Extent of Management Support on the Mathematics Instruction under the K to 12 Program in Selected Secondary Schools in the Division of Batangas, Philippines

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Abstract- *The study determined the extent of management support on the Mathematics instruction under the K to 12 Program in selected Secondary Schools in the Philippines to help give direction on the proposed management plan to ensure the successful implementation of the program. It looked into the personal and professional characteristics of the teachers handling Mathematics subjects. Likewise, comparison on the responses of the two groups regarding extent of management support being given was also taken into consideration. The researcher used the descriptive method of research using probability sampling technique to identify the respondents of the study. There were 30 administrators/school heads and 306 Mathematics teachers who participated in the survey. Result of the study revealed that the administrators believed that Mathematics teachers highly manifested the personal and professional characteristics becoming of a mathematics teacher. On the other hand, the Mathematics teachers themselves believed that it is only moderately manifested on them. The management supported the Mathematics instruction to a moderate extent. Further, there is no difference on the assessment of administrators and Mathematics teacher on the extent of management support being given by the respective administrators. In light of the foregoing, management plan was proposed to ensure best Mathematics instruction under the K to 12 Program were suggested.*

Keywords –K to 12 Program, Management Support, Mathematics Instruction

INTRODUCTION

The strength of a nation depends on the kind of education the people get, the knowledge to advance it, skills they acquire, and the values embedded in their heart and mind. Mathematics, as one of the most developed branches of Science, has much to do with national development since it contributes to a better performance of each individual in their chosen career, which eventually helps boosts the economic progress of the nation. This is true especially in the field of teaching since all the past, present and future leaders of the nation undergo the basic education, which includes mathematics and all its branches. It is in this light that Mathematics instruction is given prime importance in the K to 12 Program of the government.

K to 12 Program means kindergarten and the six years of elementary and six years of secondary education. The reform includes decongesting and enhancing the basic education curriculum for learners to master basic competencies, lengthening the cycle of basic education to cover kindergarten through year 12. Expanding the basic education by adding kindergarten and two years in high school ensures that graduates have the necessary skills and reach the employable age to qualify entrance into the world of work, if they desire or need to do so. On the other hand, graduates who opt to go to tertiary education are deemed better prepared for college study and work [8]. The objective of the program is to be able to produce more productive and responsible citizens equipped with the essential competencies and skills for both life-long learning and employment. This program also aims to meet the standards required for professionals who would want to work abroad [15].

Introducing the K to 12 Program and having done the curriculum revision may not guarantee an absolute positive result. Taken into considerations the very tough nature of Mathematics as a subject, management support to ensure the effective implementation of the aforementioned program should be in place. According to Bush, [4] schools need trained and committed teachers but they, in turn, need the leadership of highly effective principals.

Principals by virtue of their position are the school managers and the quality of their managerial functions determine to a large extent the success or failure of the school [12]. In this regard, principal should provide teachers with needed management supports to effectively function in their schools [5]. This is to say, principals should provide management support for teachers' work load and the utilization of available professional and material resources in addition to providing for teachers welfare, supportive supervision, giving rewards, counseling employees, organizational career planning and professional growth [13]. According to Adebola, [6] professional growth or capacity building encourages staff development in the form of workshops, seminars as well as in-service training all put together encouraged teachers to be better equipped for effective delivery and performance in school.

Management support by school principals are essential for teachers' performance in building sufficiently motivated and effective teachers. Act of giving assistance, encouragement and stimulation to teachers by principals enhance teachers' performance towards the achievement of the objectives of the school system. Imperatively, teachers who are supported by their principals perform maximally. Hence, teacher performance can be taken synonymous with teachers' commitment and is a valid construct in school growth [13].

Further, improvement of schools are possible when the reform effort is well thought out, when teachers are active agents in the change process, when there are sufficient resources and time to support reform and when supportive leadership is present [5].

Furthermore, the quality of leadership makes a significant difference to school and student outcomes. There is also increasing recognition that schools require effective leaders and managers if they are to provide the best possible education for their learners [4].

