**TAXONOMY FOR INDENTIFYING, CLASSIFYING AND INTERRELATING TEACHING STRATEGIES[[1]](#footnote-1) – NUMBER**

| CATEGORIES | Associative  **Group students based on their skills, needs and interests to help facilitate mental, emotional, and/or social growth.** | Deliberative  **Encourage a thoughtful exchange of ideas to promote cognitive, social, and verbal communications skills.** | Expositive  **Provide information, oral or written, in an orderly, authoritative and intelligible manner, to a receptive audience.** | Individualistic  **Provide instruction designed to meet the skill needs and interests of the student, based on individual assistance.** | Interrogative  **Use questioning skills to encourage participation, clarify and evaluate understanding and promote higher thinking.** | Investigative  **Solve problems, based on inductive reasoning, by collecting and analysing data, and drawing conclusions.** | Performative  **Encourage creative, aesthetic, and or psychomotor expression based on the dramatic/fine arts, and physical skills.** | Technological  **Allow students to access and record information by means of mechanical devices, from film projectors to computers.** |
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| STRATEGIES | E.g. dyads, partners, cross/multi-age, ability and interest groups, heterogeneous, homogeneous, cooperative learning teams | E.g. debate, round table, conference, panel, symposium, magic circle, fishbowl, brainstorm, buzz session, class discussion | E.g. lecture, recitation, review, oral or written report, textual readings, graphical materials, demonstration, modelling, testing | E.g. programmed self-paced, packet, contract, learning styles, mastery learning, independent study, tutorial, interest centres | E.g. convergent, divergent, prompt, probe, redirect, repetition, interview, open-ended, higher level Socratic questioning | E.g. inquiry, exploration, problem solving, critical thinking, experimentation, laboratory, case study/method, discovery | E.g. dramatic play, role play, story-telling, choral reading, calisthenics, dance, mock trial, rehearsal, simulation, gaming | E.g. audio/video-recording, data/film projection, televising, videoconferencing, word processing, webquest, emailing |
| STRATEGY  OBJECTIVES | 1. Encourage students to develop particular skills with the support of group members; 2. Facilitate a spirit of cooperation, decision making, and task resolution through group interaction; 3. Help each group member achieve self-confidence and self-esteem through a non-threatening group atmosphere; and 4. Encourage group members to respect each other’s contributions, weigh the merits of opposing arguments, and to achieve group consensus. | 1. Encourage student to examine attitudes and opinions objectively and to be receptive to new ideas; 2. Help students achieve higher levels of thinking, such as analysis, synthesis and evaluation; 3. Promote a consensus decision making after carefully examining various positions; and 4. Develop communication skills by encouraging students to express their ideas carefully and logically | 1. Develop the listener’s ability to identify the essential information by means of note- taking, highlighting text etc.; 2. Provide a body of precise information that the instructor can hold the listener responsible for learning; 3. Be efficient because the presenter can determine the amount of content and the time; and 4. Allow the providing source a structure that will minimise digressions and extraneous information | 1. Provide for personal one-on-one attention when needed; 2. Reduce the amount of frustration students might experience from group competition; 3. Allow individuals to assume responsibility and directing much of their own learning; and 4. Provide a sense of security by allowing the individual to work at a comfortable pace. | 1. Encourage a sequential development of thinking skills from recalling information to constructing generalisations and making value judgements; 2. Prompt students to identify critical information and to emphasise relevant information; 3. Encourage active participation by giving each student an opportunity to ask and respond to questions; and 4. Improve the student’s achievement and sense of accomplishment by asking appropriate questions and allowing sufficient time to respond. | 1. Increase motivation by allowing students to direct much of their own investigation with the teacher’s guidance; 2. Promote greater understanding and increased retention by often providing for active and hands-on learning; 3. Encourage the development of social skills and interdependence by means of small group investigations; and 4. Require students to arrive at valid conclusions based on supporting data. | 1. Encourage self-discipline by requiring practice and rehearsal; 2. Make learning more personal and relevant to students by fulfilling their cognitive, emotional physical and aesthetic needs; 3. Encourage the development and expression of personal values and feelings; and 4. Promote social responsibilities and values by means of group interaction, mutual assistance and shared decision making*.* | 1. To increase attention and motivation as students often regard technology as a major source of entertainment and learning; 2. Help organise information, provide multi-sensory communication, and immediate feedback, especially in the case of interactive technology; 3. Provide students with technical, interpersonal, and communication skills needed to be successful in the workplace; and 4. Encourage active participation and student-centred learning by means of interactive strategies. |
