South Valley University

Hurghada Faculty of Education

Curriculum & Instruction Dept.

Mathematics Teaching Methods

3rd year – Math Dept.

رؤية الكلية

كلية التربية بالغردقة مؤسسة رائدة محليًا ودوليًا فى مجالات التعليم ، والبحث العلمى ،وخدمة المجتمع ؛ بما يؤهلها للمنافسة على المستوى : المحلى ، والإقليمى ، والعالمى.

رسالة الكلية

تلتزم كلية التربية بالغردقة بإعداد المعلم أكاديميًا ومهنيًا وثقافيًا ، من خلال برامجها المتميزة ، بما يؤهله للمنافسة والتميز فى مجتمع المعرفة والتكنولوجيا ، ومواجهة متطلبات سوق العمل محليًا وإقليميًا ، وتهتم بتطوير مهارات الباحثين ؛ بما يحقق التمية المهنية المستدامة ، وتوفير خدمات تربوية لتحقيق الشراكة بين الكلية والمجتمع .

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Chapter 1 : 'concept of teaching'

'concept of teaching'

Sample Question:- What is teaching (Teaching definition)? Describe in brief about nature and characteristics of teaching.

To find out the answer to this question, watch the video available at the following link:

https://www.youtube.com/watch?v=XWyV1WSL5pY

Teaching is one of the instruments of education and is a special function is to impart understanding and skill. The main function of teaching is to make learning effective. The learning process would get completed as a result of teaching. So, teaching and learning are very closely related.

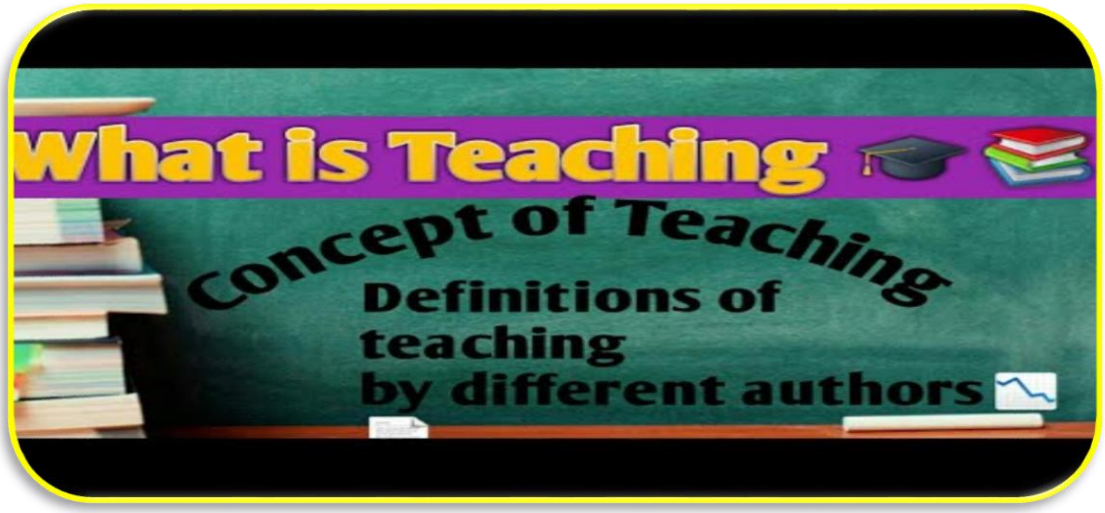
Meaning of teaching:-

Now let us discuss the concept of teaching and teaching definitions as stated by some prominent philosophers and educationists.

Concept of teaching

Teaching is a process in which one individual teaches or instruct another individual. Teaching is considered as the act of imparting instructions to the learners in the classroom situation. It is watching systematically. Dewey:- considers it as a manipulation of the situation, where the learner will acquire skills and insight with his own initiation.

Teaching definition:-



(1) H C Morrison:- Teaching is an intimate contact between the more mature personality and a less mature one.

(2) Jackson:- Teaching is a face to face encounters between two or more persons, one of whom (teacher) intends to effect certain changes in the other participants (students).

(3) J B Hough and James K Duncan:- Teaching is an activity with four phases, a curriculum planning phase, an instructing phase, and an evaluating phase. This definition presents the organizational aspect by which we can describe and analyze the teaching process.

(4) N.L.Gage (Democratic point of view):- Teaching is interpersonal influence aimed at changing the behavior potential of another person.

(5) Clerk:- Teaching refers to activities that are designed and performed to produce in students behavior.

- Nature and characteristic of teaching:-

Teaching is a social and cultural process, which is planned in order to enable an individual to learn something in his life. We can describe the nature and characteristics of teaching

in following way:-

(1) Teaching is a complete social process Teaching is undertaken for the society and by the society. With everchanging social ideas, it is not possible to describe exact and permanent nature of teaching.

(2) Teaching is giving information Teaching tells students about the things they have to know and students cannot find out themselves. Communication of knowledge is an essential part of teaching.

(3) teaching is an interactive process Teaching is an interactive process between the student and the teaching sources, which is essential for the guidance, progress, and development of students.

(4) Teaching is a process of development and learning.

(5) Teaching causes a change in behavior.

(6) Teaching is art as well as science.

(7) Teaching is face to face encounter.

(8) Teaching is observable, measurable and modifiable.

(9) Teaching is skilled occupation:- Every successful teacher is expected to know the general methods of teaching-learning situations.

(10) Teaching facilitates learning

(11) Teaching is both conscious and an unconscious process.

(12) Teaching is from memory level to reflective level.
(13) Teaching is a continuum of training, conditioning, instruction, and indoctrination.

Separation of teaching from other similar processes:-

In order to understand the meaning of teaching, it is essential to understand the difference between teaching and other similar concepts like conditioning, training, instruction, and indoctrination. Here, a brief description is given below:-

Teaching and instruction:

To know the difference between teaching and instruction watch the video during the following link:

https://www.youtube.com/watch?v=i1neGAogFAw

Instruction is the act of telling the learner what to do or what not do.

Teaching

- Scope is wide
- It is both formal and informal
- teaching is a continuum for modification of behavior
- Teaching means the development of potential of an individual
- Range of methods used in teaching is very wide
- Teaching is imparted in school, library, political group etc.

Instruction

- Its scope is narrow and limited
- Instruction is always formal
- Instruction is a part of teaching
- Instruction means to impart knowledge of specific subjects
- Instruction is generally confined to the classroom

Teaching and Indoctrination

Indoctrination is the process of forming certain beliefs. Some ideas are infused in the mind of the learner from the beginning. These ideas are continuously put in the minds of

the learners and thus such ideas become their firm believes.

