



TEACHING APPROACH IN SCIENCE, THEIR USE AND EFFECTIVENESS ON MOST ESSENTIAL LEARNING COMPETENCIES (MELCS) DISTRIBUTION

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ABSTRACT

This research focused on use and effectiveness of teaching approach in science with regards to Most Essential Learning Competencies (MELCs) distribution in teaching Science. The descriptive method of research was used in this study to gather the necessary data and information on the Teaching Approach in Science, their Use and Effectiveness on Most Essential Learning Competencies (MELCs) Distribution. The goal of the researchers is to know the level of teaching approach in terms of enhanced students' learning experience, improved instructional management strategies, strengthened teaching standard, plan for variety of instructional strategies and level of MELCs distribution with regards to content standards, performance standards, topic sequence, topic time allotment, topic content and topic level of difficulty. The purpose of this study was to examine the significant effect of teaching approach to MELCs distribution. The information obtained by completing this study will be beneficial to students, teachers, schools and DepEd officials. The results demonstrated that teaching approach have significant effect on MELCs or Most Essential Learning Competencies distribution in teaching science. The DepEd teachers are the recipients of this study

INDEX TERMS— *enhanced students' learning experience, improved instructional management strategies, strengthened teaching standard, plan for variety of instructional strategies, content standards, performance standards*

1 INTRODUCTION

Education encompasses both the teaching and learning of knowledge, proper conduct and technical competency that is why ensuring the welfare of more than 27 million learners in the basic education alone requires indomitable commitment. Each person has different level of understanding and learning but education sharpens and enhances them. With the learning communities being concerned for the well-being of young people for whom they are responsible, education can never be undermined. With these, UNESCO reiterates its stand that 'Education cannot wait. If learning stops, we will lose human capital.' Thus, meeting the needs of education of the most vulnerable populations in these times is essential (UNESCO, 2017).

The Department of Education echoes UNESCO's belief that educational quality, access, and system strengthening cannot be compromised at any given time (UNESCO, 2017) and doing the opposite will negatively affect human capital. Thus, the Department of Education affirms its commitment in sustaining the delivery of quality, accessible, relevant and liberating Philippine basic education services. It will continue to strive to produce holistic Filipino learners with 21st century skills. Consequently, the Bureau of Curriculum Development ensures that learning standards are relevant and flexible to address the complex, disruptive, volatile, and ambiguous impact of COVID-19 in the Philippines particularly in the basic education sector.

Working on the said premise, the Department hereby releases the Most Essential Learning Competencies (MELCs) to be

used nationwide by field implementers and private schools for SY 2020-2021 only. MELCS will enable the department to focus instructions to the most essential competencies that students must acquire. It can also enlighten the burden of converting classroom-oriented learning resources into learning resources adapted to distance learning. Furthermore, the MELCS intend to assist the schools in navigating the limited number of school days as they employ multiple delivery schemes by providing them ample instructional space.

In line with this, as these may serve as a guide to teachers as they address the instructional needs of learners, change and improvement in teaching approach might contribute to achieve the objectives of MELC. A number of teachers might have difficulties in deciding what teaching approach should be used and applied in each lesson to cope up with the timeline given for topic as indicated in the MELC. As such, teachers are trying to find what is the best teaching practices to apply in the teaching-learning process in order to abide with the MELCs guidelines.

As teachers understand and know the best approaches to teach subject content, it is imperative to know what among these practices would be the most effective in relation to MELCS.

In line with the above discussion, the researcher wants to find out the use and effectiveness of teaching practices in science in line with Most Essential Learning Competencies (MELCs) distribution of science teachers in DepEd Quezon First Congressional District Secondary Cluster 3. This would be of great opportunity for the



researcher to implement the study at a place that is readily accessible before implementing the results and recommendations of this study to another district. At the same time, the result of this study may give additional information and data on which teaching practices is most applicable with regards to (MELCs) distribution.

2 STATEMENT OF THE PROBLEM

The aim of this research is to determine the use and effectiveness of teaching approach in science with regards to of MELCs distribution in teaching Science. If findings and results of this study will show that the variables specified in the research paradigm significantly affect the students, teaching approach will be proven effective to MELCs distribution.