It is in this context that the present study was premised on the theory of motivation of Maslow [10] which propounded that people are motivated by five step hierarchy of needs: psychological, safety, love, esteem and self-actualization. That is the reason why school principals need to revisit teachers' fate in the direction of motivation on the context of Maslow's ideology. Likewise, it can also be anchored on the expectancy valence theory of Vroom [16] which places emphasis in understanding the individual's goals and creating linkage between effort and performance, between performance and reward, and reward and individual goal's satisfaction. This theory is relevant to the present study due to the fact that a particular action will be followed by a particular outcome.

By implication, the two mentioned theories focus on principal's support for teacher performance which can be reflected in the students' performance. Therefore, it can be said that the presence of principals' management support or its absence in schools invariably affects teachers' performance. The implication is that teachers develop themselves invariable, students are developed as well.

It is in this light that the researcher opted to take a look on the extent of management support being given to Mathematics instruction under the K to 12 Program which based on the given premises could determine the success of full implementation of the aforementioned program.

OBJECTIVES OF THE STUDY

The study determined the extent of management support being given to Mathematics instruction under the K to 12 Program. Moreover, it looked into the teachers characteristics as described by the administrators and teachers themselves in terms of personal; and professional characteristics; determined the extent of management support being given to Mathematics instruction as evaluated by the teachers and administrators themselves; determined significant difference on the extent of management support being given to Mathematics instruction as evaluated by the two groups of respondent; and proposed management plan that might help in the successful implementation of Mathematics instruction under the K to 12 Curriculum.

METHODS

This study used the descriptive method of research utilizing quantitative techniques. This design helped determined the assessments of two groups of respondents regarding the extent of management support to Mathematics instruction in the K to 12 Basic Education Program. The researcher found this method the most appropriate to address the problem at hand.

Since high school level are the one who are directly affected in the implementation of the K to 12 Curriculum, the principal or the school heads,

Mathematics coordinators, and Mathematics teachers in the Area I, Division of Batangas were identified as respondents of the study using cluster sampling and a total of 30 administrators and 306 Mathematics teachers who participated in the study were chosen using simple random sampling.

The content of the survey instrument originated from open internet sources, thesis and dissertations and views from proper authorities lined in the field of mathematics. Further, the researcher sought assistance of experts to the appropriateness of the use of different terms as in vagueness, limitations, organizations and the likes. The researcher used Cronbach Alpha method to test the validity and reliability of the questionnaire. The reliability index of .971 which indicates high level of internal consistency of the items prompted the researcher to proceed with the administration of the instrument.

The survey instrument used in this research consists of two parts: The first part dealt with the personal and professional characteristics of the Mathematics teachers. This consists of items that determine the characteristics of great and effective teachers in terms of their personal and professional attributes. The second part dealt with the extent of management support being provided in the implementation of mathematics instruction.

To determine the personal and professional attributes of the teachers the respondents were asked to answer the survey questionnaire. Using Likert Scale of four, they were asked to check (√) the column that corresponds to their answer. Weighted Mean is employed in this question using the following: 3.50-4.00: Highly Manifested; 2.50-3.49: Moderately Manifested; 1.50-2.49: Least Manifested; 1.00-1.49: Not Manifested.

On the other hand, to determine the extent of management support being provided in the implementation of mathematics instruction the researcher also asked the respondents to answer the survey instrument. Likewise, using Likert Scale of four, they were asked to check (√) the column that corresponds to their answer. Weighted Mean was also employed in this question using the following: 3.50-4.00: Great extent; 2.50-3.49: Moderate Extent; 1.50-2.49: Least Extent; 1.00-1.49: Not Supported at All.

Utmost confidentiality was ensured and the respondents were assured that the data that could be gathered are strictly for academic purposes.

RESULTS AND DISCUSSION

Personal Characteristics

Personal characteristics of the teachers as mentioned by Balagtas et.al; [2] refers to the appearance, behavior, manner of thinking, manner of talking, work ethics, social relation, student relation, and other personal traits of a teacher.

These personal characteristics of teachers were assessed by their administrators and the teachers themselves and it is shown in Table 1.