Teaching

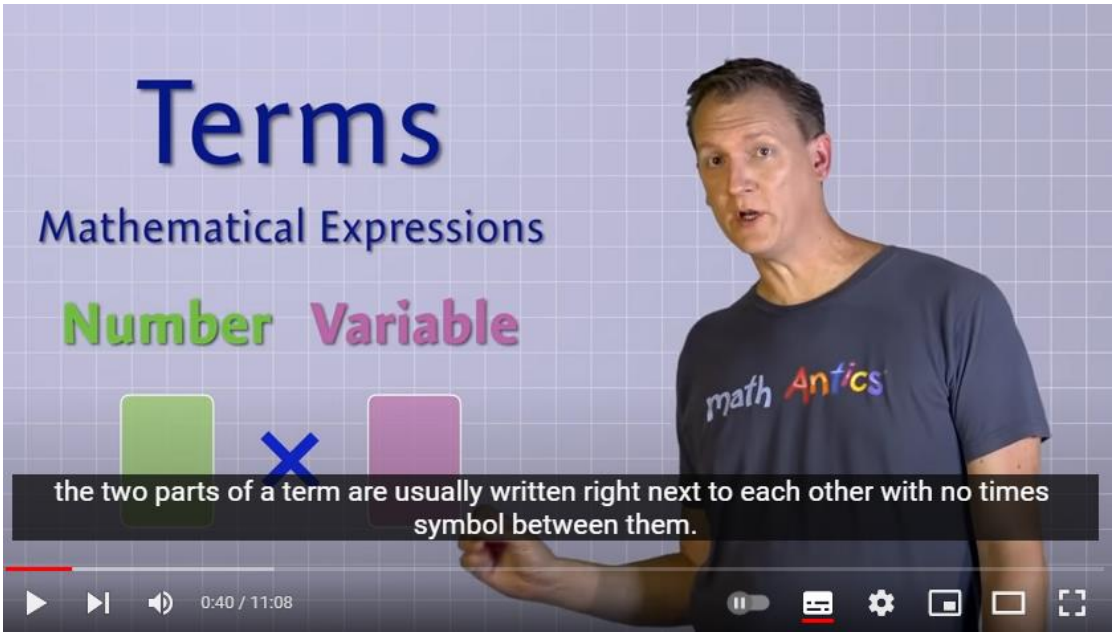
- The scope is broad.
- Aims at the development of the potential of the learner.
- Teaching points out that there are different solutions, often to the Same problem
- It provides freedom to the child to learn.
- Discipline is democratic and social discipline is emphasized

Indoctrination

- Scope is very narrow
- It aims at changing some beliefs and attitudes.
- Indoctrination poses the belief that there is only one solution to the problem
- There is no freedom for the child.
- Discipline is very rigid.

A teacher explains a mathematics lesson, watch the video during the link and notice his teaching skills:

https://www.youtube.com/watch?v=ffLLmV4mZwU



Teaching Skills

A). Introduction

Teaching is an essential part of education. Its special function is to impart knowledge, develop understanding and skills. It is usually associated with the imparting of 3 - reading, writing, arithmetic. The teachers play a vital role in imparting knowledge to the learners.

“to know how to teach is the great art of teaching”

“you teach what you need to learn”

B) WHAT IS A TEACHING SKILL?

The teaching skills are defined as a group of teaching acts or behaviors intended to facilitate students learning directly or indirectly.

Important Job Skills for Teachers

Teachers have the power to change their students' lives for the better. The best of them inspire their students toward greatness and show them what they are capable of.

There are many positions that call for teaching skills: college professors, private tutors, camp counselors, park rangers, and CPR instructors all teach, to list just a few examples. But when most people say “teacher,” they mean someone who teaches children in primary or secondary school.

What Kind of Skills Do You Need to Become a Teacher?

In order to be a great teacher, you must display enthusiasm, leadership, commitment, and compassion. By exhibiting these key factors, you will appeal to the schools at which you are applying as someone who will work to better the lives of their students in a variety of ways. Helping others succeed is a central component to teaching, thus trust, knowledge, and commitment are invaluable traits.

In order to qualify as a public school teacher, it is important to earn the necessary certification, which varies based on the school and state in which you reside. Many private schools, however, have their own criteria to qualify.

Teachers must also maintain current professional development standards by taking regular refresher courses and tests.

Types of Teaching Skills

Communication

Teaching, by definition, is a form of communication, so it follows that a teacher must have excellent communication skills. These include both verbal and written communication, professional yet friendly body language, and the ability to actively listen. You must be able to explain the material in terms that are both accessible and meaningful to the students.

You must be able to adapt your communication style to the needs of different students, depending on their age, culture, ability, and learning style. Clarity, accuracy, and professionalism with parents, colleagues, and administrators is also imperative.

- Body Language

- Clarity
- Collaboration
- Community Building
- Disciplining
- Interpersonal
- Listening
- Networking
- Parent Communications
- Public Relations
- Relationship Building
- Setting Boundaries
- Verbal Communication
- Writing Lesson Plans
- Writing Reports
- Written Communication

Critical Thinking

Teachers are tasked with solving a variety of problems, often under a tight deadline. They answer difficult questions from students on the spot, solve conflicts between students, revise lesson plans, and deal with issues among colleagues. A good teacher knows what resources to use to solve these kinds of questions quickly and effectively.

Teachers have to juggle a number of tasks, from teaching to attending meetings, lesson planning, and grading.

Getting all of it done in a timely manner requires excellent physical organization and time management.

- Creating a Comfortable Learning Environment
- Creating Assignments
- Creating Exams
- Create a Positive Learning Environment
- Creating New Ideas
- Delivery of Material
- Develop Lesson Plans
- Lesson Plans
- Manage Student Behavior
- Organizational Skills
- Preparing Lessons
- Professional
- Provide Student Support Services
- Results Oriented
- Setting Expectations
- Setting Goals

Organization

Teachers have to juggle a number of tasks, from teaching to attending meetings, and from lesson planning to grading. As such, they need to be able to keep all of these duties organized, and complete tasks in a timely manner.

- Classroom Organization
- Classroom Management
- Leadership
- Maintain Records
- Planning
- Prepared
- Record Keeping
- Scheduling
- Time Management

Passion and Creativity

Enthusiasm is key when teaching a subject in order to keep the students engaged and enthusiastic themselves. In the same vein, being creative when planning and presenting a lesson is integral to keeping students' attention. When doing so, it is important to understand that what works for one student (or class of kids) won't necessarily work for others.

- Artistic
- Being Musically Inclined
- Confidence Building
- Directing
- Enthusiastic
- Flexibility
- Love of Learning

Patience

Teachers need to demonstrate patience, particularly when dealing with difficult classroom situations. They often have to explain concepts multiple times and manage students who act up or have a difficult time in class. Dealing with parents, colleagues, and administrators can also be trying.

A teacher must handle all of it with a calm, professional demeanor, and pay careful attention to the challenge of the moment. While some people are naturally more patient than others, the emotional control and maturity that go into patience can be learned and must be practiced.

- Positive Attitude
- Positive Role Model
- Respectful
- Supportive
- Team Player
- Understanding

Technical Skills

Teachers must, of course, understand the material they teach. Naturally, different positions require different types and levels of skill, but even teachers of very young children need significant expertise. It is not enough for a first-grade math teacher to know how to perform basic arithmetic, for

example. He or she must have a deep understanding of numbers and numeric relationships in order to be able to explain the material in a thorough and responsive way.

