 or 12 years of basic education cycle. The ten-year Philippine basic education system became a disadvantage for Filipino workers abroad and for those who intend to study outside the Philippines. Many Filipino professionals desire working abroad for greener pastures but they tend to land a job apart from the diploma they pursued in the Philippine higher education institutions. Some persistent overseas workers submit themselves to state policies on earning professional license besides having earned the same in their home country in order to practice a profession abroad. Children of Filipino migrants to other countries tend to repeat a grade level already earned in the Philippines or to enroll additional courses to fit into the basic education program of their new home country. The Department of Education (DepEd) of the Philippines is aware that the Filipino graduates are disadvantaged for not being recognized as professionals abroad due to the ten-year curriculum that is usually perceived by other countries as insufficient. According to UNESCO Educational Commission to the Philippines, six (6) years of elementary school and four (4) years in the secondary is not adequate. The group proposed eventually the increase to 12 years. Moreover, high school graduates are observed to have inadequate basic competencies including mature disposition essential in real life outside the school thus, making them unfit for university education. Whereas, graduates in high school that do not pursue collegiate education become vulnerable to exploitative labor practices (Economic Issue of the Day in *Philippine Institute for Development Studies*, 2012).

With these scenarios, the DepEd lays high confidence on the K-12 Program in providing better quality of education that is based on spirally progressing curriculum starting with simple topics moving toward increasing complexity in order for the learners to gain mastery of concepts and skills. Graduates of the K-12 program are therefore envisioned as better prepared to compete globally for employment opportunities (K-12 Primer|K-12 Update, *Teachers' Lounge*, 2013). This change on basic education cycle caused the conduct of stakeholder consultations, policy discourses, and education summits to gather inputs and feedback on the educational reform, however, the K-12 Program remains an issue of

inquiries on its implementation and effectiveness. It continuously solicits different responses among various individuals from the educators, students, parents and various stakeholders.

The grade 7 students observed their science lessons as comparable to science classes of second year high school biology, third year chemistry and fourth year physics in the earlier Basic Education Curriculum. The grade 7 students are put to a certain level of confidence performing varied learning activities aided with learning modules in the K-12 Science Program. On the other hand, the implementation of the K-12 Program remains a formidable matter for schools not well prepared to embrace the program. Teachers are made to adjust to innovative practices integrated in the preparation of lessons, actual delivery of teaching, rating student performances and of the overall classroom management. The parents foresee a longer time of schooling that will boil down to more expenses on the education of their children. Hence, the impact statements from the immediate beneficiaries of the K-12 Program provide salient data on the status of the first implementation of the program among provincial schools and use such data for monitoring and basis by the technical working groups for curricular review and further enhancement.

LITERATURE REVIEW:

The science content and science processes in the K-12 Curriculum are intertwined and are organized around situations and problems that challenge and arouse students' curiosity and motivate them to learn and appreciate science as relevant and useful subject. There are varied hands-on, minds-on, and hearts-on activities that are used to develop students' interest and let them become active learners instead of just relying solely on textbooks. As a whole, the K-12 science curriculum is learner-centered and inquiry-based, emphasizing the use of evidence in constructing explanations. Concepts and skills in Life Sciences, Physics, Chemistry, and Earth Sciences are presented with increasing levels of complexity from one grade level to another in spiral progression, thus paving the way to deeper understanding of concepts. These concepts and skills are integrated rather than discipline-based, stressing the connections across science topics and other disciplines as well as applications of concepts and thinking skills to real life. After completion of grade 10, the students' learning competencies and skills will be assessed to match the areas of specialization or tracks they are to pursue in the senior high school level. These tracks will be either on Academic, Technical-Vocational Livelihood, or Sports and Arts. Students will be required to undergo immersion activities or apprenticeship which may provide rich experiences relevant to their chosen specialization. (*K-12 Basic Education Program*, 2012; K-12 Primer |K-12 Update, *Teachers' Lounge*, 2013).