Table 1. Personal Characteristics of the Teachers as Described by the Administrators and Teachers Themselves

		Administrators		Teachers	
A good teacher.....		WM	VI	WM	VI
1.	Has the ability to bond with the students, to understand and resonate their feelings and emotions.	3.55	HM	3.40	MM
2.	Has a sense of humor to reduce barriers and lightens the atmosphere especially during heavy periods.	3.46	MM	3.39	MM
3.	Has an excellent presentation skill to create different teaching styles for diverse learners using positive attitudes toward them.	3.42	MM	3.27	MM
4.	Has influence on students by setting good examples for them to follow.	3.60	HM	3.41	MM
5.	Has respect for everyone to develop harmonious relationship with everybody.	3.75	HM	3.58	HM
6.	Has a positive mental attitude, can keep a smile and seek positives in every negative situation.	3.42	MM	3.44	MM
7.	Performs the duty of a teacher even under pressure or opposition	3.50	HM	3.52	HM
8.	Inspires students with his passion for education and his quest to provide students with the highest quality of education	3.62	HM	3.36	MM
9.	Creates a sense of community and belongingness inside the classroom and a welcoming environment for all students.	3.71	HM	3.52	HM
10.	Shows professionalism from personal appearance to organizational skills and preparedness for each day.	3.86	HM	3.56	HM
	Composite Mean	**3.59**	HM	**3.45**	MM

Legend: HM - Highly Manifested; MM - Moderately Manifested

Result showed that best among the personal characteristics of the teachers as assessed by the administrators and teachers themselves is the teachers' ability to show professionalism from personal appearance to organizational skills and preparedness for each day. This was exhibited by a weighted mean of 3.86 and 3.56 from the administrators and teachers respectively, verbally interpreted as highly manifested. Results tend to imply that as assessed by the two groups of respondent, they found that teachers were able to manifest utmost professionalism as displayed not only in their personal appearance but also in their organizational skills.

This finding was confirmed from the view of Orlando [14] who stressed that teachers should have exemplary professional skills whether she is speaking with an administrator, one of her students or a colleague. Further, she pointed out that while teaching is a gift that seems to come quite naturally for some, others have to work overtime to achieve great teacher status.

From the standpoint of the two groups of respondent it is also evident that the teachers have respect for everyone to develop harmonious relationship with everybody. This was revealed by the weighted mean of 3.75 and 3.58 from the administrators and teachers respectively, verbally interpreted as highly manifested. This could mean that from the perspective of the two groups of respondent, they found the teachers to be respectful and they were able to establish a healthy relationship with their colleagues. This finding was in lined with the belief of Miller[11] who reiterated that teachers should have the willingness to leave behind the comforts of individualism and isolation and embrace new norms of collegiality. He further reiterated that a great teacher respects students. In a great teacher's classroom, each person's ideas and opinions are valued. Students feel safe to express their feelings and learn to respect and listen to others. This teacher creates a welcoming learning environment for all students.

Part of the best attributes of the teachers as seen by the two groups of respondent is their ability to create a sense of community and belongingness inside the classroom and welcoming environment for all students. This was exposed by a weighted mean of 3.71 and 3.52 from the administrators and teachers respectively, verbally interpreted as highly manifested. From the standpoint of the two groups of respondent, they are certain that the Mathematics teachers were able to provide a welcoming environment to their students. These teachers attribute finds similarities in the concept of Joseph [7] who stressed that in the new school trend, teachers should provide a supportive and collaborative environment. In this small community, there are rules to follow and jobs to be done and each student is aware that he or she is an important, integral part of the group. A great teacher lets students know that they can depend on her.

On the other hand, in spite of the positive assessment of the two groups of respondent on the teacher's personal characteristics there are also attributes which are only rated moderately manifested, one of which is their ability to have excellent skills in presentation to create different teaching styles for diverse learners using positive attitudes toward them. This was exposed by a weighted mean of 3.42 and 3.27 from the administrators and teachers respectively, verbally interpreted as moderately manifested. Taking a deeper look at the assessment of the two groups, it seems that being one of the items on the bottom they are expecting more from the teachers. It could probably that from the standpoint of the two groups there is a need for the teachers to be creative in their teaching styles without sacrificing the positive attitude which is expected from them. This finding was supported by the findings of Balagtas et.al; [2] who found out in their study that in all levels their respondents strongly agree to the idea that 21st century teachers should encourage learners to freely express their ideas while optimizing time and available learning resources and observing established routines and procedures. The respondents clearly recognize one of the key roles that teachers play—as facilitator of learning. Gleaning from the data, the 21st century teachers are expected to be skillful at creating a truly learner-centered learning environment, one that is non-threatening and able to get learners hooked at achieving despite apparent academic diversities.