Teachers must be able to perform the core responsibilities involved in the role, from comfortably using Microsoft Office to create materials to being comfortable providing disciplinary action as necessary. See additional keywords related to the technical skills required from teachers:

- Childcare
- Coaching
- Computer
- Conduct Testing
- Curriculum Knowledge
- Disciplinary Action
- Education Plans
- Evaluate Performance
- Extracurricular Activities
- Grading Exams
- Group Counseling
- Improve Study Habits
- Individual Counseling
- Instruction
- Management
- Microsoft Office

- Provide Student Support Services
- Supervision
- Training
- Technology

More Teaching Skills

- Assertive
- Compassionate
- Detail Oriented
- Encouraging
- Growth Mindset
- High Emotional Intelligence
- Inspiring
- Mindful
- Passion for Learning
- Patience
- Problem Solving
- Relatable
- Stamina
- Strong Leadership
- Teamwork
- Time Management

C) WHY DO WE NEED TO HAVE SKILLS IN **TEACHING?**

- To ensure competency in teaching.
- To make the class interesting.
- To enable the teacher to develop confidence in teaching.
- To avoid confusion
- To enable the teacher to understand individual differences in learning
- A professional teacher should identify what all are the skills needed and should practice to master those skills.

• Professionals will always have some skills which are present in them ,which they have acquired through special training and practice

Chapter 2 : Important Characteristics to Become a Good Math Teacher

Important Characteristics to Become a Good Math Teacher:

To know how to become a good mathematics teacher, watch the video on the following link:

https://www.youtube.com/watch?v=s3Fu-Pig1lk

Not all students like math, but a good math teacher has the power to change that. A good math teacher can help students who have traditionally struggled with arithmetic begin to build confidence in their skills. For students who are usually bored with numbers, a good math teacher can breathe new life into the subject. A good math teacher makes her class a place where students want to be.

Knowledge of Mathematics

A successful math teacher has an extensive knowledge of mathematics. She has taken multiple courses in algebra, geometry, statistics, calculus and other areas of mathematics at the college level and, possibly, even the graduate level. This knowledge allows her to confidently explain concepts and processes to her students. She is not constantly consulting the answer key in the back of the teacher's guide to help students solve problems. This confidence boosts her credibility and helps students trust in her ability to teach them what they need to know.

Teaching Strategies

Students learn in different ways, and a good math teacher understands that. She keeps up with the best practices in math education and regularly incorporates them into her instruction to help all of her students learn. She also understands there may be multiple ways to solve problems and uses those alternate strategies to help struggling students grasp difficult concepts. Her lesson plans engage students and help them feel confident in their mathematical abilities.

A Personable Approach

In the classroom, a talented math teacher does not take the "because I said so" approach or play the role of a know-it-

all. Instead, she serves as a facilitator of learning, providing students with the knowledge and tools to solve problems and then encouraging students to solve them on their own. When students answer a problem incorrectly, she does not allow them to quit. She encourages students to figure out where they went wrong and to keep working at the problem until they get the correct answer, providing support and guidance where needed.

Classroom Leadership

A skilled math teacher is seen as a leader in her classroom and in the school. Her students respect her, not only for her knowledge of mathematics, but for her overall attitude and actions. Students can tell she respects them as well. She has control over the classroom, laying out clear rules and expectations for students to follow. When students misbehave, discipline is consistent and fair.

Care and Concern

As any experienced teacher knows, teaching focuses less on the content being taught than the students being taught. A good math teacher cares about her students. She recognizes when a student is having a bad day or needs some encouragement and addresses the problem to help the student refocus on the material. While she holds

students to high expectations, she recognizes that occasionally life gets in the way of homework and that studying sometimes take a back seat to family obligations. Therefore, she offers students second chances when warranted and takes time out of her own schedule to help students catch up.

To be a good math teacher , there are important things you need :

1- Math glossary :

Each stage of study has it's own math glossary , this is a list of sme of math glossary .

A	
Acute angle	An angle less than 90°.
Adjacent	Adjacent sides are next to each other and are joined by a common vertex.
Algebra	Algebra is the branch of mathematics where symbols or letters are used to represent numbers.
Angle	An angle is formed when two straight lines cross or meet each other at a point. The size

	of an angle is measured by the amount one line has been turned in relation to the other.
Approximate	An approximate value is a value that is close to the actual value of a number.
Arc	Part of a circumference of a circle.
Area	The amount of space a shape takes up. E.g. the area of the lawn is 35 square metres.
Asymmetrical	A shape which has no lines of symmetry.
Average	A value to best represent a set of data. There are three types of average - the mean, the median and the mode.
Axis	An axis is one of the lines used to locate a point in a coordinate system.
B	
Bearing	A three digit angle measured from north in a clockwise direction.
BIDMAS	A way of remembering the order in which operations are carried out. It stands for

	Brackets - Indices - Division - Multiplication - Addition - Subtraction.
Bisect	To divide an angle or shape exactly in half.
Brackets	Used to determine the order in which operations are carried out. For example, 3 + 4 x 2 = 11 but (3 + 4) x 2 = 14.
C	
Calculate	To work out the value of something. This does not have to mean you need a calculator!
Centilitre (cl)	A measure of volume. 100 centilitres = 1 litre (100 cl = 1 l). 1 centilitre = 10 millilitres (1 cl = 10 ml).
Centimetre (cm)	A measure of distance. 1 centimetre = 10 millimetres. (1 cm = 10 mm). 100 centimetres = 1 metre. (100 cm = 1 m).
Chord	A straight line drawn from one point on the edge of a circle to another.
Circumference	The perimeter of a circle.

Coefficient	The number in front of an algebraic symbol. For example the coefficient of 5x is 5.
Congruent	If you can place a shape exactly on top of another then they are said to be congruent. You may rotate, reflex or translate the shape.
Constant	A letter or symbol whose value always stays the same. The constant Π is a common example.
Credit	To add money to a bank account. For example, I had £500 credited to my bank account.
Cross section	The end section created when you slice a 3D shape along it's length.
Cube number	The product when an integer is multiplied by itself twice. For example 5 cubed = 5 x 5 x 5 = 125.
Cuboid	A 3D shape with all sides made from rectangles.

Cumulative frequency	A running total of the frequencies, added up as you go along.
D	
Day	A time period of 24 hours. There are 7 days in a week.
Debit	To take out money from a bank account. For example, £400 was debited from my account.
Decagon	A ten sided polygon.
Decimal	Not a whole number or integer. For example, 3.6 or 0.235.
Decrease	To make an amount smaller.
Denominator	The bottom part of a fraction.
Diameter	The distance across a circle which passes through the centre.
Difference	Subtract the smaller value from the larger value to find the difference between two numbers.

Distance	How far away an object is. For example, it is a distance of 3 miles to the city centre.
Distribution	How data is shared or spread out.
E	
Equal	Used to show two quantities have the same value.
Equation	Two expressions which have the same value, separated by an '=' sign. E.g. 3y = 9 + y
Equilateral triangle	A triangle with all sides and angles the same size.
Estimate	To find an approximate answer to a more difficult problem. E.g. 31.2 x 5.94 is roughly equal to 30 x 6 = 180.
Even number	Any number which is a multiple of 2. Even numbers always end in 2, 4, 6, 8 or 0.
Expand	To multiply out brackets in an expression. For example, 2(3x + 7) = 6x + 14.