Science and Math proficiency had been pointed out by the Philippine President Benigno Simeon C. Aquino III as one among his 10-point basic education agenda aimed at rebuilding infrastructures for science and math education so the Philippines can produce quality graduates in these fields and will ensure the country's pool of expert professionals who are globally competitive (Piamonte, 2012 in the article Primer on the Enhanced K-12 Basic Education Program, Unescoclubphilippines). Enhancing the quality of basic education through K-12 Program is urgent and critical as the Philippines had been left behind the countries in Asia and one among the three remaining countries in the world in terms of offering the global trend of 12-year basic education cycle. The two other countries, Djibouti and Angola in Africa are like the Philippines with a 10-year basic education cycle (K-12 Primer |K-12 Update, *Teachers' Lounge*, 2013; Piamonte, 2012 in the Primer on the Enhanced K-12 Basic Education Program, Unescoclubphilippines). Moreover, Piamonte exposed graduates of degree courses in the Philippines are not recognized as professionals abroad. The case of licensed and registered Philippine nurses who intend to work abroad for example, need to take state board examinations to qualify them as professional nurses. The reason behind this scenario is the short term duration of the Philippine basic education cycle. Hence, the urgent need to adopt a K-12 program which provides quality education and is internationally recognized and comparable.

The curricular reforms in the Philippine K-12 "Enhanced Basic Education" are geared toward global responsiveness and competitiveness as measured against the standards of regional or international organizations such as the ASEAN Economic Community (AEC). The Philippines is a member of the

AEC for a regional economic integration by 2015 that promotes among other visions an open market for employment opportunities among labor forces of the member countries. Neighboring Asian countries of the Philippines have long been prepared in terms of the educational requirements of their work force for a job fair at least across Southeast Asia. The requirements of the twelve-year basic education were fully implemented among other ASEAN member countries compared to the Philippines that started implementation in year 2012. Hence, this K-12 Program is a strategy that prepares the Philippines in parallel assessment on quality of graduates along with competitors in regional or international economic communities (Garcia, 2013).

Consequently, the roadmap of the Philippines toward ASEAN 2015 includes the provision of enabling laws such as the "Republic Act (R.A.) 10157" gives the Philippine Department of Education the authority to implement reforms in basic education and of requiring kindergarten education as prerequisite to elementary education in all public schools in the country (RTVM, 2012).The general kindergarten program is the 10-month training provided to children who are at least five years old upon entry in the elementary schools. The lessons are presented through the thematic and integrative curriculum to ensure the development of foundation skills among children and to prepare them for Grade 1 (Brago,2012). Likewise, Republic Act 10533, the "Enhanced Basic Education Act of 2013" authorized the implementation of the K-12 in the country with the following expected benefits as enumerated in the K-12 Primer (Teachers' Lounge, 2013), these benefits are: a) the provision of ample time for the acquisition and mastery of learning competencies and skills integrated in co-curricular and community activities toward holistic development of the learner, b) the learners are better prepared for tertiary education, c) learners earn certificates of competency after acquiring required skills in their chosen area of specialization during senior high school training, d) lower household expenses compared to a two-year college education, since the two-year senior high school training as part of basic education is given free in Philippine public schools compared to privelege college education; e) the K-12 graduate of about eighteen years old will then be capacitated to earn, and can contribute to Philippine economic growth, f) graduates of the K-12 program will be accorded recognition abroad, g) the learners will be holistically developed in all dimensions, h) the lessons in each level are decongested providing room for in-depth learning of concepts and mastery, i) the integration of kindergarten education into the basic education system provide better preparation toward grade 1 level learning competencies, and j) the K-12 graduates will be able to meet the standards for higher education in the country and abroad, equipped with the 21st century skills and enriched learning competencies which will be acquired from longer exposure and focus on core subjects such as Science, Mathematics and English together with elective courses prepare students to be responsive to the needs of the industrial and manufacturing sectors.