Specifically, this study aims to know the the level of teaching approach in terms of enhanced students' learning experience, improved instructional management strategies, strengthened teaching standard, plan for variety of instructional strategies, the level of MELCs distribution with regards to content standards, performance standards, topic sequence, topic time allotment, topic content and topic level of difficulty and to know if there is a significant effect of teaching approach to MELCs distribution.

3. METHODOLOGY

The descriptive research was used in this research. According to Sevilla (2014), is concerned with conditions of relationship that exist, practices that prevail, beliefs and processes that are going on, effects that are being felt, or trends that are developing. The process of descriptive survey research goes beyond mere gathering and tabulation of data. It involves an element of interpretation of the meaning or significance of what is being described.

The instrument used in the collection of the data was survey questionnaire-checklist. The questionnaire is a research-made instrument devised which focused to determine the use and effectiveness of various teaching approach to MELCs distribution in teaching science. In the mentioned questionnaire, a five-point rating scale was used to describe the level of teaching approach and MELCs distribution.

The survey questionnaires were divided into two parts. Part 1 is the teaching approach in terms of enhanced students' learning experience, improved instructional management strategies, strengthened teaching standard, plan for variety of instructional strategies; Part 2 is the MELCs distribution with regards to content standards, performance standards, topic sequence, topic time allotment, topic content and topic level of difficulty.

For problem 1 & 2, the weighted mean and standard deviation was used to of parental involvement in student's academic achievement, attitudes and behavior.

To find if there is a significant effect between the variables a regression analysis was used.

4. LITERATURE REVIEW

According to [1], teachers can nurture the creative side of the students by conducting special classroom activities related to the curriculum. They can utilize various tools to stimulate students' creativity including interesting games, visual exercises, power point presentations, images, and videos can excite students' minds and attract their interest. Teachers should identify every student's inventive abilities and encourage creative contributions. Bringing crea-

tivity in every subject and giving students the freedom to explore can work wonders.

Standards for teachers can be classified into two large categories according to their degree of specificity. Generic standards describe good teaching practices in general terms without detailing how, in practice, these are to be demonstrated in the different teaching disciplines, distinct student grade levels or stages of professional development [2].

The objective of using improved instructional management strategies beyond subject comprehension is to create students who are independent strategic learners. The hope is, with time and practice, students will be able to select the right strategies on their own and use them effectively to complete tasks [3].

Improving teacher quality is at the heart of our national effort to achieve excellence in the classroom. This comes at a time when the very structure of education is going through a profound change. With knowledge all around us, available anytime and anywhere, the role of the teacher is going to be fundamentally transformed in the 21st century [4]

Successful students report that working with a course mentor is the key to their success [5] Course mentors are able to share tips on approaches, tools, and skills that can help students apply the content they are studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency.

DepEd's MELCs aims to address the country's education. In the eyes of the participants, the new MELCs are similar to the original curriculum guide, wherein it was compressed to focus on the competencies deemed important and could be taken up using the pandemic pedagogy. With this, it has become a problem for the teachers on how to deliver the different essential competencies prescribed every week [6].

Content standards articulate an essential core of knowledge and skills that students should master ensures that the education students receive is consistently strong across all of a state and that completion of high school has common meaning throughout the state [7]

Expectations for instruction, assessment, and student work are called Performance Standards. These incorporate Content Standards and define the level of work that demonstrates achievement of the standards. Performance standards isolate and identify skills needed for problem-solving, reasoning, communicating, and making connections with other information [8].

Teachers have varying practices and methods, which they use to get across to their classes. Some of these strategies are creating contents that are more effective than others depending on where you are implementing them [9].

Although the strength of us observed associations were weak, the level of content difficulty may be an important factor [10] to capture information related to their perception of topic difficulty, and demonstrates that student characteristics also influence capture behavior.

Helping children sequence also develops their scientific inquiry skills. In order to study or observe changes in something, students must follow along and record changes. The changes happen in a particular order, which kids can document by writing or drawing pictures [11].