Expression	A collection of terms which can contain variables (letters) and numbers. E.g. 4pq - q + 7
F	
Factor	A number that divides another number exactly. E.g. 4 is a factor of 12.
Factorise	To put an expression into brackets by taking out a common factor. For example, 20x + 15y = 5(4x + 3y).
Figures	Another name for numbers. For example one thousand and fifty in figures is 1050.
Formula	An equation used to describe a relationship between two or more variables.
Frequency	How many times something happens. Another word for 'total'.
Frequency density	The frequency divided by the class width.
G	

Gradient	How steep a line is. Found by dividing the distance up by the distance across.
Gram (g)	A measure of mass. 1 gram = 1000 milligrams. (1 g = 1000 mg)
H	
HCF	Stands for 'highest common factor'. It is the largest factor common to a set of numbers. E.g. The HCF of 16 and 24 is 8.
Heptagon	A seven sided polygon.
Hexagon	A six sided polygon.
Histogram	A diagram drawn with rectangles where the area is proportional to the frequency and the width is equal to the class interval.
Hypotenuse	The longest side on a right angled triangle.
I	
Increase	To make an amount larger.
Indices	Another name for powers such as ^{2} or ^{3}.

Integer	A whole number.
Inter-quartile range (IQR)	The difference between the upper and lower quartile.
Irrational	A decimal which is never ending. It must also not be a recurring decimal.
J	
Justify	Another word for 'explain'. Often crops up on your maths exam. E.g. 'Calculate the mean and range for each player. Who is the better player Justify your answer.'
K	
Kilogram (Kg)	A measure of mass. 1 kilogram = 1000 grams. (1 kg = 1000 g)
Kilometre (Km)	A measure of distance. 1 kilometre = 1000 metres. (1 km = 1000 m)
L	

LCM	Stands for 'lowest common multiple'. It is the smallest multiple common to a set of numbers. E.g. The LCM of 3 and 4 is 12.
Litre (l)	A measure of volume. 1 litre = 100 centilitres (1 l = 100 cl). 1 litre = 1000 millilitres (1l = 1000 ml).
Loci	The plural of locus.
Locus	A collection of points which are the same distance from another point or line.
Lower range	The smallest value in a set of data.
M	
Mean	A type of average found by adding up a list of numbers and dividing by how many numbers are in the list.
Median	The middle value when a list of numbers is put in order from smallest to largest. A type of average.
Metre (m)	A measure of distance. 1 metre = 100 centimetres. (1 m = 1000 cm).

Millilitre (ml)	A measure of volume. 10 millimetres = 1 centilitre (10 ml = 1 cl). 1000 millilitres = 1 litre (1000 ml = 1 l).
Millimetre (mm)	A measure of distance. 10 millimetres = 1 centimetre. (10 mm = 1 cm).
Modal	Another term for mode
Mode	The most common value in a list of numbers. If two values are tied then there is two modes. If more than two values are tied then there is no mode. A type ofaverage.
Month	A time period of either 28, 29, 30 or 31 days. There are 12 months in a year.
Multiple	A number which is part of another number's times table. E.g. 35 is a multiple of 5.
N	
Natural number	A positive integer
Negative	A value less than zero
Nonagon	A nine sided polygon.

Numerator	The top part of a fraction.
O	
Obtuse angle	An angle between 90°﷽and 180°.
Octagon	An eight sided polygon.
Odd number	A number that is not a multiple of 2. Odd numbers always end in 1, 3, 5, 7 or 9.
Operation	An action which when applied to one or more values gives an output value. The four most common operations are addition. subtraction, multiplication and division.
P	
Parallel	Two or more lines which are always the same distance apart.
Parallelogram	A quadrilateral with two pairs of parallel sides.
Pentagon	A five sided polygon.
Perimeter	The distance around a shape.

Perpendicular	Two or more lines which meet at right angles.
Pi (Π)	An irrational constant used when calculating the area and circumference of circles. It is approximately equal to 3.14.
Polygon	A shape made from straight lines.
Positive number	A number greater than zero.
Prime	A number which has exactly two factors. The number one and itself.
Prism	A 3D shape with the same cross section all along its length.
Probability	A measure of how likely an event is to occur.
Product	The answer when two values are multiplied together.
Q	

Quadratic equation	An equation where the highest power is two. For example $x^2 + 4x + 6 = 0$ is a quadratic equation.
Quadrilateral	A four sided polygon.
R	
Radius	The distance from the centre of a circle to its circumference. The plural of radius is radii.
Random sampling	A method of choosing people at random for a survey.
Range	The largest number take away the smallest value in a set of data.
Rational	A decimal number which ends or is recurring.
Reciprocal	The reciprocal of any number is 1 divided by the number. E.g. the reciprocal of 3 is 1/3., the reciprocal of 3/4 is 4/3.
Recurring	A decimal which never ends but repeats all or parts of the sequence of numbers after

	the decimal point. E.g 0.333333 or 0.141414.
Reflex angle	An angle greater than 180°.
Regular	A shape with all sides and angles the same size.
Remainder	The amount left over when a number cannot be divided exactly. For example, 21 divided by 4 is 5 remainder 1.
Right angle	An angle of 90°.
Rotation	To turn a shape using an angle, direction and centre of rotation.
Round	To reduce the amount of significant figures or decimal places a number has. For example £178 rounded to the nearest £10 is £180.
S	
Scale factor	How many times larger or smaller an enlarged shape will be.

Segment	An area of a circle enclosed by a chord.
Sequence	A list of numbers which follows a pattern. For example 6, 11, 16, 21, ...
Simplify	To write a sum, expression or ratio in its lowest terms. For example 4:10:6 can be simplified to 2:5:3.
Solid	A 3D shape.
Solve	To find the missing value in an equation.
Speed	How fast an object is moving. Average speed = Total distance divided by time taken.
Square number	The product when an integer is multiplied by itself. For example, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100.
Sum	The answer when two or more values are added together.
Surface area	To total area of all sides on a 3D shape.

Symmetrical	A shape which has at least one line of symmetry.
T	
Tally	A system of counting where every group of four vertical lines is followed by a horizontal line to easily count in steps of five.
Tangent	A straight line that just touches a point on a curve. A tangent to a circle is perpendicular to the radius which meets the tangent.
Term	A number, variable or combination of both which forms part of an expression.
Transformation	The collective name for reflections, rotations, translations and enlargements.
Translation	To move a shape from one position to another by sliding in the x-axis followed by the y-axis.
Trapezium	A quadrilateral with one pair of parallel sides.

Tree diagram	A method of solving probability questions by listing all the outcomes of an event. Probabilities are calculated by multiplying down the branches.
Triangle	A three sided polygon.
Triangular number	A sequence of numbers generated by adding one more than was added to find the previous term. For example, 1, 3, 6, 10, 15, 21, ...
U	
Units	A quantity used to describe a measurement. Examples are kilograms, metres and centilitres.
Upper range	The largest value in a set of data.
V	
Value	A numerical amount or quantity.
Variable	A letter which we don't know the value of.

