



Republic of the Philippines
Department of Education
TEACHER EDUCATION COUNCIL

MODULE

2

PHILIPPINE PROFESSIONAL STANDARDS FOR TEACHERS

PPST

Resource Package

1.4.2 USE A RANGE OF TEACHING STRATEGIES THAT ENHANCE LEARNER ACHIEVEMENT IN LITERACY AND NUMERACY SKILLS





Republic of the Philippines
Department of Education
TEACHER EDUCATION COUNCIL

MODULE

2

PHILIPPINE PROFESSIONAL STANDARDS FOR TEACHERS

PPST

Resource Package

1.4.2 USE A RANGE OF TEACHING STRATEGIES THAT ENHANCE LEARNER ACHIEVEMENT IN LITERACY AND NUMERACY SKILLS



INTRODUCTION TO TEACHER RESOURCE PACKAGE

*Hello, dear Teacher!
Welcome to this Resource Package.*



I am Teacher Jen!

We are members of your support group. Together with your principal, master teacher, and co-teachers, we are pleased to be your guides and companions as you walk through the modules.

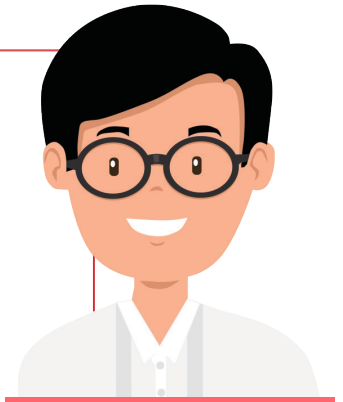
Are you ready?

We begin by letting you know how the journey started for us in putting together this resource package.

In August 2017, Department of Education Secretary Leonor Briones signed the Philippine Professional Standards for Teachers (PPST) into policy through DepEd Order No. 42, S. 2017. The policy states, among others, that the PPST “shall be used as a basis for all learning and development programs for teachers.”

The Department of Education is committed to supporting your continuing professional development. This resource package hopes to contribute to this commitment.

As a teacher, understanding the PPST is crucial in order for you to grow and flourish in your profession. The PPST identifies what you are expected to know, be able to do, and value in your profession.



And I am Teacher Mike!

These modules are standalone sections that you can select based on your needs and interests. This means that you can choose and read any module that is most relevant to you. You can take your time in familiarizing yourself with any one module with no pressure to finish reading all 12.

This resource package:

- serves as your guidebook towards becoming better acquainted with the PPST;
- comprises 12 modules corresponding to the 12 indicators that are aligned with the Results-based Performance Management System (RPMS); and
- contains illustrative and instructive information that you will find realistic, sensible and workable and can help you achieve the target indicators across curriculum teaching areas and key stages of learners' education.

We are happy to say that this resource package has been created and compiled by teachers in support of other teachers.

You will find the materials here useful if you:

- reflect on your own classroom practices, and ensure that your teaching practices are aligned with the indicators;
- want to mentor beginning teachers so they become better in their practice;
- are a part of a group of teachers who need materials for your school-based Learning Action Cell (LAC) sessions in order to (i) learn more about the PPST and (ii) innovate on practices using the samples in the resource material as guide; and
- want to develop or expand the current work by (i) providing more examples of practices or (ii) working on other career stages or indicators other than the 12 presented in this package.

***If learning is your passion,
this resource package is for you.***





What can you expect to find in each module?

You will discover that each module discusses a specific indicator, defines its key concepts and provides relevant illustrations of practice that may help you understand and attain the indicator.

The modules explore the following indicators:

MODULE 1

1.1.2 Apply knowledge of content within and across curriculum teaching areas.

MODULE 2

1.4.2 Use a range of teaching strategies that enhance learner achievement in literacy and numeracy skills.

MODULE 3

1.5.2 Apply a range of teaching strategies to develop critical and creative thinking, as well as other higher-order thinking skills.

MODULE 4

2.3.2 Manage classroom structure to engage learners, individually or in groups, in meaningful exploration, discovery and hands-on activities within a range of physical learning environments.

MODULE 5

2.6.2 Manage learner behavior constructively by applying positive and non-violent discipline to ensure learning-focused environments.

MODULE 6

3.1.2 Use differentiated, developmentally appropriate learning experiences to address learners' gender, needs, strengths, interests and experiences.

MODULE 7

4.1.2 Plan, manage and implement developmentally sequenced teaching and learning processes to meet curriculum requirements through various teaching contexts.

MODULE 8

4.4.2 Participate in collegial discussions that use teacher and learner feedback to enrich teaching practice.

MODULE 9

4.5.2 Select, develop, organize and use appropriate teaching and learning resources, including ICT, to address learning goals.

MODULE 10

5.1.2 Design, select, organize and use diagnostic, formative and summative assessment strategies consistent with curriculum requirements.

MODULE 11

5.2.2 Monitor and evaluate learner progress and achievement using learner attainment data.

MODULE 12

5.4.2 Communicate promptly and clearly the learners' needs, progress and achievement to key stakeholders, including parents/guardians.