The realization of K-12 curriculum benefits rest largely on the action of the education sector whereas the roadmap to ASEAN 2015 is placed on the competitiveness of Filipino professionals and the competitiveness of graduates of Philippine Educational institutions via K-12 program (Garcia, 2013). The proximity of time between implementation of the K-12 program in Philippine schools and the integration of the country to ASEAN economic community in 2015 causes all the cramming of the technical working groups and the mixed reactions by the teachers, students, and parents who are directly affected. This study therefore aimed to document the impact of the initial implementation of K-12 Program focusing on science education in grades 7 and 8 of the school year 2013-2014. The impact statements serve as the yardstick that measure how much of the K-12 program issues and benefits are understood by the stakeholders and thereby provide data for curricular review as the K-12 Program is on its gradual year to year implementation.

STATEMENT OF THE PROBLEM:

The study aimed to describe the impact statements on the initial implementation of the science program in the K-12 enhanced basic education curriculum in provincial schools. Specifically, the study sought to answer the following:

1. What are the views of the teachers, students and parents on the implementation of the Science program in the K-12 enhanced basic education curriculum?
2. What are the benefits ascribed by the respondents to the K-12 science program?
3. How do respondents relate the potential impact of the K-12 science program in life situations? and
4. What are the views of respondents as sources of misinterpretations in the K-12 Science program?

METHODOLOGY:

The qualitative method of research was used in gathering and documenting the impact statements on the first implementation of the K-12 science program as experienced by grade 7 and 8 students, their teachers and parents from the four congressional districts in the province of Isabela, Philippines.

The respondents were selected through cluster sampling technique. The clusters consist of the four congressional districts of Isabela and the towns per district were randomly picked. Twenty five (25) teachers who were directly involved in the teaching of science in grades 7 and 8 and were willing to share information about the study were requested to fill out a questionnaire after a brief discussion on the K-12 science program of the enhanced basic education. The questions revolved on what they observed having been done in schools in relation to the K-12 science program, the benefits they ascribe to it, the potentials, and issues of misinterpretations in the implementation of the K-12 science program. The fifteen (15) parents with children enrolled in grade 7 or 8 and the selected eighty four (84) students of grade 7 and 8 who gave consent to participate in the study have also been requested to share information in similar manner as the teacher respondents.

The impact statements were written by each of the respondents on the questionnaire to ensure precision and accuracy of data collection. The data gathered were consolidated into themes and treated statistically using frequency endorsement count and percentage.

The written responses were coded using thematic content analysis as the main technique. The responses analyzed by coding strategy generated the main themes, sub-themes and categories. Coding frames were constructed by adopting both “a priori” and “in-vivo” codes (Barbour, 2007 and Charmaz, 2006). “A priori” and “in-vivo” codes are distinguished from each other in that the former are those whose sense is apparent from the data themselves whereas the latter have meanings which are special to the participants (Barbour, 2007).

RESULTS AND DISCUSSIONS:

The thematic content analyses began with categorizing the impact statements into the four major themes as statements of *a.* observed practices and knowledge on K-12 Science program, *b.* impact statements on benefits derived from the program, *c.* potential impacts of the program on future life situations, and *d.* views on sources of misinterpretations on the program. The sub-themes identified as either the statements describing the program, the learners and teachers or the society. These statements grouped by sub-themes were finally categorized into more definite themes of more coherent ideas as presented in graphs. The categorized impact statements were further analyzed by coding frames of “priori” or impact statements whose sense or meaning is apparent from the data and “in-vivo” with meanings which are special to the respondents (Barbour, 2007).

VIEWS ON THE SCIENCE PROGRAM IN THE K-12 ENHANCED BASIC EDUCATION CURRICULUM:

The practices and knowledge on K-12 Science program as indicated in Figure 1 present the general impact statements. These statements were drawn either from one’s personal encounter of the respondents or through information drives spearheaded by the Department of Education. The statements showed that the parents, students and teachers are commonly aware of certain issues about the program while the rest of the issues were left to the concern only of the students and teachers.