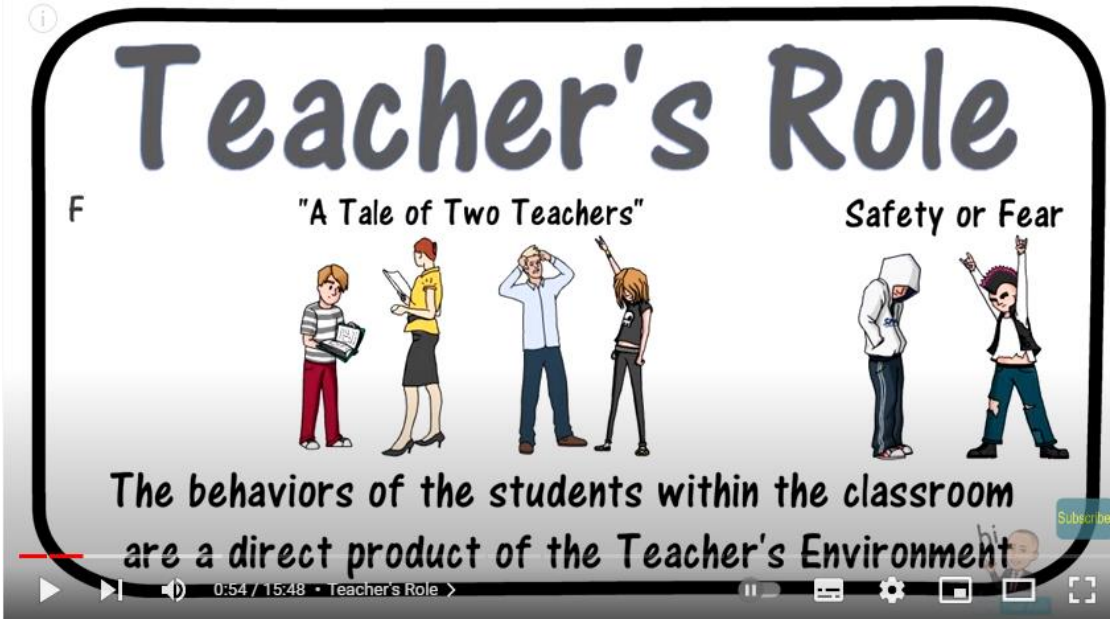
Volume	The amount an object can hold. E.g. a bottle of cola has a volume of 2 litres.
W	
Week	A time period of 7 days.
Wide	Used to describe the width of something
Width	The distance from side to side. E.g. 'The swimming pool is 10 metres wide.'
X	
X-Axis	The horizontal axis on a graph. The line going across the page.
Y	
Y-Axis	The vertical axis on a graph. The line going from top to bottom.
Y-Intercept	The value of the y-coordinate when a graph crosses the y-axis.
Year	A time period of 12 months or 365 days. (366 in a leap year.)

Z	
Z-Axis	Represents the depth of an object when working with 3D coordinates.

2- CLASSROOM MANAGEMENT

The video available on the following link shows the concept of "CLASSROOM MANAGEMENT":

https://www.youtube.com/watch?v=z_XR6dy69f4



Classroom management refers to the wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and

academically productive during a class. When classroom-management strategies are executed effectively, teachers minimize the behaviors that impede learning for both individual students and groups of students, while maximizing the behaviors that facilitate or enhance learning. Generally speaking, effective teachers tend to display strong classroom-management skills, while the hallmark of the inexperienced or less effective teacher is a disorderly classroom filled with students who are not working or paying attention.

While a limited or more traditional interpretation of effective classroom management may focus largely on "compliance"—rules and strategies that teachers may use to make sure students are sitting in their seats, following directions, listening attentively, etc.—a more encompassing or updated view of classroom management extends to everything that teachers may do to facilitate or improve student learning, which would include such factors as behavior (a positive attitude, happy facial expressions, encouraging statements, the respectful and fair treatment of students, etc.), environment (for example, a welcoming, well-lit classroom filled with intellectually stimulating learning materials that's organized to support specific learning activities), expectations (the quality of work that teachers expect students to produce, the ways that

teachers expect students to behave toward other students, the agreements that teachers make with students), materials (the types of texts, equipment, and other learning resources that teachers use), or activities (the kinds of learning experiences that teachers design to engage student interests, passions, and intellectual curiosity). Given that poorly designed lessons, uninteresting learning materials, or unclear expectations, for example, could contribute to greater student disinterest, increased behavioral problems, or unruly and disorganized classes, classroom management cannot be easily separated from all the other decisions that teachers make. In this more encompassing view of classroom management, good teaching and good classroom management become, to some degree, indistinguishable.

In practice, classroom-management techniques may appear deceptively simple, but successfully and seamlessly integrating them into the instruction of students typically requires a variety of sophisticated techniques and a significant amount of skill and experience. While the specific techniques used to manage classrooms and facilitate learning can vary widely in terminology, purpose, and execution, the following representative examples—taken from Teach Like a Champion: 49 Techniques that Put Students on the Path to College by Doug Lemov—will

provide a brief introduction to a few basic classroom-management techniques (NOTE: While the general strategies described below are widely used by teachers, the specific terms in bold are not):

- Entry Routine is a technique in which teachers establish a consistent, daily routine that begins as soon as students enter the classroom—preparing learning materials, making seat assignments, passing in homework, or doing a brief physical “warm-up” activity would all be examples of entry routines. This technique can avoid the disorder and squandered time that can characterize the beginning of a class period.
- Do Now is a brief written activity that students are given as soon as they arrive in the classroom. This technique is intended to get students settled, focused, productive, and prepared for instruction as quickly as possible.
- Tight Transitions is a technique in which teachers establish transition routines that students learn and can execute quickly and repeatedly without much direction from a teacher. For example, a teacher might say “reading time,” and students will know that they are expected to stop what they are working on, put away their materials, get their books, and begin reading silently on their own. This technique helps to maximize

instructional time by reducing the disarray and delay that might accompany transitions between activities.

- Seat Signals is a technique in which students use nonverbal signals while seated to indicate that they need something, such as a new pencil, a restroom break, or help with a problem. This technique establishes expectations for appropriate communication and helps to minimize disruptions during class.
- Props is the act of publicly recognizing and praising students who have done something good, such as answering a difficult question or helping a peer. Props is done by the entire class and is typically a short movement or spoken phrase. The technique is intended to establish a group culture in which learning accomplishments and positive actions are socially valued and rewarded.
- Nonverbal Intervention is when teachers establish eye contact or make gestures that let students know they are off-task, not paying attention, or misbehaving. The technique helps teachers efficiently and silently manage student behavior without disrupting a lesson.
- Positive Group Correction is a quick, affirming verbal reminder that lets a group of students know what they should be doing. Related techniques are Anonymous Individual Correction, a verbal reminder that is directed

at an anonymous student; Private Individual Correction, a reminder given to an individual student as discretely as possible; and Lightning-Quick Public Correction, a quick, positive reminder that tells an individual student what to do instead of what not to do.

- Do It Again is used when students do not perform a basic task correctly, and the teacher asks them to do it again the correct way. This technique establishes and reinforces consistent expectations for quality work .

3- Universal classroom management strategies

A- Model ideal behavior

Make a habit of demonstrating behavior you want to see, as many studies show that modeling effectively teaches students how to act in different situations.A straightforward way to model certain behaviors is holding a mock conversation with an admin, other teacher or student helper in front of the class. Talking about a test or other relatable topic, be sure to:

- Use polite language
- Maintain eye contact
- Keep phones in your pockets
- Let one another speak uninterrupted

- Raise concerns about one another's statements in a respectful manner
- After, start a class discussion to list and expand upon the ideal behaviors you exemplified.