PART OF THE MODULES



The module contains the following parts:



OVERVIEW introduces you to the indicator and why you need to achieve the indicator;



SELF-REFLECTION allows you to reflect on your knowledge, skills and attitude related to the indicator;



KEY CONCEPTS defines key concepts pertinent to the indicator;



SUPPORT GROUP allows you to consult and collaborate with our teacher-friends who will provide suggestions on how to improve your current practice;



ILLUSTRATIONS OF PRACTICE walks you through sample illustrations of specific teaching practices that show how the Standards are put into action;



PROFESSIONAL DEVELOPMENT PLAN helps you identify your strengths and development needs and plans for specific action for professional development; and

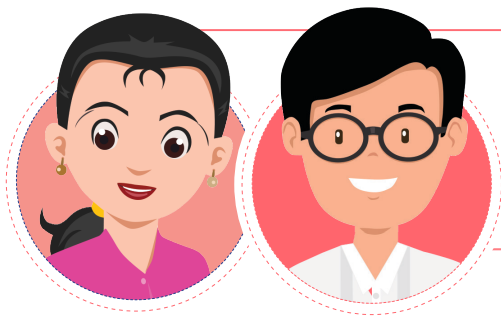


RESOURCE LIBRARY provides you with resources (which may include bibliography, forms, templates, appendices and links) that can help you further understand the indicator.

Each module takes you through a journey of exploration and discovery, while you learn more about the indicator and you apply it in your teaching context.

We encourage you to actively engage with the text as you read through the module.

We hope you find the information, materials and resources in this package helpful as you engage with the Philippine Professional Standards for Teachers towards your professional development.

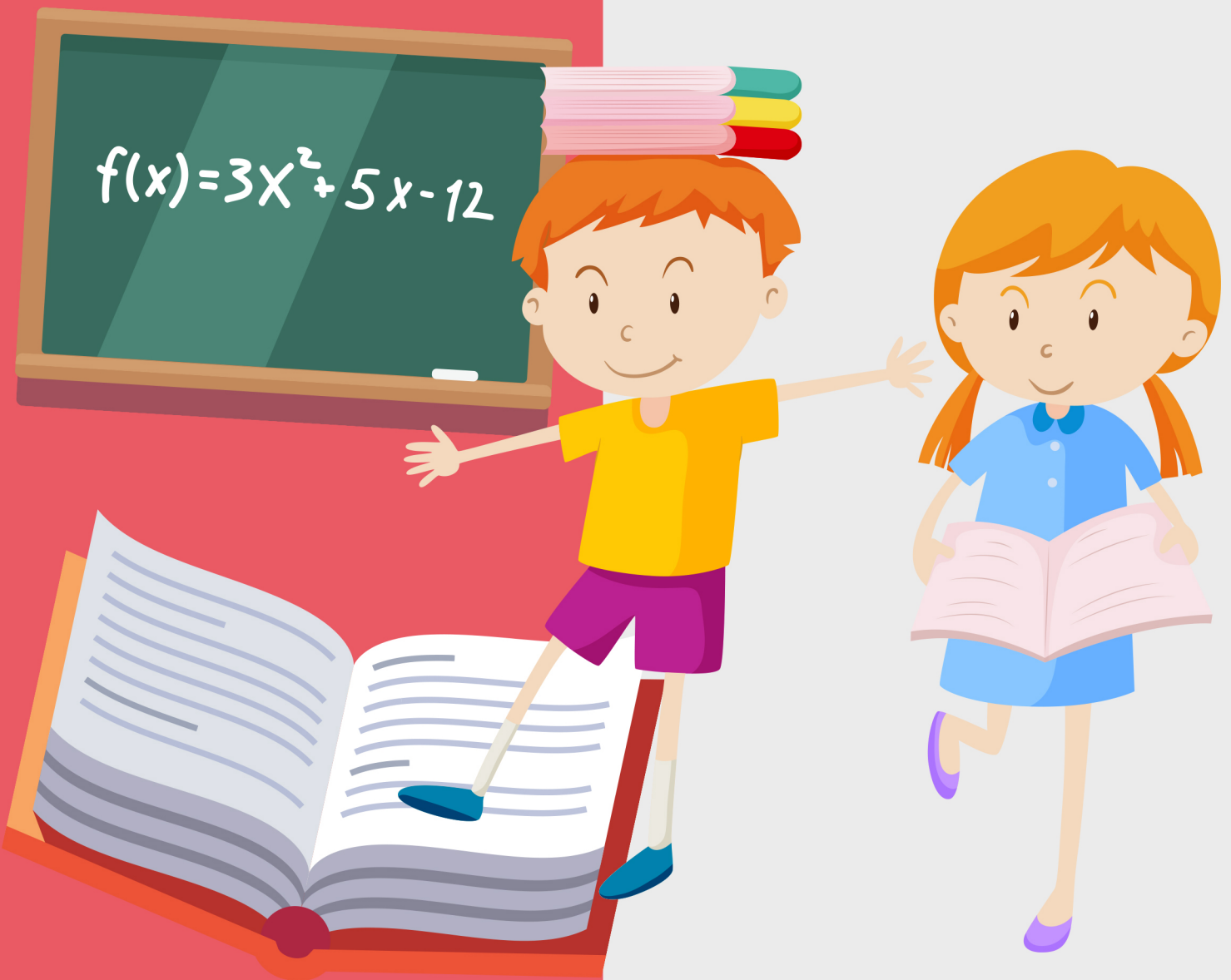


We, Teacher Jen and Teacher Mike, will be with you every step of the way.