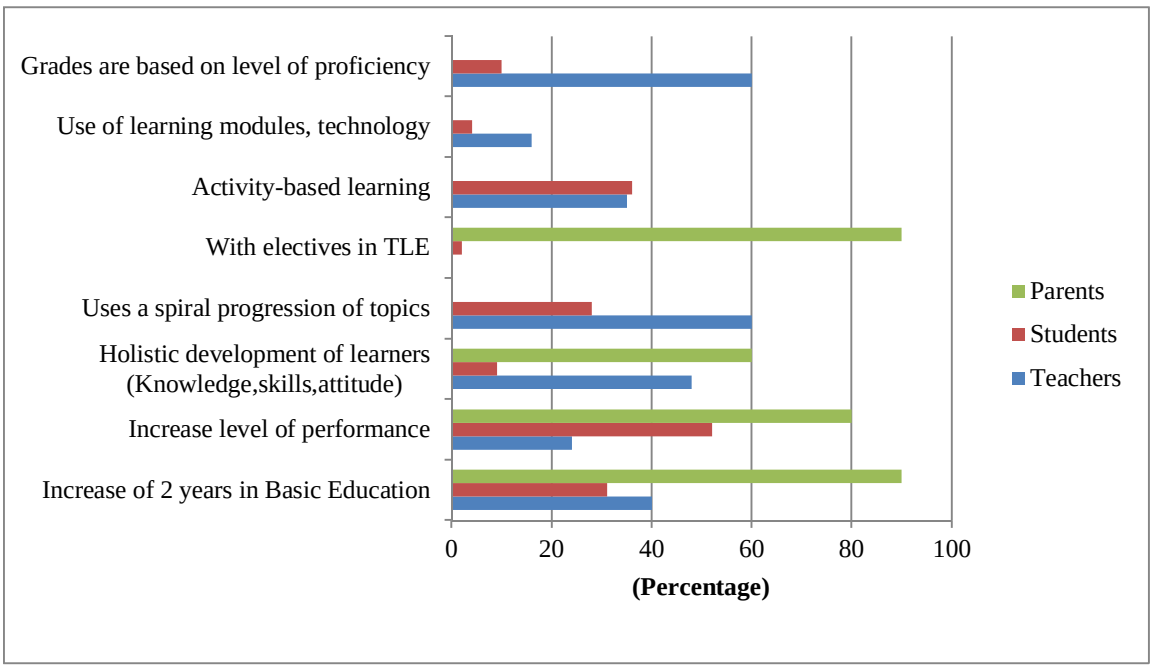

Figure 1: Views of teachers, students and parents on k12 science program

The parents, students and teachers have common understanding on K-12 science program in terms of three issues which are the increase in the number of years in schooling, increase of performance, and of holistic development of learners. The parents and students share a common view that the K-12 program will provide elective courses on Technology and Livelihood Education. This information had drawn much attention to parents as a significant characteristic of the program that is different from the earlier basic education curricula. The economic status of the Filipino family serves as a strong motivation to children in school to pursue education. It is a common belief that education is a stepping stone toward better living standards. The impact of offering courses on technology and livelihood education is exceedingly high among parents compared to those of the student- respondents because of varying perceptions. The parents perceive the possibility of their children gaining vocational skills for work to earn additional income for the family but for the students exposed and have access to communications technology perceive the courses as avenues for learning more technological skills suited for computer operations which are applicable for games and social media networking. Both perceptions contribute to the rechanneling of course objectives to match desired outcomes of instruction.

The statement on the increase of two years on basic education also obtained very high impact among parents. The financial expenditure of the Filipino family focuses on the education of children and the additional years of schooling means additional stress on family budget. The common responses of parents on financial stress brought by expenses in school include: seeking cash loans from financial institutions or business firms which they promise to pay in the form of farm yields in harvest time, or by asking for advance payment of farm services for the next cropping season. And if all possible measures are exhausted, the family has to stop the child from attending school. On the other hand, the parent-respondents who belong to the upper economic class favor the additional years of basic education based on the advantages of comparable length of basic education as the other countries of the world. These insights call for the attention of education leaders in enriching the community of salient information referring to the delivery and outcomes of the additional senior high school education.