| Use polynomial identities' and properties of exponents to simplify algebraic expressions. Use exponential and logarithmic functions. Find function domain and intercepts with the axes, minimum, maximum and turning point. Calculate with exponential, polynomial, rational, logarithmic and periodic functions. |  |  |  |  |  |  |  |  |
| Generalize patterns using explicitly and recursively defined functions. Perform arithmetic operations on polynoms. Use factorisation to simplify quadratic equations. Analyse function using different representations. Extend properties of integer exponent to rational exponent |  |  |  |  |  |  |  |  |
| Use linear equations and systems of linear equation to represent and solve both maths and real life problems. Generate tables, graphs, rules, expressions and equations to model real-world situation. Construct a function to model a linear relationship between two quantities. Classify function as linear or non-linear. |  |  |  |  |  |  |  |  |
| Use algebraical notation to represent and solve quantitative relation between dependent and independent variable. Find rational number as a point on the number line. Calculate using rational and real numbers. Use properties of arithmetic operations to generate equivalent expressions. Compare rational numbers and find prime factors. Calculate with integer exponents. |  |  |  |  |  |  |  |  |
| Use proportional relationship to solve problem including discounts, taxes and interest rates. Represent analyse, and generalise different patterns using tables, graphs and symbolic rules. Relate and compare different forms of representation for a relationship. Solve an inequality involving fractions. |  |  |  |  |  |  |  |  |
| Use properties of equivalent fractions to add and subtract fractions. Compare fractions with different numerators and denominators. Multiply and divide fractions. Understand the concept of unit rate and use ratio reasoning to solve problems. Rates and percentages (find a per cent as a rate over 100). Apply properties of operations to generate equivalent expressions. Estimate and calculate absolute and relative error of rounding. |  |  |  |  |  |  |  |  |
| Represent fractions on number line. Recognise and generate equivalent fractions (denominator 2, 3, 4, 6, 8). Add and subtract fractions with same denominator. Use decimal notation for fraction (convert between decimals and fractions). Use four operations and their properties to solve word problems; involving calculations with distances, money and time. |  |  |  |  |  |  |  |  |
| Use properties of operations as strategies to multiply and divide. Round numbers using the knowledge of place value. Represent whole number on the number line, find segment length and understand concept of unit segment. Recognise unit fractions in both numerical and geometrical form (express area of a part of a shape as a fraction). Compare fractions with same denominator or numerator. Describe and extend geometric and numeric patterns. |  |  |  |  |  |  |  |  |
| Add and subtract with whole digit numbers up to 1000 using knowledge of place value, properties of operations and relationship between addition and subtraction. Represent and solve word problems involving multiplication and division. Recognise fractions (1/2, 1/3, 1/4, 1/5) as a part of a whole. |  |  |  |  |  |  |  |  |
| Perform addition and subtraction operations on whole digit numbers with and without trading. Multiply by 10. Knowledge of place value (units, tens and hundreds). Solve one step addition and subtraction word problems. Find unknown single digit number in addition or subtraction equation. |  |  |  |  |  |  |  |  |
| Classify numbers as odd and even. Understand meaning of base 10. Read and write numbers using base ten numerals. Count within 1000 (skip count by 5, 10 and 100). Addition/subtraction of two digit numbers without trading. Extend numeric and symbolic patterns. |  |  |  |  |  |  |  |  |
| Add and skip count numbers less than 20. Match number names with numerals. Recognise numeric patterns (skip count forward 2s, 4s and 5s). Carry out single digit addition and multiplication as repeated addition. |  |  |  |  |  |  |  |  |

1. Based on the work of Charles R. Beck, (1998), ‘A taxonomy for identifying, classifying, and interrelating teaching strategies’, Vol. 47, No. 1 , *The Journal of General Education*, pp. 37-62 [↑](#footnote-ref-1)