Have a happy journey.



$$f(x) = 3x^2 + 5x - 12$$



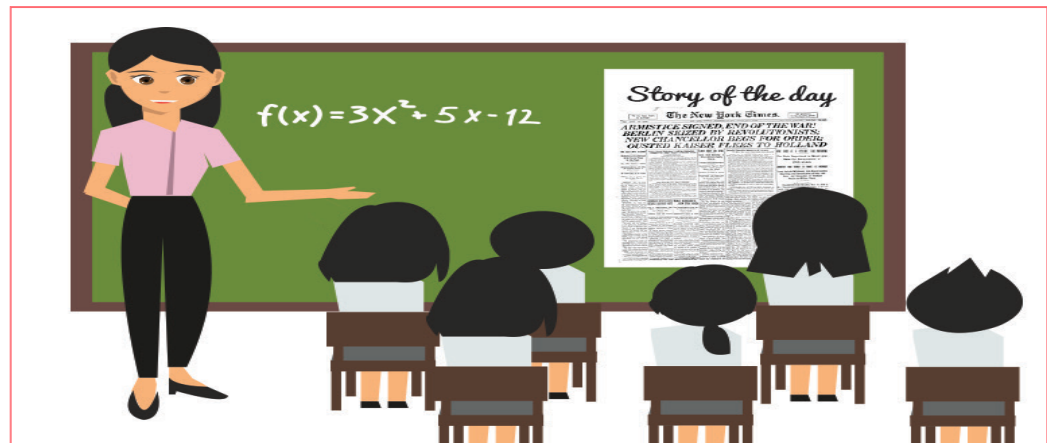
USE A RANGE OF TEACHING STRATEGIES THAT ENHANCE LEARNER ACHIEVEMENT IN LITERACY AND NUMERACY SKILLS

CONTENTS

- ii** INTRODUCTION
- 2** OVERVIEW
- 3** KEY CONCEPTS
- 4** SELF-REFLECTION
- 5** SUPPORT GROUP
 - Probing
 - Suggestions for Improvement
- 9** ILLUSTRATIONS OF PRACTICE
 - Illustration of Practice No. 1: LITERACY ACROSS CURRICULUM AREAS
 - Illustration of Practice No. 2: NUMERACY ACROSS CURRICULUM AREAS
 - Illustration of Practice No. 3: NUMERACY AND LITERACY IN CLASSROOM INSTRUCTION
- 20** PROFESSIONAL DEVELOPMENT PLAN
- 21** RESOURCE LIBRARY
 - Annotated Bibliography
- 22** ACKNOWLEDGEMENTS



Hello! I am Teacher Mike and with me is Teacher Jen. Welcome to Module 2.



Look at the illustration above. As teachers, central to our role is to build a strong foundation in literacy and numeracy among learners, and strengthen their ability to engage in education, reach their potential and participate fully in the community.

Literacy and numeracy skills are crucial for accessing the broader curriculum as they are used in many aspects of our lives. Obtaining an acceptable level of literacy and numeracy can greatly enhance learners' achievement because they are used in many aspects of their lives. Workplace numeracy, literacy and employability skills are often used in conjunction with one another. These required skills often overlap and are necessary for any task.

In this module, Teacher Jen and I will introduce you to a range of teaching strategies that promote literacy and numeracy and how becoming literate and numerate expand the learners' opportunities to access wider understandings.

We will also help you examine the knowledge and skills that all teachers, regardless of learning area and grade level, need to understand in order to help learners gain these fundamental skills necessary to achieve success in learning and in life.

In this module, we will focus on:



STRAND: Strategies for promoting literacy and numeracy



INDICATOR: 1.4.2 Use a range of teaching strategies that enhance learner achievement in literacy and numeracy skills



KEY CONCEPTS



Understanding the following key concepts facilitates deeper appreciation of the indicator. So, let us now acquaint ourselves with literacy and numeracy concepts.



LITERACY. This refers to the capability one acquires in order to read, understand, and construct textual material. This ability is useful in regular academic and non-academic situations and contexts within the school community and in different occupational areas. Literacy is not confined to merely learning to read and write; it also encompasses a range of more complex skills including the ability to apprehend ideas and concepts.

NUMERACY. This refers to the ability to understand and use mathematical knowledge for calculating, problem solving, and interpreting information in order to arrive at educated and well-informed decisions. Numeracy is an important skill for learners to master to help them prepare for life beyond the school and within the workplace and greater community.

TEACHING STRATEGIES. These refer to techniques, practices, approaches, and systems teachers employ in their classroom practice to advance student learning.

LEARNER ACHIEVEMENT. This refers to the realization by a learner of academic material or content knowledge within a given period. Within a given period, teachers have a certain amount of academic material they need to teach and learners need to learn. Learner achievement increases when teachers provide quality teaching aligned with set standards.



SELF-REFLECTION



This time, let us reflect on our current practice regarding the use of a range of teaching strategies that enhance learner achievement in literacy and numeracy skills.

Considering the key concepts, I have written down my reflections.



KNOWLEDGE

As a Proficient Teacher, I know...

... a range of teaching strategies to enhance the learner achievement in literacy and numeracy skills.

SKILLS

As a Proficient Teacher, I do...

... use a range of teaching strategies to enhance learner achievement in literacy and numeracy skills.

ATTITUDES

As a Proficient Teacher, I feel...

...that learners learn best and achieve more when their literacy and numeracy basics are well established.



Good reflection, Mike! Now, it is your turn to reflect on your knowledge, skills and attitudes in relation to the indicator. You may write it in the boxes below.



KNOWLEDGE

As a Proficient Teacher, I know...

Blank writing area for Knowledge reflection with horizontal lines.

SKILLS

As a Proficient Teacher, I do...

Blank writing area for Skills reflection with horizontal lines.

ATTITUDES

As a Proficient Teacher, I feel...

Blank writing area for Attitudes reflection with horizontal lines.



SUPPORT GROUP



Hi there! Once again, this is Mike. How's everything going? I hope that you are getting the rationale behind this Module.

I welcome you now to our Support Group, where we can help you examine the knowledge and skills that all teachers, regardless of learning area and grade level, need to understand in order to help learners gain these fundamental skills necessary to achieve success in learning and in life.

Before we proceed, let us read and reflect on this excerpt from the United Nations Relief and Works Agency (2013) for us to be reminded of our roles as teachers.