The impact statement on the observed increase in performance or knowledge bring a holistic development among learners and drew more concern for parents than the teachers and student-respondents. Many of the students recognized the increased level of performance that the K-12 science program claim to realize; this thinking could be traced from what they actually experienced since the mix of their science subject consist of the science lessons offered in higher levels in secondary school

having Biology for second year high school in the old basic education curriculum, Chemistry for third year and Physics for fourth year. The impact of the program among students also dealt with the provision of learning activities, use of technology in the delivery of instruction and of lessons in increasing difficulty which is a characteristic of the spiral progression of topics. These experiences communicated by the students to their parents bring a reasonable impact as parents normally desire to give their children quality education.

In a small group discussion, some students disclosed that learning is more interesting, effective and enjoyable in K-12 because they learn Chemistry, Physics, Biology and Earth Science all in one year and there are varied learning activities which enhance their talents and skills. Moreover, students find the topics easy at first and gradually become hard but there is mastery of the topics because they are discussed in their own pace and longer years to study. On the contrary, some students did not agree that K-12 program is more interesting, effective and enjoyable because the topics are too difficult and they need to stay longer in school for two years on senior high school.

Figure 1 also shows that the teachers' knowledge on the program being the prime actors, revolve more on the delivery of topics in spiral progression and on grading system based on level of proficiency. The initial implementation of the program normally brings pressures to teachers on these two concerns as new practices are difficult to follow with great accuracy. The use of instructional modules and technology such as laptop and projectors had also brought impact on teachers. On the other hand, the issue on the provision of elective subjects in Technology and Livelihood Education did not draw attention to the teachers in science. The pool of teachers specializing in technology and livelihood education is concentrated in Technical Vocational Schools apart from the basic education schools directly supervised by the Department of Education and their number will not be enough to address the needed teaching force for the elective courses in K-12 program. The least attention of science teachers on the issue can be redirected toward helping solve the gap of needed teaching force by providing science teachers some technical and livelihood trainings akin to their science preparations such as on horticulture and on raising of animals.

THE BENEFITS ASCRIBED TO THE K-12 SCIENCE PROGRAM:

The benefits ascribed by the respondents to the K-12 science program (Figure 2) were the advantages experienced by the learners and by the teachers.

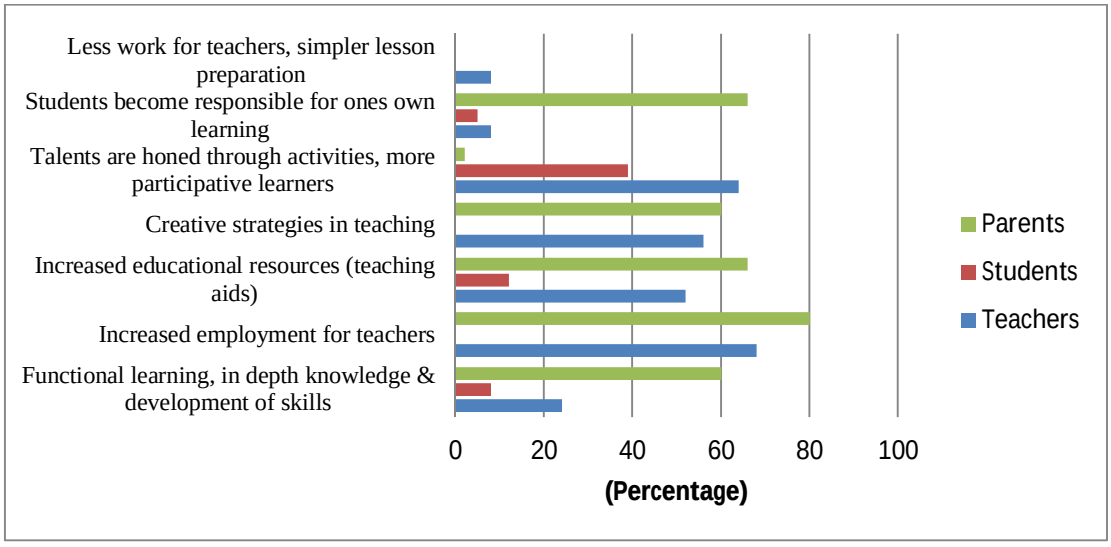

Figure 2: Benefits ascribed to the K-12 Science program

The parents who were not directly benefited drew attention on increased employment of teachers in the K-12 program as well as seeing teachers with increased teaching resources like modules and gadgets. From this point of view, parents consider the possibility of creative teaching strategies able to