Professional Characteristics

Professional attributes refer to those competencies expressed in terms of roles expected of a teacher that define standards for teachers observed in the Philippines. These traits as confirmed by Balagtas et.al; [2] reflect teacher's roles as organizer, communicator, mentor, expert, motivator, classroom manager, evaluator, decision maker, leader, reflective practitioner, adviser, action researcher, agent of

change, learner, community member, and role model. Result is shown in Table 2.

Table 2. Professional Attributes of the Teachers as Described by the Administrators and Teachers Themselves

A professional teacher...	Administrators		Teachers	
	WM	VI	WM	VI
1. Acts immediately on needs and requests in accordance with the prescribed rules and regulations and accepted norms of conduct	3.48	MM	3.34	MM
2. Renders service above regular functions and even beyond regular time.	3.52	HM	3.42	MM
3. Starts actions and projects, performs tasks without being told and supervised.	3.41	MM	3.25	MM
4. Shows politeness and thoughtfulness behaviour toward clientele, public and superior-subordinate relationship into work conditions.	3.58	HM	3.51	MM
5. Develops harmonious human relations to everyone in the workplace	3.71	HM	3.48	MM
6. Make learning highly informative, interesting and challenging for the average learners, mentally challenged learners, encouraging, captivating and fun.	3.52	HM	3.37	MM
7. Improves himself/herself through continuing professional growth and development.	3.64	HM	3.33	MM
8. Inspires students with his passion for education and his quest to provide students with highest quality of education	3.58	HM	3.44	MM
9. Creates a sense of community and belongingness inside the classroom and a welcoming environment for all students.	3.47	MM	3.42	MM
10. Assesses teaching throughout the lessons and find ways to present material to make sure that every student understands key concepts.	3.53	HM	3.36	MM
Composite Mean	**3.56**	**HM**	**3.42**	**MM**

HM- Highly Manifested MM - Moderately Manifested

Best among the professional characteristics of the teachers as assessed by the two groups of respondent is the teachers' ability to develop harmonious human relations to everyone in the workplace. This was revealed by a weighted mean of 3.71 and 3.48 from the administrators and teachers respectively, verbally interpreted as highly manifested. From the point of view of the two groups of respondent, they found that the teachers' are amicable and they believed that these teachers are living with what is expected from a professional teacher as expressed in Section 7, Article 3 in the Code of Ethics of Professional Teachers that "*Every teacher shall maintain harmonious and pleasant personal and official relations with other professionals, with government officials, and with the people, individually or collectively*"[6].

Next among the top professional attributes of the Mathematics teachers is their ability to show politeness and thoughtfulness toward clientele, public and superior-subordinate relationship into work conditions. This was evident by a weighted mean of 3.58 and 3.51 from administrators and teachers respectively, verbally interpreted as highly manifested. From the two groups of respondent, they believed that the teachers were able to demonstrate values like honesty, truthfulness, loyalty, punctuality, cleanliness, dedication, and affection. This finding strengthens the belief of Ledesma[9] that teachers at all times must stand as a model not only for their students but to everyone so as to provide a lasting and inspiring image. To unfold this attributes, teachers must at all times be motivated, reason why school principals need to be mindful of the teachers fate in the direction of motivation on the context of Maslow's theory of motivation [10].

On the bottom from the assessment of two groups of respondent is the teachers' ability to start actions and projects, performs tasks without being told and supervised which was shown by a weighted mean of 3.41 and 3.25 from the administrators and teachers respectively, verbally interpreted as moderately manifested. This result could probably be attributed to the expectation of the two groups from the teachers to have the initiative in carrying the teaching tasks. Probably they expect the teachers to exhibit not just initiative but also resourcefulness. This findings find connections from Orlando[14] who reiterated that teacher's attributes equates with strong sensitivity to make everything spec and span which unfortunately is not observable to everyone. In relation, it also finds connections to the expectancy valence theory of Vroom [16] on the context that a particular action will be followed by a particular outcome.