"As soon as a child is born, he or she begins to 'read' the world, to make sense of what he or she sees, hears and does, over time. Parents, siblings and the wider family help the child become involved in the community and culture, and learn different ways of communicating. This is the starting point of the development of literacy skills. A strong foundation in literacy takes time to build; it requires exposure to listening, speaking, reading and writing.

Many young pupils may lack exposure to preschool education and a culture of reading and storytelling at home. Therefore, the role of the elementary school teacher is crucial in making sure possible gaps in the development of literacy skills are compensated for during the first years of schooling. Indeed, elementary school teachers have a huge role to play in ensuring that children develop a strong foundation in literacy skills.

Then the responsibility for literacy must not just lie with the language teachers, who admittedly are at the center of the task, but with teachers of all subjects who have the responsibility of supporting children in developing their literacy skills. Developing literacy skills not only supports learning but also enhances understanding within the curriculum area and is a key way of raising standards and outcomes in all subjects."



Having reflected on this, how critical is our role as teachers to help our learners gain these fundamental skills?





Now, let me introduce you to Teacher Dan's case. Take time to read his case. Reflect on it. Then answer the questions that follow:



Teacher Dan administered the group reading test to his class of 45 Grade 7 learners. He later found out that two of his learners were stalled readers. When he asked them to read orally, he found out that they could read words but were too slow. When asked about the passage they read, they could answer questions at the literal level but struggled with critical questions.

Probing



Can we all relate to Teacher Dan's case? If so, let us further understand his case by answering the following probing questions:



- 1 Based on Teacher Dan's case, how important are the fundamental skills to our learners?

- 2 What is/are your role/s to help these learners gain these fundamental skills in order to enjoy success in learning?

- 3 What is/are your role/s to further strengthen these fundamental skills in each of your learners for them to thrive further?

- 4 What have you realized about your impact on your learners' literacy and numeracy skills development regardless of their grade level?

Suggestions for Improvement



Now, here are some suggestions to enhance our learners' literacy and numeracy skills.



Fellow Teacher, literacy is not just about learning to read and write. It is necessary in order to learn any subject at school. Similarly, numeracy is more than counting numbers. Both skills are at an interplay in the holistic performance of our learners.

As teachers of literacy and numeracy across the curriculum, we should provide our learners a range of different contexts in which they can use these skills. We all have the responsibility to promote these skills in our classroom. In all levels and curriculum areas, we should explore the possibilities of extending and complementing numeracy and literacy.

We should give our children quality instruction so that they can have the best chances to succeed in life.



Great suggestions, Mike! We hope that these can help you and other teachers, too!

To deepen your understanding of our roles as literacy and numeracy teachers, regardless of our grade level and learning area, we have provided several illustrations of practices in the next section.





ILLUSTRATIONS OF PRACTICE



Teacher Jen and I will now walk you through the different illustrations of practice that provide multiple opportunities for learners to gain these fundamental skills across curriculum areas.

Together, let us explore some ways on how a teacher can weave literacy and numeracy instruction into the content they teach.



ILLUSTRATION OF PRACTICE NO. 1:

Literacy across Curriculum Areas

Principle 1: Literacy instruction is embedded in all learning areas.



If you are a math, history, science, or art teacher, where does literacy fit into your classroom instruction? With content standards looming, it's easy to only focus on the content we teach. We have so much to tell learners and share with them. However, are we affording learners enough time daily to practice crucial communication skills?

There are an endless number of engaging, effective strategies to get learners to think about, write about, read about, and talk about the content you teach. The ultimate goal of literacy instruction is to build a learner's comprehension, writing skills, and overall skills in communication.

Ask yourself these questions: How do I mostly convey the information and knowledge to my learners? Do I turn primarily to straight lecture, or teacher talk? Do I allow multiple opportunities for learners to discover information on their own? Let's read the strategies employed by Lea, a Grade 6 teacher, as she integrates literacy skills in her lessons.



Lea teaches Grade 6 learners. Knowing the importance of developing literacy skills among her learners, she integrates literacy skills in her TLE class. On one occasion, she asks them to collect empty food packets (for example chips, biscuits, juice, milk), wash them and bring them to school. At school, the learners are instructed to look at the different packets and what is written on them. They learn many new words this way, such as the names of the ingredients.

In another activity, Teacher Lea instructs the Grade 6 learners to bring one daily newspaper to their Filipino class. She tells the learners to select an article that interests them and make notes about it. Then she arranges them in groups of four to six, putting learners who have chosen the same article together so they could hear each other's interpretation of the story and discuss the different ways of describing the same story.

Teacher Lea's activities did not require many resources or much extra time, but made the learning of new terms and vocabulary more interesting and relevant to the learners. This would undoubtedly enhance their learning.



Thank you, Mike!

As a teacher, you can explore varied ways to develop your learners' literacy and life skills. In developing your lessons, you just have to consider your learners' level, learning goals and the appropriate teaching resources.

For instance, to expose your learners in real setting for language, you may take them to offices, museums, shops, and other places in your community. This can give them exposure in reading and understanding language in authentic use. Likewise, you may integrate ICT such as computers, mobile phones and other ways of utilizing them for information sharing and communication. To develop their writing skills, encourage your learners to compose varied text types- advertisements, announcements, letters, stories, factual texts and so on (United Nations Relief and Works Agency, 2013).

Now, let's explore the practices employed by Teacher Jonalyn in her Music class which enhance the literacy skills of her Grade 7 learners.

Jonalyn teaches MAPEH to Grade 7 learners. Many of her learners have difficulty in reading Music textbooks so Jonalyn plans a way of teaching Music that makes it easier for them to access the information in the textbook.