transform learners into gaining functional understanding and becoming responsible for one's own learning. Teachers on the other hand consider the increased teacher employment as having the most evident impact of the program. The onset of the program implementation had triggered hiring of more teachers in the public schools. Teachers also experienced the impact of the program on the use of activities that led students become more participative and had enhanced students' talents. The activities introduced by teachers are aided by gadgets making them more creative in their teaching however, the depth of knowledge and skills development were deemed to have less impact to teachers as they probably look for better results than what they actually yielded from the students' performance. This findings support the study of Cabansag (2013) that explained the vulnerability of science teachers of becoming motivated and unmotivated by the same factor. The motivation of science teachers in introducing varied learning activities may diminish and put them under stress when the results of their efforts are not compensated by students' performances. A lesser percentage of the teacher-respondents regarded lesson preparation as simpler and less work in the K-12 program since their instructional modules provide almost all necessary steps they are supposed to be planning and writing. Similarly, there was less impact on teachers on issues of student's responsibility for self-learning. Figure 2 also shows that learning activities paired in science lessons had the most noticeable impact of the K-12 program among students. Their attention was also drawn toward the use of instructional aids that goes with the activities. They also recognized having acquired in depth learning, developed skills and their becoming responsible for their learning as brought by the implementation of the K-12 science program. The supervisors of instruction should in effect, consistently encourage teachers in providing quality learning tasks in classes to sustain interest of the teachers and students in the teaching-learning process.

THE K-12 SCIENCE PROGRAM POTENTIAL IMPACT:

The potential impact of K-12 science program on future life situations focused on economic and social benefits as shown in Figure 3. The impact of skills training and specializations will prepare the students in the world of work had the greatest impact among parent- respondents. The parents also hoped the K-12 graduates will be globally competitive. Prior to enrollment to grade 11, the students will be assessed in terms of learning competencies and skills acquired from grade 7 through grade 10. Results of the assessment will be used to guide the incoming senior high school students in choosing an area of specialization to focus either on Academics, Technical-Vocational, or Sports and Arts (K-12 Primer|K-12 Update, *Teachers' Lounge*, 2013).

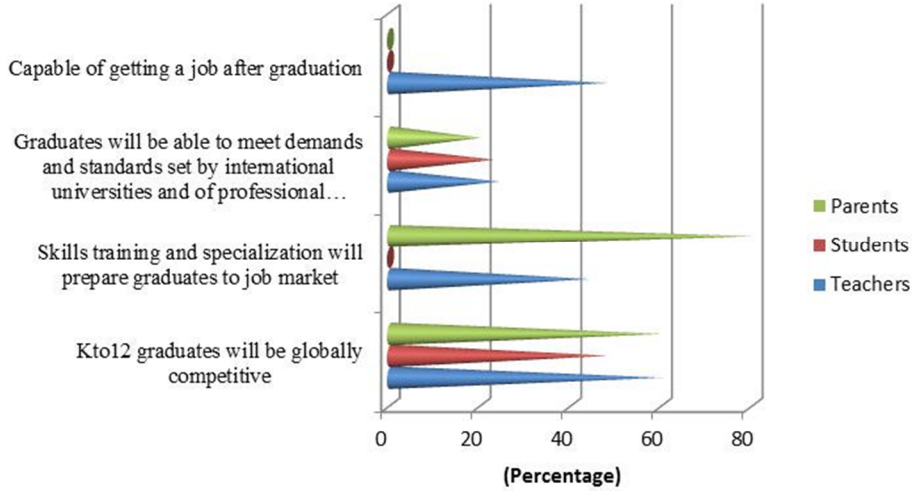

Figure 3: Views on potential impact of K-12 Science program on life situations

Science as one of the core subjects and specializations in academics will prepare students in the science related degrees and will equip them with competencies to meet the demands and standards set by universities abroad; and K-12 graduates will be well prepared to pursue professions and earn mutual recognition as the graduates of universities in other countries. The teachers and students have similar