B- Let students help establish guidelines

Encourage all students to help you build classroom rules, as you'll generate more buy-in than just telling them what they're not allowed to do.Near the start of the year or semester, start a discussion by asking students what they believe should and shouldn't fly. At what points are phones okay and not okay? What are acceptable noise levels during lessons? This may seem like you're setting yourself up for failure, but — depending on the makeup of you class — you may be shocked at the strictness of some proposed rules. Regardless, having a discussion should lead to mutually-understood and -respected expectations.

C- Document rules

Don't let your mutually-respected guidelines go forgotten.Similar to handing out a syllabus, print and distribute the list of rules that the class discussion generated. Then, go through the list with your students. Doing this emphasizes the fact that you respect their ideas and intend to adhere to them. And when a student breaks

a rule, it'll be easy for you to point to this document.If you're feeling creative, you can include the rule list in a student handbook with important dates, events and curriculum information.

D- Avoid punishing the class

Address isolated behavior issues instead of punishing an entire class, as **the** latter can hurt your relationships with students who are on-task and thereby jeopardize other classroom management efforts.Instead, call out specific students in a friendly manner. For example:

- "Do you have a question?", not "Stop talking and disrupting other students"
- "Do you need help focusing?", not "Pay attention and stop fooling around while I'm talking"

This basic approach will allow you to keep a friendly disposition, while immediately acknowledging poor behavior.

E- Encourage initiative

Promote growth mindset, and inject variety into your lessons, by allowing students to work ahead and deliver short presentations to share take-away points.Almost inevitably, you'll have some eager learners in your classroom. You can simply ask them if they'd like to get ahead from time-to-time. For example, if you're reading a specific chapter in a textbook, propose that they read the following one too. When they deliver their subsequent presentations to preview the next chapter on your behalf, you may find that other students want a bit more work as well.

F- Offer praise

Praise students for jobs well done, as doing so improves academic and behavioral performance, according to a recent research review and study. When it is sincere and references specific examples of effort or accomplishment, praise can:

- Inspire the class
- Improve a student's self-esteem
- Reinforce rules and values you want to see

Perhaps more importantly, it encourages students to repeat positive behavior. Let's say a student exemplifies advanced problem-solving skills when tackling a math word problem. Praising his or her use of specific tactics should go a long way in ensuring he or she continues to use these tactics. Not to mention, you'll motivate other students to do the same.

G- 7. Use non-verbal communication

Complement words with actions and visual aids to improve content delivery, helping students focus and process lessons.Many differentiated instruction strategies and techniques are rooted in these communication methods. For example, running learning stations -- divided sections of your classroom through which students rotate -- allows you to deliver a range of non-spoken content types. These include videos, infographics and physical objects such as counting coins. Paper airplanes fly across the room. Students race between desks. You can’t get a word in, as they yell over you.It doesn’t have to be this dramatic, like a movie scene you’d watch in a media literacy lesson, but poor

classroom management will almost assuredly elevate your stress and burnout rates.Unfortunately, 2006 research indicates that teachers overwhelmingly report lack of professional development support in improving classroom management. Despite this unideal situation, there are straightforward approaches you can implement by yourself. These approaches can enhance prosocial student behavior and academic engagement, establishing an orderly environment.Available as a downloadable list to keep at your desk, below are 20 research-backed classroom management strategies and techniques.Use the ones that best appeal to your situation and teaching style.

4- Planning a math lesson :

Division and Multiplication Relationship:

Understanding multiplication and division concepts! Use this lesson to help students understand inverse operations between multiplication and division :

Learning Objectives:

- Students will be able to show understanding of the inverse relationship between multiplication and division.

Materials and preparation:

- Class set of The Inverse Relationship of Division
- Class set of Multiplication and Division Review
- Division Facts to 100 with One-Digit Divisors exercise
- Division with One-Digit Divisors and Missing Factors exercise (optional)
- Two whiteboards and markers
- Class set of index cards
- Class set of Math Crossword Puzzle (optional) Class set of Division Facts: 9s (optional)

Introduction (5 minutes) :

- Draw a picture of 7 groups of 12 on the board and ask students to turn and share in pairs what they see and notice about the drawing. Listen for key terms such as "groups of," "multiplied," "divide," "repeated addition," etc.
- Ask students to share their ideas and write them on the board. If they haven't given an equation, ask them to write on the board as many equations they can think of that relate to the picture (e.g., 7 x 12 = ____, 12 + 12 + 12 + 12 + 12 + 12 + 12 = ____).
- Ask students to solve for the blanks in partners if they hadn't done so in the sharing portion. Circle the multiplication and division equations and rewrite them

on the board stacked on top of each other. Explain that today they'll review the inverse relationship of multiplication and division to help solve future word problems.

Beginning :

- Place students with a partner who speaks the same home language (L1) for the sharing portion of the introduction.
- Allow students to solve for the blanks with a supportive partner.

Intermediate:

- Provide student-friendly definitions for the key words mentioned in the introduction such as, "inverse," "multiplied," "groups," "division," "repeated addition," etc. Include an image and example as needed.

Explicit Instruction/Teacher modeling (8 minutes):

- Define inverse operation as an operation that reverses the effect of another operation. With multiplication and division, if you multiply to get a product, you can use division to reverse the operation by dividing the product, and vice versa. The product is

the answer when two or more numbers are multiplied together.

- Provide a simple multiplication and division problem using the same numbers. Model how you can change a division problem into a multiplication problem to make the division problem easier to solve.
- Highlight that converting multiplication equations to division equations is a strategy to divide by focusing on memorized or familiar multiplication facts. Check your answer using the picture representation of your choice (e.g., arrays, equal groups, tape diagrams, etc.).

5- How can I create lesson plans in mathematics?

- The great thing about our lesson plans in mathematics is that the planning is done for you. To find the topic you need, simply navigate by using the buttons to browse by year group and programme of study. You can then refine your search by curriculum aim or by the type of resource you're looking for - such as display packs or home learning materials.
- Once you've located the primary maths lesson plans and resources you need, simply click download to access the materials. You'll generally find that our units are available to download as individual lesson

packs. The contents of each lesson pack does vary by topic and lesson, but inside a typical lesson pack you'll usually find the following materials:

- a lesson plan with a clear sequence of learning
- a lesson presentation
- marking materials and/or success criteria
- a folder of printable lesson activities and

five Top Tips For Primary Maths Lesson Plans

Planning a primary maths lesson? As with any lesson, it can be a fine art to get it right. It's also one of the most time-consuming parts of teaching. With this in mind, here are five handy tips for helping you plan your next maths lesson:

1. Consider who your lesson is for. It can be tempting to put more information than is necessary into your lesson plans. Ultimately, lesson plans should support your pupils learning.

2. It's also worth considering your workload beyond teaching lessons. Be sure to factor in time for marking and other preparation when drawing your maths lesson plans for primary pupils.

3. Do a poll with your pupils to see what type of learning they prefer. If they like interactive PowerPoints, then try to incorporate more of these into your lessons.

4. Try using videos. Many teachers believe that the use of videos in lessons improves pupils motivation for learning if it involves active learning - like recording new information.