Teacher Jonalyn plans to teach the class about the different types of instruments. She starts the lesson by showing the learners names of the different instruments: wind, percussion and string.

She writes these on flashcards. These flashcards are displayed on the board. She also gives each learner a picture of an instrument. She asks each learner to come up in front and put the picture next to the flashcard with the name of the instrument to which they think it belongs. Then she asks questions about what they know about the different types of instruments, the characteristics of each type and the difference between and among them.

Jonalyn then divides the class into three groups and gives each group one of the types of instruments. She asks them to create something, for example, make up a song or design a poster to show what they know about the instruments. Or they can draw different instruments under the type of instrument and write about them, which they could make into a book.

In the next lesson, Jonalyn asks each group to present their work to the rest of the class. The learners are excited about the activities and some ask if they could do more work on their instruments at home.

It can be observed that Teacher Jonalyn used flashcards and working together to develop the learners' literacy skills, as well as to extend their ways of learning by seeing, drawing, writing, singing and working together.

This practice of emphasizing key content such as the terminology of the subject, will improve your learners' subject knowledge and literacy skills. Other ways of learning might include encouraging them to observe and search for resources, or using storytelling, role play or brainstorming, all of which involve literacy skills. Understanding that you need to use a variety of teaching strategies in your class to cater to individual needs is very important when teaching any subject and when trying to extend learner's literacy skills (United Nations Relief and Works Agency, 2013).



Great, Jen!

Now, we also have to remember that the teaching of literacy skills at any key stage is important. Let us take note how these skills are developed in each key stage as we explore more of these sample teacher practices.



Principle 2: Literacy instruction considers the learners' key stage.

A Grade 2 teacher uses explicit teaching to develop vocabulary knowledge among her learners. Prior to the reading of the story, she first chose key unfamiliar words and introduced these through various modes, e.g., pictures, context clues. Then she modelled and used each word. She allowed her pupils to use the words through guided and independent practice exercises. Learners were encouraged to use them in meaningful structures.

A junior high school teacher engages her class to write an argumentative text. She presents a newspaper editorial about bullying. She facilitates the discussion about its text structure and development. Later, she poses another realistic learner issue: Should learners be required to wear a specific haircut? Brainstorming was used to draw their claims. She then guided the learners to organize these claims according to degree of importance. After, she allows them to write independently their editorials. Learners were then encouraged to read their compositions.



Have you seen the distinct difference between the instruction in these two key stages? Literacy instruction for the young learners focus on vocabulary building and making meaning of what they read. This is important to help them develop skills and strategies to access the content of the simple texts they are reading. Meanwhile, as they become more proficient readers, the skills of skimming, questioning and reviewing texts become much more important. As a teacher, you will need to plan and adapt activities to match their levels and skills in reading depending on your learners' age and needs (United Nations Relief and Works Agency, 2013).



Indeed, Mike!

Let me now bring you to the classroom of Teacher Karen and see how teaching literacy is strengthened by building links to the real world.



Principle 3: Teaching literacy is strengthened by building links to the real world.

Teacher Karen is a Grade 3 teacher who wanted her pupils to understand how important literacy is to all aspects of life. To do this, she conducted a project that would encourage her pupils to explore literacy at home and in the community.

Teacher Karen encourages the young learners in her class to hone their observation skills by asking them to take note of and write down names of streets and stores, outdoor advertisements, and other street signs on their way home from school. This “noticing” assignment is reviewed during the next class meeting when learners share the words they saw. Teacher Karen writes on the board the words that the learners put together in their list. From this list, Teacher Karen can ask learners to use the words in a sentence or a paragraph. She can also encourage the learners to use their creativity to come up with a story based on the words they collected.



Generally, as we are all teachers of literacy, we should adapt a variety of strategies.

Many other activities can be planned and created based on authentic and real-life situations from the learners’ own contexts. Issues that learners identify with, topics that they are interested in, as well as problems they normally encounter in their everyday lives can be sources of lessons and activities. These are relatable to the learners and can be venues for interaction among learners, across areas of learning, and within the school setting and beyond.



Source: Stirling Council (2016)

ILLUSTRATION OF PRACTICE NO. 2:

Numeracy across Curriculum Areas

According to the United Nations Relief and Works Agency (2013), numeracy is not perceived as easy to teach by most teachers and many may feel that they need more support to teach numeracy than literacy, perhaps, because they themselves did not like math at school. However, to develop numeracy across the curriculum provides opportunities for children to improve their accuracy and learn how to interpret information. Learning how to present information in a quantitative way and developing children's problem solving and thinking skills go beyond the mathematics lessons. Making learning numeracy across the curriculum a success needs the support of all teachers if it is to be effective and have an impact on children's learning.



Think about your current practice. Do you ever link numeracy to the activities you plan in your subject area? Think how you could do this more and how you can help support children's learning in mathematics. Now, read the following teacher practice to explore how numeracy concepts and skills can assist children's learning in social studies.

**PRINCIPLE 1: Numeracy should be developed consistently across different areas of learning.**

A social studies teacher wanted to deepen the understanding of his Grade 4 learners to compare the local agricultural products in their community.

As part of the extended classroom activity, he asked his learners to conduct data gathering among the locals on the amount of agricultural products harvested for a week. The next day, he facilitated the learners' discussion that included these numeracy concepts: Which agricultural product got the highest produce? Which was least produced? Which area harvested the most?

After, he engaged more his learners by asking them to conduct investigatory projects focusing on key concepts such as: What could be attributed to the differences in the harvest? What possible solutions could you give so that produce will increase?