views on becoming globally competitive as a result of the implementation of the K-12 program as a whole (Figure 3). The teacher- respondents had remarkable regard on the capability of the K-12 graduates of getting a job after graduation. The certifications of competencies will be issued after proper evaluation by the government agency called "Technical Education and Skills Development Authority (TESDA)" will enable the K-12 graduates get a job requiring technical and vocational skills.
Finally, Figure 3 shows that student respondents view the potential impact of the K-12 program on the global scenario in terms of competitiveness and in meeting the standards of other universities abroad. These impact statements point out to high hopes of the respondents on the possibility of K-12 graduates in Philippine schools for mutual recognition on educational preparations for university work will eventually qualify them to get equal opportunities for employment in the global market. These impact statements are the expected outcomes which are yet to be seen in the next five years. Policies on employment in the global market and opportunities on education in the country and abroad should therefore be widely disseminated for better positioning of the country's human resource. Economists and authorities in the labor market should generate a map of employment opportunities that suit the skills and trainings of the work force of the country to optimize the potentials offered by this education program.

SOURCES OF MISINTERPRETATIONS IN THE K-12 SCIENCE PROGRAM:

The additional two-year training in senior high school has been designed for students to have sufficient time to consolidate and master the academic and technical skills embodied in the desired learning competencies in the 21st century (Philippine Institute for Developmental Studies, 2012) but some of the parents and teacher-respondents view the additional years of study in terms of expenses (Figure 4) notwithstanding the advantage of the senior high school years given free as part of basic education in public schools compared to a more expensive two- year college work in higher education. The birthing years of new programs usually cause pains both to the implementer and receiver which include shortage of allotted funds or delay of release of funds resulting to insufficient resources. Structures such as classrooms take time for construction and normally get realized later.
The sequencing of learning competencies depend on concepts and skills that are integrated rather than discipline-based, stressing the connections across science topics and other disciplines as well as applications of concepts and thinking skills to real life (Piamonte, 2012 in "Primer on the Enhanced K-12 Basic Education Program." Unescoclubphilippines). Teacher respondents who usually beg off or refuse the idea behind the sequence of competencies considered the issue as source of misinterpretation. The suggested learning activities paired to the learning competencies allow multi-disciplinary concepts to surface during the processing of information. The facility of the teacher to focus on desired competencies could be a factor to consider. This probably stems from other issues as shown in Figure 4 such as the different points of view of trainers or lecturers on capability seminars for K-12 program hence, leading to confusions; a typical issue among teachers is on matters of grading system. Unlike the old curriculum that uses quantitative or numeric values, the K-12 curriculum on the other hand uses qualitative descriptions coded with characters of the alphabet as A- for Advanced, P- Proficient, AP- for Approaching Proficiency, D- Developing, and B- for Beginning. The transmutations from computed values to qualitative descriptions also have some technical matters and could bring misinterpretations. Other impact statements also reveal that teachers consider insufficient trainings and seminars for teachers to cause misinterpretations on the nature K-12 curriculum.