Accordingly, [12] discussed that allocated time is the amount of time specified for an activity or events. In designing curriculum, we need to analyze the objective and content of the curriculum to be able to estimate the time requirements. And there are sev-



eral factors to be considered in determining time allotment that influence in the result or the outcome of the curriculum design. First is the importance of the subject, where the portion of classroom time spent teaching students' particular knowledge, concepts, and skills. Second is the Childs' ability or the capacity of the learner to understand instruction. Third is the grade level or the series of educational level. And last is the average number of days or the amount of time spent in school in a year.

5. DISCUSSION

Table 1. Level of Teaching Approach

Indicators	SD	Mean	Verbal Interpretation
Teaching Approach			
Enhanced Students' Learning Experience	0.645	4.27	Very high
Improved Instructional Management Strategies	0.603	4.44	Very high
Strengthened Teaching Standard	0.573	4.56	Very high
Plan for Variety of Instructional Strategies	0.565	4.39	Very high

The weighted mean of 4.27, 4.44, 4.56 and 4.39 with supported value of standard deviation 0.645, 0.603, 0.573 and 0.565 indicated that the students strongly agreed to the teaching approach in terms of Enhanced Students' Learning Experience, Improved Instructional Management Strategies, Strengthened Teaching Standard and Plan for Variety of Instructional Strategies, respectively, making it evident that teachers do encounter opportunities to apply their pedagogical knowledge and skills in practice to help students maximize the learning experience.

Table 2. Level of Most Essential Learning Competencies (MELCs) Distribution

Indicators	SD	Mean	Verbal Interpretation
MELCs Distribution			
Content Standards	0.592	4.37	Very high
Performance Standards	0.631	4.43	Very high
Topic Content	0.621	4.34	Very high
Topic Level of Difficulty	0.600	4.13	High
Topic Sequence	0.640	4.31	Very high
Topic Time Allotment	0.627	4.24	Very high

The weighted mean of 4.37, 4.43, 4.34, 4.31 and 4.24 with supported value of standard deviation 0.592, 0.631, 0.621, 0.640 and

0.627 indicated that the students strongly agreed to the Most Essential Learning Competencies (MELCs) Distribution with regards to Content Standards, Performance Standards, Topic Sequence, Topic Content and Topic Level of Difficulty, respectively, ensures that all students have the skills and knowledge necessary to succeed their academic endeavor.

On the other hand, the weighted mean of 4.13 and with supported value of standard deviation 0.600 indicated that the students agreed to the Most Essential Learning Competencies (MELCs) Distribution with regards to Topic Time Allotment as they have enough time to absorb all the information provided to them.

Table 3. Regression Analysis of Teaching Approach to the Most Essential Learning Competencies (MELCs) Distribution in Teaching Science

Teaching Practices in Science	Beta	t-value	p-value	Analysis
Content Standards	0.3411	2.853	0.0479	Significant
Performance Standards	0.3382	3.095	0.0033	Significant
Topic Sequence	-0.053	-0.291	0.7724	Not Significant
Topic Time Allotment	0.3611	2.016	0.0494	Significant
Topic Content	0.3493	2.801	0.0471	Significant
Topic Level of Difficulty	0.3585	2.709	0.0481	Significant

Adjusted R-Square: 0.5579
 F-value: 12.359
 Sig.: 0.0000

To find if there is a significant relationship between the variables a regression analysis was used the factor analysis revealed that among all the variables there was a significant and partially not significant verbal interpretation.

Results from table revealed that the teaching approach had no effect to the Most Essential Learning Competencies (MELCs) Distribution in teaching science. The beta coefficient indicates that for every standard deviation unit increase in Teaching Approach in Science, there is a corresponding unit increase in the Content Standards, Performance Standards, Topic Sequence, Topic Time Allotment, Topic Content and Topic Level of Difficulty. The t-value is significant for Performance Standards with supported p-value of less than 0.05 level of significance. This means that the teaching approach was influenced by the Most Essential Learning Competencies (MELCs) Distribution in teaching science.

6. CONCLUSION

In the light of the findings and analysis of the study, the following conclusions were drawn:

Based on the data, it is shown that there is "an effect of teaching practices to the Most Essential Learning Competencies (MELCs) Distribution in teaching science" except the Topic Sequence at 0.05 level of significance. It shows that the null hypothesis stating that "Is teaching approach not significantly affect the Most Essential Learn-



ing Competencies (MELCs) Distribution in teaching science” is rejected, it can infer that there is “a significant” effect between them.