All teachers have a responsibility for promoting numeracy subjects. In the sample teacher practice, the social studies teacher demonstrates knowledge of the key areas of numeracy that makes her explore within the subject the opportunities for extending and complementing numeracy teaching and learning in mathematics lessons. Great job, teacher!





Fellow Teacher, numeracy can be taught across curriculum. It need not be taught only by a Mathematics teacher.



HOW TO DO IT?

Listed are some of the strategies that show how numeracy concepts and skills can be applied in other subjects (United Nations Relief and Works Agency, 2013):

- **History:** Teacher Marites includes concept of time, concept of number and dates, sequencing events and dates, understanding and comparing large numbers, using a timeline, logical reasoning. She includes activities, such as sequencing numbers and dates to help learners see why some events, such as the start of a war, happened.
- **Science:** Teacher Melody includes making measurements, collecting data, comparing, and interpreting data, graphs and diagrams, estimation, logical reasoning. In her Grade 8 Science class, she asks learners to measure the extension of a spring with different weights that will involve them in various measuring tasks and devising ways of recording their results.
- **English:** Teacher Lalaine includes reading and writing numbers, time and measurement concepts in English in her Grade 4 English class.
- **Vocational education and training:** Teacher Ronnie includes making measurements (distance, area, volume, timing), geometry (shapes), and estimation in his SHS Tile Setting class. He asks learners to estimate how much of each material they will need to tile a floor and work out the actual cost to help them see how to judge the possibility of being able to afford to do the job.
- **Physical education:** Teacher Jho includes number concept, measurements, and practical activities of measuring distance. In her Physical Education class, she asks her learners to measure heartbeat, pulse rates and recovery rates to judge their fitness.
- **Arts:** Teacher Imelda includes geometry (shapes) perspective in her Grade 8 Arts class. She knows that understanding how shapes tessellate will help her learners design their own patterns in traditional styles.



Did you know that we can use meaningful and fun-filled activities to teach numeracy skills?

According to studies, in a meaningful and fun-filled context, children can acquire skills without the pressure and fear of failure in quite the same way as they might feel in a more structured learning environment.

Now, read and reflect on some of the teacher practices which tell the story of teachers who use these suggested activities to help their pupils deepen their understanding of mathematics. As you read, think how you might employ such strategies in your teaching.



PRINCIPLE 2: Numeracy skills are built through meaningful and fun-filled activities.

Teacher Andrew, a Grade 6 TLE teacher, asked his learners to record daily in a table their spending for their allowance (baon).

Day	Daily Allowance	Expenses	How much was left?
Day 1			
Day 2			
Day 3			
Day 4			
Day 5			
Total			

After, he engaged the class to compare their allowance and their spending. He also asked them to present the data in a bar graph. He asked them to interpret their findings. He, then, involved them to devise an individual financial plan.



Now, let us take a look at these teacher practices utilizing games. Let's take a look at how the teacher employed these strategies.



Game: Simon Says Geometry

1. Choose someone to be "Simon."
2. Have "Simon" give a command to the other players:
 - a. Point = Fist
 - b. Segment = Arm bent at elbow across chest
 - c. Ray = Arm straight across
 - d. Line = Both arms extended (right arm to right side, left arm to left side)
 - e. Perpendicular = One arm up, one to the side
 - f. Parallel = Both arms up
3. If the command starts with "Simon says..." the players have to do it.
4. If the command doesn't start with "Simon says..." and a player does it, they're "out."
5. The last person standing wins!

The teacher understands that it is important to get learners out of their seats as moving make them think. With that in her mind, she employs a game Simon Says Geometry which is a fun-movement based activity that gets learners using and listening to mathematics terminology. It allows teachers to combine visual, kinesthetic, and audio learning techniques (Feldman, 2007).

Using number lines can help learners figure out simple math equations. They can use the line to create a visual image of a problem. It also helps learners realize that numbers do not end at zero and introduces them to negative numbers. Learners can use this activity to apply imagery, movement, and touch to math equations (Feldman, 2007).

Game: Johnny Walks the Number Line

1. You will work in groups of five.
2. Choose who will be 'Johnny' in the group.
3. You will draw an equation from the fish bowl.
4. Read the equation and be able to answer it.
5. The groupmates will walk 'Johnny' to the answer on the number line.

For example, $2+2$. Starting at zero, the groupmates walk Johnny to two, then he walks 2 more.

Note: A number line will be drawn inside or outside the room.



You might want to consider in your lessons activity-based learning or ABL that are meaningful and fun-filled. It describes a range of pedagogical approaches to teaching. Its core premises include the requirement that learning should be based on doing some hands-on experiments and activities. The idea of activity-based learning is rooted in the common notion that children are active learners rather than passive recipients of information. If a child is provided with the opportunity to explore and an optimum learning environment, learning becomes joyful and long-lasting.



HOW TO DO IT?

To strengthen numeracy, you should create a rich and supportive learning environment that will support a skillful mix of a variety of approaches, including:

- active learning and planned, purposeful play;
- development of problem-solving capabilities;
- developing mental agility;
- frequently asking children to explain their thinking;
- use of relevant contexts and experiences, familiar to children and young people;
- using technology in appropriate and effective ways;
- building on the principles of Assessment is for Learning, including understanding the purpose and relevance of the activities;
- both collaborative and independent learning;
- making frequent links across the curriculum, so that concepts and skills are developed further by being applied in different, relevant contexts;
- promoting an interest and enthusiasm for numeracy.

Source: Curriculum for excellence: numeracy across learning principles and practice

ILLUSTRATION OF PRACTICE NO. 3:

Numeracy and Literacy in Classroom Instruction

Literacy goal:

I should enable my learners to:
Note details in a story- character, setting, events.