Extent of Management Support to Mathematics Instruction

Both the administrators and teachers also assessed the extent of management support being given to

Mathematics instruction. The result is exhibited in Table 3.

Table 3. Assessment on the Extent of Management Support to Mathematics Instruction

Management Support		Administrators		Teachers	
		WM	VI	WM	VI
1.	Sends teachers to seminars, trainings, and workshop to gain new insights about Mathematics instruction.	3.0	ME	3.10	ME
2.	Purchases instructional materials for localization and contextualization.	2.76	ME	2.95	ME
3.	Requests funds from the LSB for supplementary materials	2.38	LE	2.43	LE
4.	Encourage and support teachers to enrol in related Graduate School Courses	3.08	ME	3.16	ME
5.	Allocates funds from the MOOE for material reproduction	2.70	ME	2.82	ME
6.	Conducts inventory of learning materials to monitor its availability	2.80	ME	2.87	ME
7.	Raises funds to acquire additional learning kits and materials.	2.73	ME	2.78	ME
8.	Subscribes educational journals in the different areas of Mathematics to keep abreast of modern teaching strategies	2.77	ME	2.63	ME
9.	Solicits funds from the alumni to support the teacher's needs.	2.53	ME	2.51	ME
10.	Installs internet connection for computer with Mathematics software and applications	2.86	ME	2.99	ME
11.	Acquires equipments like projector and computers for instructional purposes	2.82	ME	2.65	ME
12.	Enhances School Improvement Plan with emphasis on the needs related to Mathematics instructional materials	2.98	ME	2.99	ME
13.	Encourage and give support to teachers to engaged themselves in research and extension services	2.50	ME	2.38	LE
14.	Plans, arranges and conducts School-based training and workshop with emphasis on the preparations of Mathematics instructional materials.	2.95	ME	3.07	ME
15.	Support income generating projects to innovate Mathematics instructional materials.	2.98	ME	3.0	ME
Composite Mean		**2.79**	**ME**	**2.82**	**ME**

ME-Moderate Extent ***LE-Least Extent***

Among the top most management support being provided by the administrators for Mathematics instruction as assessed by the two groups of respondent is the administrator's effort to encourage and support the teachers to enroll in related graduate school courses. This was revealed by a weighted mean of 3.08 and 3.16 from the administrators and teacher respectively, verbally interpreted as supported to a moderate extent. Result showed that both administrators and teachers acknowledged the fact that the administrators are at least supportive of these endeavor.

These findings can be attributed to the fact that there are some teachers who instead of being encouraged were figuratively discouraged to enroll in related graduate school courses. It was revealed during informal interview that the administrators are willing to adjust the schedule of the teachers to give them time to enroll in related graduate school courses but time and circumstances did not permit them. There are schools that lack sufficient number of teachers to handle the subject and they were forced to handle more classes than intended, leaving them tired and exhausted to handle weekend graduate school courses. This results is not parallel to what Onuma[13] has envisioned about principals who according to him should provide management support for teachers' work load and provide for teachers welfare, supportive supervision, organizational career planning and professional growth.

Further, it was revealed that given the chance the administrators send teachers to seminars, trainings, and workshop to gain new insights about Mathematics instruction as shown by a weighted mean of 3.0 and 3.10 from the administrators and teachers respectively, verbally interpreted as supported to a moderate extent. This finding may imply that the administrators are not giving full support to the teacher's endeavors to ensure the effective delivery of Mathematics instruction. Nevertheless, the moderate support being given by the administrator may also imply that the administrators are trying to adhere to the Code of Ethics for Professional Teachers. As stipulated in Section 3, Article 7, "*School officials shall encourage and attend the professional growth of all teachers under them such as recommending them for promotion, giving them due recognition for meritorious performance, and allowing them to participate in conferences in training programs"*[6].

This finding is also in relation to Expectancy Valence Theory of Vroom [16] which places emphasis in understanding the individual's goals and creating linkage between effort and performance, between performance and reward, and reward and individual goal's satisfaction.