7. RECOMMENDATION

In the light of the conclusions stated, the following recommendations were forwarded.

1. It may be recommended to identify and/or develop competencies that define the broader outcomes for every people in the school community taking into account the learning strategy the students are most comfortable with.
2. Fostering active and engaged inquiry through a project-based approach to the competencies was also recommended as a project that scaffolds learning for students but also embeds authentic assessments that allow them to demonstrate their growing knowledge and skills.
3. Collaboratively and regularly look at student work for evidence of proficiency in the competencies as this requires the use of a rubric to focus on what competencies students are demonstrating and how, by focusing on observation of evidence rather than interpretation into a grade.
4. Furthermore, this research could also be used in other schools to perceive how these schools react with the MELCs. A larger population would allow for a better generalization of the data.
5. Finally, feedbacks received should be take into consideration to determine the progress of the researchers in achieving their objectives. Shifting the study’s focus to interventions that rely on proactive approaches to resolve the issues will be a great follow-up for this study.

REFERENCES

1. Das, A. K. (2019, January 21). *Strategies to Enhance Effectiveness in Classroom Teaching*. Retrieved from The Knowledge Review website: <https://theknowledgereview.com/strategies-enhance-effectiveness-classroom-teaching/>
2. Nikam, S. J. (2015). *Teaching compulsory English course to large classes: Some observations*. *Language in India*, 16(11), 169-181.
3. Persaud, C. (2018). *Instructional Strategies: The Ultimate Guide*. Retrieved from Top Hat: Teaching Tips website: <https://tophat.com/blog/instructional-strategies/>
4. Ball, D.L. (2019). *Bridging practices intertwining content and pedagogy in teaching and learning to teach*. *Journal of Teacher Education*, 51(3), 241-247.
5. Alberta Learning. (2017). *Instructional Strategies What are instructional strategies?* Retrieved from <https://education.alberta.ca/media/482311/is.pdf>
6. Gonzales, K. P., & Lansangan, R. (2020). *SCIENCE TEACHERS’ VOICES IN THE NEW NORMAL TEACHING: A PHENOMENOLOGICAL STUDY*. *IOER INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL*, 2(3), 3–5. Retrieved from https://www.researchgate.net/profile/Kerwin-Paul-Gonzales/publication/344469808_SCIENCE_TEACHERS’_VOICES

_IN THE NEW NORMAL TEACHING A PHENOMENOLOGICAL STUDY

LINKS/5f7ac505458515b7cf679bf5/SCIENCE-TEACHERS-VOICES-IN-THE-NEW-NORMAL-TEACHING-A-PHENOMENOLOGICAL-STUDY.pdf

7. Kendall, J. S., & Marzano, R. J. (2017). *Content knowledge: A compendium of standards and benchmarks for K-12 education [On-line]*. Available: <http://www.mcrel.org/standards-benchmarks/>
8. Limjuco, P. (2017). *What is the Difference between Content Standards and Performance Standards?* Retrieved from Professional Learning Board website: <https://k12teacherstaffdevelopment.com/tlb/what-is-the-difference-between-content-standards-and-performance-standards/>
9. Llego, M. A. (2019, May 21). *Deped Order on Time Allotment per Learning Areas*. Retrieved March 6, 2021, from TeacherPH website: <https://www.teacherph.com/deped-order-on-time-allotment-per-learning-areas/#:~:text=The%20time%20allotment%20for%20each>
10. Newton, G., & McCunn, P. (2015). *Student perception of topic difficulty: Lecture capture in higher education*. *Australasian Journal of Educational Technology*, 31(3). <https://doi.org/10.14742/ajet.1681>
11. Aardema, V. (2016). *Teaching Sequence | LD Topics | LD OnLine*. Retrieved March 6, 2021, from [www.ldonline.org](http://www.ldonline.org/article/39186/) website: <http://www.ldonline.org/article/39186/>
12. Biggs, J. B. (2017). *Approaches to the Enhancement of Tertiary Teaching*. *Higher Education Research & Development*, 8(1), 7–25. <https://doi.org/10.1080/0729436890080102>