Numeracy goal:

I should enable my learners to:
Read and write numbers up to 1 000 in symbols and in words.

Ms. Kathleen, a Grade 2 teacher, has developed a holistic perspective in planning her instruction. She considers literacy and numeracy skills as interconnected skills and equally important in every instruction. She crafts her instruction to develop these skills.

In one of her daily teachings, she utilized a story about a family. Using this as a springboard, she engaged the class to discuss the story details –characters, setting, and events.

In her Math session, she utilized the same story but instead of story elements as the focus, she directed the learners' attention on number sense by asking her pupils to read and write the number that represents the members of the family.

As an extended activity, she told her pupils to report about their families including the number and names of the members.



Teacher Kathleen demonstrates understanding of literacy and numeracy skills. This is reflected in her instructional activities for the day. Her instructional intentions are clear – to instill among her learners that literacy and numeracy skills go together.





PROFESSIONAL DEVELOPMENT PLAN



After exploring this module, you now have a better appreciation of the indicator. Based on your professional reflection, think of ways on what you can do to further enhance your knowledge, skills and attitudes in this indicator.



Fill in the personal action plan below.

STRENGTHS <i>What are the skills you are good at?</i>	DEVELOPMENT NEEDS <i>What are the skills you need to improve?</i>	ACTION PLAN <i>What can you recommend for your development intervention?</i>	TIMELINE <i>When will you implement your plan?</i>	RESOURCE NEEDED <i>What assistance/resources do you need to implement the plan?</i>



Happy planning!





RESOURCE LIBRARY



This section provides you with resources that can help you further understand the indicator.



Annotated Bibliography

Curriculum for excellence: numeracy across learning principles and practice (n.d) Retrieved from <https://education.gov.scot/Documents/numeracy-across-learning-pp.pdf>
This presents significant principles and practices in teaching numeracy.

Feldman, D. (2007). Mathematics Strategies for Middle-School Students. http://www.schoolsofwestfield.org/UserFiles/Servers/Server_952612/File/2Departments/Title%201/Dissemination%20PDF%27s/math%20strategies%20for%20MS%20students.pdf
The author suggests several highly-interactive strategies to teach mathematics.

Northwest Missouri State University (NWMSU) (n.d). Definition of strategies and activities. Retrieved from <http://www.nwmissouri.edu/dept/peu/learnerteach/mopta.htm>
This website provides articles that define teaching strategies and activities.

Stirling Council (SC), (2016). Improving life through learning. Literacy strategy schools, learning and education. Retrieved from https://www.stirling.gov.uk/_documents/education-and-learning/curriculum/literacystrategy.pdf
This presents literacy strategies to promote learner achievement and educational attainment.

Study.com (2018). Student Achievement: Definition, Factors & Research Retrieved from <https://study.com/academy/lesson/learner-achievement-definition-factors-research.html>
This provides definition of key terms related to learner achievement.

United Nations Relief and Works Agency. (2018). School Based Teacher Development Programme Transforming classroom practices. Retrieved from <https://www.unrwa.org/sbtd>
The website provides resources for school-based teacher development which includes literacy and numeracy.

Victorian Curriculum and Assessment Authority (VCAA), (2018). Literacy learning progressions. Retrieved from <http://www.vcaa.vic.edu.au/Pages/foundation10/viccurriculum/literacy/intro.aspx>
This presents aspects of literacy expressed in content descriptions and achievement standards.

TEACHER EDUCATION COUNCIL

Leonor Magtolis Briones
Secretary
Department of Education

Allan B. De Guzman, Ph.D.
Luzon Zonal Representative

Rita May P. Tagalog, Ph.D.
Visayas Zonal Representative

Evelyn G. Chavez, Ph.D.
Mindanao Zonal Representative

Lourdes R. Baetiong, Ph.D.
Language Subject Representative

Myrna B. Libutaque, Ph.D.
Mathematics Subject
Representative

Lorina Y. Calingasan, Ph.D.
Social Studies Subject Representative

SECRETARIAT
Runvi V. Manguerra, Ph.D.
Executive Director II

Jayson A. Peñafiel
Education Program Supervisor

ACKNOWLEDGEMENTS

PROJECT TEAM

Gina O. Gonong, Ph.D.
Joint Project Team Leader and Director
PNU-RCTQ

John Pegg, Ph.D.
Joint Project Team Leader and Director
UNE-SiMERR

Christine Reading, Ph.D.
Senior Research Fellow
UNE-SiMERR

Michael Wilson I. Rosero
Senior Research Officer
PNU-RCTQ

Mikkey Mari M. Tuazon
Research Officer
PNU-RCTQ

PNU-RCTQ and UNE-SiMERR National Research Centre

Jennie V. Jocson, Ph.D.
Deputy Director, PNU-RCTQ

Allan S. Reyes, Ph.D.
Senior Program Manager, PNU-RCTQ

Joy Hardy, Ph.D.
Deputy Director, UNE-SiMERR

Ken Vine, Ph.D.
Principal Research Adviser
UNE-SiMERR

Support Staff
Silvia Danieli
June Billings
Ambrose McDermott

Glinore Morales
Beverly Estocapio
Ruby Gantalao
Luis Angelo Abergas
Lyndon Morales
Guillen Nabong
Ezra de Jesus

WRITER-COORDINATORS

Jennifer E. Lopez
Education Program Supervisor
Region IV-A

Maria Concepcion Beltran - Montenegro
Faculty, Ateneo de Manila University

WRITERS

Adelyn R. Bartolome
Domingo R. Cueto
Alfred James A. Ellar
Mark Anthony P. Idang
Gerlie C. Lopez
Francis Victor A. Medrano
May Grace D. Salazar
Shiela Niña Rea-Santes
Ryan G. dela Torre
John Paul dela Rosa
Grace Urbien-Salvatus
Karina Angela C. Celestial
Arlene M. Hernandez
Christian Mespher A. Hernandez