5. If your pupils have an unquenchable thirst for knowledge, then don't be afraid to deviate from your lesson plan. Though important, a rigid lesson plan can sometimes prevent learning from being the fun and rewarding experience it deserves to be.

Use of Math Teaching Aids (T A) :

- **Teaching Aids (TA)** are those accessories, tools, and items used by the classroom teacher to assist students in understanding the concepts of the lesson. In other word, Using a TA is to explain the lesson efficiently so that the students can grasp the lesson idea and messages efficiently.

- Examples of some(TA) that can be used in class:

1.MAB – place value cards and physical items such as matchsticks, buttons, ping pong balls, corks .

2.Online and Worksheet resources for primary aged students.

3.Food such as pizza, cake, pie etc.

4.Clock dials, stop watches and sand timers.

5.Protractors, set squares and compasses.

6. 2D and 3D shapes – tangrams, pattern blocks and attribute blocks.

7. Pretend money – notes and coins.

8. Beakers, funnels, cylinders, scales and weights.

9. Trundle wheel, and metre ruler.

Photos to illustrate (T A)

ssessment in mathematics

- assessment in mathematics and numeracy is more than forming judgments about a learner's ability. It monitors the learner's understanding of the mathematical language, concepts and skills and what they need to do to succeed. This requires: an understanding of how learning develops .

Types of Classroom Assessment

1- **Assessment *for* Learning (Formative Assessment)**

- The philosophy behind assessment for learning is that assessment and teaching should be integrated into a whole. The power of such an assessment doesn't come from intricate technology or from using a specific assessment instrument. It comes from recognizing how much learning is taking place in the common tasks of the school day – and how much insight into student learning teachers can mine from this material.

- Assessment for learning is ongoing assessment that allows teachers to monitor students on a day-to-day basis and modify their teaching based on what the students need to be successful. This assessment provides students with the timely, specific feedback that they need to make adjustments to their learning.
- After teaching a lesson, we need to determine whether the lesson was accessible to all students while still challenging to the more capable; what the students learned and still need to know; how

we can improve the lesson to make it more effective; and, if necessary, what other lesson we might offer as a better alternative. This continual evaluation of instructional choices is at the heart of improving our teaching practice.

2- Assessment of Learning (Summative Assessment)

- Assessment of learning is the snapshot in time that lets the teacher, students and their parents know how well each student has completed the learning tasks and activities. It provides information about student achievement. While it provides useful reporting information, it often has little effect on learning.
- **Comparing Assessment for Learning and Assessment of Learning**

Assessment for Learning (Formative Assessment)	Assessment of Learning (Summative Assessment)
Checks learning to determine what to do next and then provides suggestions of what to do—teaching and learning are	Checks what has been learned to date.

indistinguishable from assessment.	
Is designed to assist educators and students in improving learning.	Is designed for the information of those not directly involved in daily learning and teaching (school administration, parents, school board, Alberta Education, post-secondary institutions) in addition to educators and students.
Is used continually by providing descriptive feedback.	Is presented in a periodic report.
Usually uses detailed, specific and descriptive feedback—in a formal or informal report.	Usually compiles data into a single number, score or mark as part of a formal report.
Is not reported as part of an achievement grade.	Is reported as part of an achievement grade.
Usually focuses on improvement, compared	Usually compares the student's learning either with

with the student's “previous best” (self-referenced, making learning more personal).	other students' learning (norm-referenced, making learning highly competitive) or the standard for a grade level (criterion-referenced, making learning more collaborative and individually focused).
Involves the student.	Does not always involve the student.

- Adapted from Ruth Sutton, unpublished document, 2001, in Alberta Assessment Consortium, Refocus: Looking at Assessment for Learning . Used with permission from Ruth Sutton Ltd.

3- <u>Assessment as Learning</u>

- Assessment as learning develops and supports students' metacognitive skills. This form of assessment is crucial in helping students become lifelong learners. As students engage in peer and self-assessment, they learn to make sense of information, relate it to prior knowledge and use it for new learning. Students develop a sense of ownership and efficacy when they use teacher, peer and self-assessment

feedback to make adjustments, improvements and changes to what they understand.

Purpose of Classroom Assessment

- **inform and guide teaching and learning**
  A good classroom assessment plan gathers evidence of student learning that informs teachers' instructional decisions. It provides teachers with information about what students know and can do. To plan effective instruction, teachers also need to know what the student misunderstands and where the misconceptions lie. In addition to helping teachers formulate the next teaching steps, a good classroom assessment plan provides a road map for students. Students should, at all times, have access to the assessment so they can use it to inform and guide their learning.
- **help students set learning goals**
  Students need frequent opportunities to reflect on where their learning is at and what needs to be done to achieve their learning goals. When students are actively involved in assessing their own next learning steps and creating goals to accomplish them, they

make major advances in directing their learning and what they understand about themselves as learners.

- **assign report card grades**
  Grades provide parents, employers, other schools, governments, post-secondary institutions and others with summary information about student learning.
- **motivate students**
  Research has shown that students will be motivated and confident learners when they experience progress and achievement, rather than the failure and defeat associated with being compared to more successful peers.

Assessment Strategies and Tools

Teachers can use a variety of assessment tools and strategies to assess student performance. Some of these strategies and tools include:

- anecdotal notes
- observation checklists
- conversations
- portfolios
- question and answer
- checklists, rating scales and rubrics.

anecdotal notes

Anecdotal notes are used to record specific observations of individual student behaviours, skills and attitudes as they relate to the outcomes in the program of studies. Such notes provide cumulative information on student learning and direction for further instruction. Anecdotal notes are often written as the result of ongoing observations during the lessons but may also be written in response to a product or performance the student has completed. They are brief, objective and focused on specific outcomes. Notes taken during or immediately following an activity are generally the most accurate. Anecdotal notes for a particular student can be periodically shared with that student or be shared at the student's request. They can also be shared with students and parents at parent–teacher–student conferences.

The purpose of anecdotal notes is to:

- provide information regarding a student's development over a period of time
- provide ongoing records about individual instructional needs
- capture observations of significant behaviours that might otherwise be lost

- provide ongoing documentation of learning that may be shared with students, parents and teachers

observation checklists

- Observing students as they solve problems, model skills to others, think aloud during a sequence of activities or interact with peers in different learning situations provides insight into student learning and growth. The teacher finds out under what conditions success is most likely, what individual students do when they encounter difficulty, how interaction with others affects their learning and concentration, and what students need to learn next. Observations may be informal or highly structured, and incidental or scheduled over different periods of time in different learning contexts.
- Observation checklists allow teachers to record information quickly about how students perform in relation to specific outcomes from the program of studies. Observation checklists, written in a yes/no format can be used to assist in observing student performance relative to specific criteria. They may be directed toward observations of an individual or group. These tools can also include spaces for brief comments, which provide additional information not captured in the checklist.

- Before you use an observation checklist, ensure students understand what information will be gathered and how it will be used. Ensure checklists are dated to provide a record of observations over a period of time

Conversations

Learning conversations are particularly effective in helping students make connections. There are a number of ways to keep track of learning conversations. For example:

- Record the learning conversations by using a digital recording device. Either the teacher or students can download the recording and use audio editing software to identify the most salient parts of the conversation and add them to their portfolios.