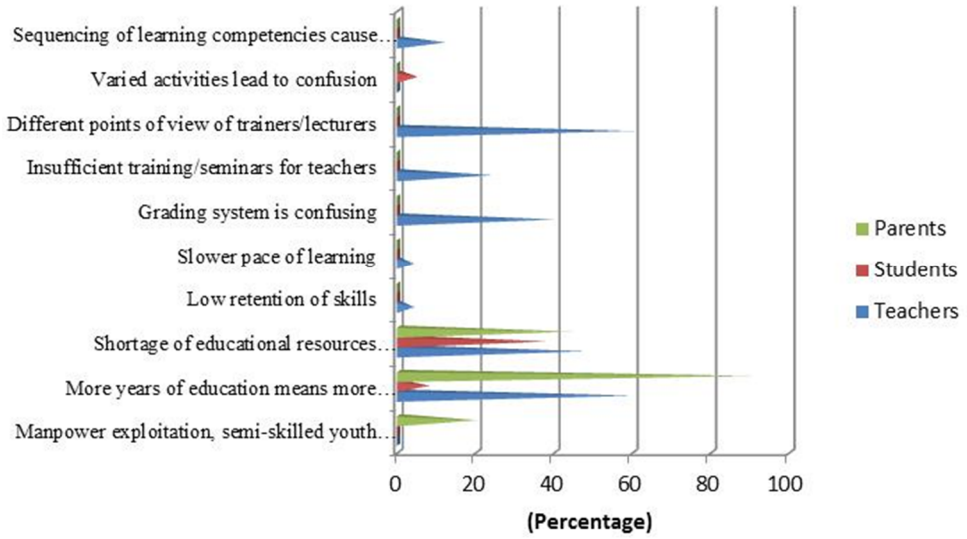

Figure 4: Views on sources of misinterpretations on the K-12 Science program

The prevailing idea on basic education is just a preparation for college or university admission and not as preparation for employment thus, the provision of Technology and Livelihood Education "TLE" in the K-12 curriculum (designed to prepare students for employment after graduation from senior high school) is presumed by some parents as preparing semi-skilled youth to the labor force at an early age of eighteen (18) and could lead to manpower exploitation. The traditional Filipino folks consider the age of eighteen as rather young to make independent decisions and take serious responsibilities such as earning for a living.

The SEAMEO-INNOTECH (2010) report showed that the Philippines should improve its educational goals to make them clearer more focused on the acquisition and mastery of learning competencies and skills desired in the 21st century. According to the report, while the current educational goal of the country on developing functional literate Filipinos by 2015 is anchored on the UNESCO 4 Pillars of Learning, the goals should be redirected to shift focus to 21st century competencies given the realities of today's knowledge society. The organization also reported that both elementary and secondary education levels in the Philippines were found to be congested of subjects or lessons compared with Brunei Darussalam, Malaysia, and Singapore. In elementary level, certain subjects such as mathematics, sciences, social studies, and other subject areas should be decongested. The SEAMEO-INNOTECH (2010) also recommended the convergence of the 2010 Secondary Education Curriculum. As for secondary education, it is necessary to support the spiral progression curriculum model which follows world standards of offering an integrated approach in the delivery of the different subject areas that promotes critical thinking and active participation to suit the demands in the 21st century learning. The report further reminded the need to develop a higher system of secondary education with considerations on the provision of opportunities for learners with other forms of intelligences such as trainings for students who are inclined on taking technical and vocational disciplines (SEAMEO-INNOTECH, 2010). This report explains the rationale of enhancing the basic education curriculum of the country and the imminence of implementation is supported by the visions of the ASEAN Economic Community integration by year 2015.

CONCLUSION:

The impact statements from the surveyed stakeholders of the K-12 curriculum put emphasis on the role of education in realizing holistic development of the 21st century learners equipped with necessary life skills who can contribute for economic and social development of the family and community. Science as one of the focus subject areas in the K-12 curriculum has been viewed as venue for honing students' talents obtained through various learning activities. Misconceptions on the nature of the additional two

years of basic education known as the senior high school level pose negative impact among parents on the lower economic status. The impact statements suggest the need for close monitoring of the program implementation coupled with continuous professional trainings of teachers to clear areas of misinterpretations such as on grading system, skills development for employment standards, and on processing of learning activities to attain target competencies and attainment of mastery. The impact statements further suggest the provision and wide dissemination of policy standards on employment and education opportunities in the ASEAN Economic Community integration.

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