REVIEWERS

Shirley N. Cerbo
Jerome A. Chavez, Ed.D.
Mary Leigh Ann C. Perez
Vivian I. Buhain, Ed.D.
Philip Jay N. Alcoberes, Ph.D.
Allen U. Bautista, Ed.D.
Maricel D. Ambid
Manuel R. Apuli
Floripina B. Galay

Sandra A. Garcia
Eduard O. Gonong
Ryan H. Homan
Glen P. Honrado
Neri D. Mangalindan
Amparo M. Muñoz
Natividad V. Nacino
Aufric Alma N. Navarro
Carlo Donato E. Olivan
Jose Ariel S. Padoyan
Jennifer M. Rojo
Gemma A. Realo
Neil Vincent C. Sandoval

EDITOR

Myrna L. Macalinao, Ph.D.

GRAPHICS & LAYOUT ARTIST

Raymond S. Bermudez

AUSTRALIAN EMBASSY

Francesca Lawe-Davies
First Secretary-Education

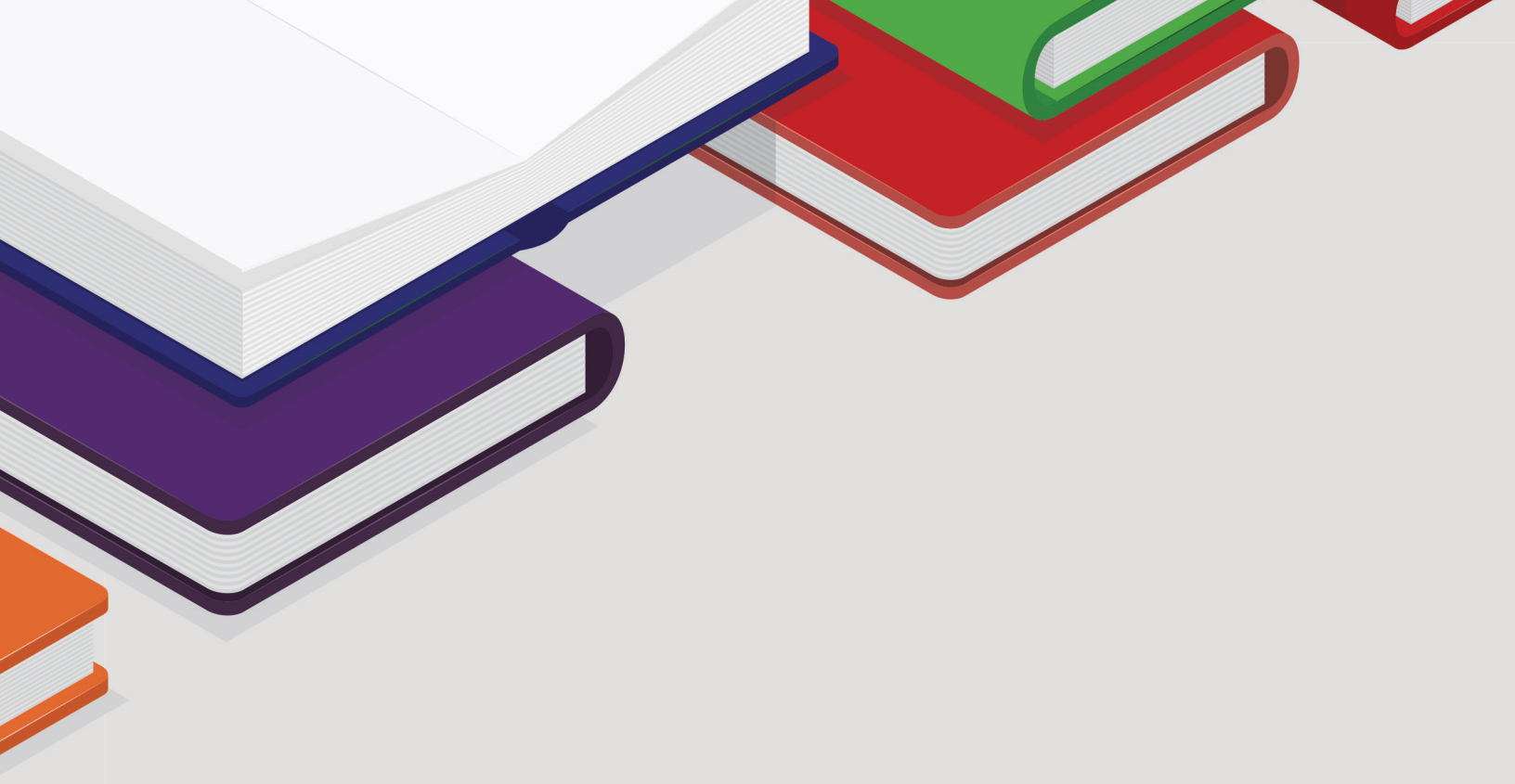
BASIC EDUCATION SECTOR TRANSFORMATION (BEST) PROGRAM

Kaye Cox
Team Leader

Alison Atwell, Ph.D.
Component Lead
Teaching and Learning

Soledad L. Lecaroz
Teacher Development Adviser

*Special thanks: All Regional
Directors, Superintendents and
Principals who supported the
project*



© Department of Education - Teacher Education Council

The PPST Resource Package was developed through the Philippine National Research Center for Teacher Quality (RCTQ) with support from the Australian Government through the Basic Education Sector Transformation (BEST) Program.