Further, according to Onuma[13], management support by school principals are essential for teachers' performance in building sufficiently motivated and effective teachers. Act of giving assistance, encouragement and stimulation to teachers by principals enhance teachers' performance towards the achievement of the objectives of the school system. Imperatively, teachers who are supported by their principals perform maximally. Hence, teacher performance can be taken synonymous with teachers' commitment and is a valid construct in school growth.

It was also evident that the administrators are moderately supportive of the Mathematics instruction as shown in the assessment of the two groups of respondent on the effort of the administrators to plan, arrange and conduct school-based training and workshop with emphasis on the preparations of Mathematics instructional materials as shown by a weighted mean of 2.95 and 3.07 from the administrators and teachers respectively, verbally interpreted as supported to a moderate extent. This finding tends to imply the effort of the administrators to support the enhancement of Mathematics instruction.

During interview, it was revealed that the administrators initiate training workshops at least annually to plan and prepare varied instructional materials which include teachers guide, student's workbook, modules, teacher training materials, assessment materials, and supplementary materials. This finding validates that the administrators adheres to the contention of Bautista[3] that management initiative must be anchored to the mandate of K to 12 Curriculum of employing the use of learning packages as instructional materials. He pointed out that the development of several types of instructional materials is one of the major steps of each curriculum planning and development procedures. Though textbook is widely used instructional materials, it is found that different type of instructional materials are now being used to achieve learning outcomes or to improve quality education and for the benefit of both the teachers and the students.

Furthermore, it was also revealed during the interview that school-based training and workshop with emphasis on the preparations of Mathematics instructional materials were not religiously done every year. It could probably be one of the reasons why the particular item was only rated as supported to a moderate extent. According to Adebola, [6] professional growth or capacity building encourages staff development in the form of workshops, seminars as well as in-service training all put together encouraged teachers to be better equipped for effective delivery and performance in school. In this regard, principal should provide teachers with needed management supports to effectively function in their schools [5].

Moreover, there are more management efforts which were under rated by the two groups of respondent, one of which is the way the administrators encourage and give support to teachers to engage in research and extension services which was exhibited by a weighted mean of 2.50 verbally interpreted as supported to a moderate extent from the administrators and 2.38 verbally interpreted as supported to a least extent from teachers. This finding could imply that research and extension activities are not given top priority by administrators. It could also be that these areas are less explored by both the teachers and the administrators.

Based on interview, very few teachers and administrators conduct researches related to their field of specialization. They only do research as part of requirements in the graduate studies. No research is being conducted to link the gap between what is happening in the Mathematics instruction and what should be happening in the Mathematics instruction. In this light, annual school plan to guide its activities not only for instruction but also for research, extension, and production can be considered.

In summary, result of the study on the extent of support being given by the administrators to ensure effective implementation of Mathematics instruction in the K to 12 Program should not be taken sitting down. According to Castler[5] improvement of schools are possible when the reform effort is well thought out, when teachers are active agents in the change process, when there are sufficient resources and time to support reform and when supportive leadership is present. In this regard, principal should provide teachers with needed management supports to effectively function in their schools.

Difference on the Response of the Administrators and Teachers on the Extent of Management Support to Mathematics Instruction

Differences on the responses of administrators and Mathematics teachers on the extent of management support to Mathematics instruction were also taken into considerations and it is shown in Table 4.

Table 4. Difference on the Respondent's Assessment on the Extent of Management Support being Given to Mathematics Instructions

Item	Computed t-value	p-value	Decision on H_0	VI
Administrators and Teachers	-1.199	.250	Failed to Reject	NS

Legend: NS-Not Significant

It was revealed that there is no significant difference on the assessment of two groups of respondent as shown by the t-test value of -1.199 and a probability value of .250 which is greater than .05 level of significance. This result could mean that both the administrators and teachers believed that the management supported the Mathematics instruction under the K to 12 Program to a moderate extent.

It could probably mean, that both groups at least acknowledged the efforts of the administrators to address upon those tasks that concerns with the smooth operation of the schools not only in terms of personnel development but also in the upgrade of their facilities and equipment. It seems that both groups are unison on the context that the administrators must walk an extra mile to address the issues specifically on the teacher's professional growth by giving teacher's the chance to engage themselves in various continuing education programs which is in line with their field of expertise. Likewise, administrators should also acknowledge the need for the different learning resources in the delivery of instructions. In today's modern way of teaching the most commonly used are the high technological tools that include computer set, video and recording materials, daily light projector, television, E-learning set etc.

According to Onuma [13], teachers who are supported by their principals perform maximally. Hence, teacher performance can be taken synonymous with teachers' commitment and is a valid construct in school growth. In addition, Castler [5] implied that improvements of schools are possible when the reform effort is well thought out, when teachers are active agents in the change process and when supportive leadership is present

Proposed Management Plan for the Successful Implementation of Mathematics Instruction

From all indications it can be said that supportive school administrators played a very important and crucial role in the success of implementation of mathematics instruction under the K to 12 Program. This claimed was supported in the findings of Bush[5], Castler [5], Onuma[13], and Vroom [16] on the increasing recognition that schools require effective leaders and managers if they are to provide the best possible education outcomes.

The analysis and data gathered from the instruments revealed that things seems to be working in place about the essential components of having effective delivery of Mathematics instruction; from the personal and professional characteristics of the teachers who are the direct provider of knowledge, from the curriculum and its content and to the support being given by the management or the school administrators. On the other hand, it was also revealed that there are things to be worked out in as far as management support to the school is concerned, these results should not be taken sitting down. Instead, they can capitalize on these results to make some adjustments on the existing plan to aim for the best.

Thus, it shed light to the proposed management plan that can be done for a more effective and efficient delivery of Mathematics instructions under the K to 12 Program.

Management Plan that Could be Done for the Successful Implementation of the K to 12 Curriculum

- Have a framework defining responsibilities and accountabilities of all stakeholders
- Consider help from experts to define the information needs of schools education program and develop appropriate management information system
- The role and duties of the supervisor and principal should be reviewed and should be placed in the Supervisors/Principals Manual
- School management framework should allow for participation in decision making to an appropriate degree according to formal procedures by all stakeholders which includes all teaching staff,

principal, parents, students, and communities among others.

- Each school should have authority to decide its own spending pattern aligned with the general policies and its own define needs.
- While government grants should be sufficient for a school to provide an acceptable standards of education, schools should have more flexibility to tap sources of non – government funding to support the school operation
- There must be an annual school plan to guide its activities in the previous year and detailing school performance in a number of key areas. Annual plan must also include budget not only for instruction but also for research, extension, and production.
- Each school should prepare an annual school profile concerning its activities in the previous year and detailing school performance in a number of key areas.

CONCLUSION AND RECOMMENDATION

Mathematics teachers highly manifested the personal and professional characteristics as assessed by the administrators. On the other hand, the Mathematics teachers themselves believed that it is only moderately manifested on them. Applying Maslow's Theory of Motivation [10] and Expectancy Valence Theory of Vroom, [16] the implication is that teachers develop themselves invariable, students are developed as well.

The management supported the Mathematics instruction to a moderate extent. Imperatively, teachers who are supported by their principals perform maximally. Hence, teacher performance can be taken synonymous with teachers' commitment and is a valid construct in school growth [13].

There is no significant difference on the assessment of administrators and Mathematics teacher on the extent of management support being given to Mathematics instruction by the respective administrators. As implied by Castler[5] improvement of schools are possible when the reform effort is well thought out, when teachers are active agents in the change process and when supportive leadership is present.

The proposed management plan is believed to help deliver a more effective and efficient Mathematics instructions in the Public Secondary Schools under the K to 12 Curriculum. These could only be possible if explicit management support to involve all stakeholders and efforts to motivate, empower, and give autonomy to every school will be in place.

It is recommended that the personal and professional Characteristics of the teachers must be enhanced to meet the requirements of the 21st century teachers. Management must continue to be supportive to ensure the effective delivery of Mathematics instruction. Since the study is limited only to the support being given by the management to Mathematics instruction, future researchers may also include management support to areas other than instruction like research, extension, and production. That the proposed management plan be reviewed and be considered for implementation.

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