- Record the learning conversations by video. Either the teacher or students can create the video recording and use video editing software to identify the most salient parts of the conversation and add them to their portfolios.

- Record their emerging understandings, working theories, solutions and reflections through a classroom Web site; e.g., chatroom, blogs, wiki. Students can then continue their conversations outside of school, build on each other's ideas, and

have a rich record of how their knowledge was built and how deep understanding emerged through open conversation.

Portfolios

- A portfolio is a purposeful collection of student work samples, student self-assessments and goal statements that reflect student progress. Students generally choose the work samples to place in the portfolio, but the teacher may also recommend that specific work samples be included. Portfolios are powerful tools that allow students to see their academic progress from grade to grade.
- The physical structure of a portfolio refers to the actual arrangement of the work samples, which can be organized according to chronology, subject area, style or goal area. The conceptual structure refers to the teacher's goals for student learning. For example, the teacher may have students complete a self-assessment on a work sample and then set a goal for future learning. The work sample self-assessment and the goal sheet may be added to the portfolio.
- Work samples from all curricular areas can be selected and placed in a portfolio. These can include stories, tests and reflections about work samples.

Question and Answer

Questioning serves as assessment when it is related to outcomes. Teachers use questioning (usually oral) to discover what students know and can do. Strategies for effective question and answer assessment include:

- Apply a wait time or 'no hands-up rule' to provide students with time to think after a question before they are called upon randomly to respond.
- Ask a variety of questions, including open-ended questions and those that require more than a right or wrong answer.
- Use Bloom's Taxonomy when developing questions to promote higher-order thinking.

Teachers can record the results of question and answers in anecdotal notes or include them as part of their planning to improve student learning

Checklists, Rating Scales and Rubrics

Checklists, rating scales and rubrics are tools that state specific criteria and allow teachers and students to gather information and to make judgements about what students know and can do in relation to the outcomes. They offer

systematic ways of collecting data about specific behaviours, knowledge and skills.

The quality of information acquired through the use of checklists, rating scales and rubrics is highly dependent on the quality of the descriptors chosen for assessment. Their benefit is also dependent on students' direct involvement in the assessment and understanding of the feedback provided.

The purpose of checklists, rating scales and rubrics is to:

- provide tools for systematic recording of observations
- provide tools for self-assessment
- provide samples of criteria for students prior to collecting and evaluating data on their work record the development of specific skills, strategies, attitudes and behaviours necessary for demonstrating learning
- clarify students' instructional needs by presenting a record of current accomplishments

Chapter3 : CLASSROOM MANAGEMENT

Importance of Effective Classroom Management to the Teacher

Teachers consider pupils' behavior management as one of the top stressors in their profession. Example, Richard

Ingersoll (2001) found that approximately 30% of the 400 who left the teaching profession cited pupil management as one of the reasons why they gave up, in a study of approximately 6700 teachers in the United States.

An earlier study by David Chan (1998) revealed that teachers rated pupil behavior management as the second most stressing factor for teachers, in a research of 400 teachers on what stresses them.

1. It helps create a conducive learning environment

If you have exceptional strategies to help you manage your classroom effectively, then these strategies will help you create an enabling and conducive environment for your students to learn effectively. For example, Daniel Goleman said that;

“The Responsive Classroom approach creates an ideal environment for learning–every teacher should know about it.”

That is to say that your classroom management skills can help you to create a favorable environment that will make all your students have a sense of belongingness so that they will feel free to explore more learning opportunities within the boundaries and standards established by collaborated efforts between you and your students. This is

possible if you have a well-thought-out plan to manage the behavior of your students and your classroom.

On the other hand, if you don't have a plan in place to manage your lessons and behavior of your students in the classroom, there will be chaos which makes your classroom environment not suitable for effective learning. In this environment, your students will learn much lesser than they could if you had managed the classroom effectively.

2. It helps avoid waste of time and energy

   You need a proper classroom management strategy to guide all things that happen in the classroom within the day. It is often helpful to pre-plan your lesson taking into account classroom management issues such that possible misbehaviors during the lesson will not limit you from helping your students to effectively grasp what you are going to teach. That is to say, before a student puts up behavior in your class during a lesson, your plan of managing the class can help you to quickly deal with that behavior and move on with the lesson.

   Reflecting and embarking on the planning processes for your classroom management will always be extremely helpful in removing almost all disruptions in your class. Remember your classroom management planning will vary across different classes.

Example, it is always appropriate to do careful planning on how to manage a class if you have disruptive students in that class. Else you will waste all the lesson period trying to control and manage the behavior of one or a few of the students while the majority do not learn much. This will often force some of the obedient students to join in disrupting the lesson.

3. It helps boost the morale of the teacher

   Having good classroom management skills helps boost your morale. It makes you feel like a master of your job. A master who does not only brings out the best in his/her students but also derives strong satisfaction and motivation from what you do. Example, I always feel happy and more satisfied after I finish teaching a lesson without or with fewer interruptions.

   But when I have a rough lesson with lots of disruptions and student misbehavior, I always burn out and feel like giving up on my teaching career. This is why I think that classroom management is extremely important in education. It is always essential to have a philosophy of managing student behavior and a plan to guide you in achieving those ideas in the classroom.

   Importance of Effective Classroom Management to the Students

Student achievement is highly dependent on the effectiveness of their teachers in the classroom. There is evidence in the literature that justifies this view. For example, the research by Sanders and Horn (1994) found that students who spend a year under ineffective teachers gain only 14 percentile points while their counterparts who spend the same time under an effective teacher gain 52 percentile points in their achievement.

I think the following benefits of classroom management account for the results in the study above. This is because, I think all other important issues that influence effective learning, such as effective instructional strategies and good classroom curriculum design, are all based and built on effective classroom management.

1. It creates structure and achievable goals for students

   Strategies for managing the classroom will always help and encourage you to establish a structure and SMART goals for student behavior and carrying out lessons in your class. With this, students will always know whether their behaviors and actions are in accordance with the established structure in the classroom.

   Effective classroom and pupil behavior management provide strategies for you to structure their classes and lessons such that pupil will have a roadmap to follow. This is always done with targets attached.

2. It informs students about what is expected of them

   An appropriate classroom management strategy will help your students understand what is expected of them. In managing behavior in the classroom, you and your students will always have to lay down rules, routines, and standards to govern behavior.

   With this, your students know exactly what to do in various situations. There will be no confusion regarding the responsibilities of every student in the class. This is like the saying of Michael Mills below;

   “research suggests that all students are motivated to learn, as long as there are clear expectations, the tasks and activities have value, and the learning environment promotes intrinsic motivation (Wlodkowski & Ginsberg, 1995; Eccles & Wigfield, 1985; Feather, 1982; Kovalik & Olsen, 2005).”

   For instance, if there is a rule that everybody should remain in his/her seat when the bell is ringing, your students will know this and will wait for you to tell them to go out for a break. However, if proper classroom management is not done and the bell rungs, your pupil will be confused regarding what to do; whether to start going out or wait for you to tell them to go.

With this, the students will end up taking a decision that is convenient for them. Thus, they will rush out while you may be trying to get their attention.

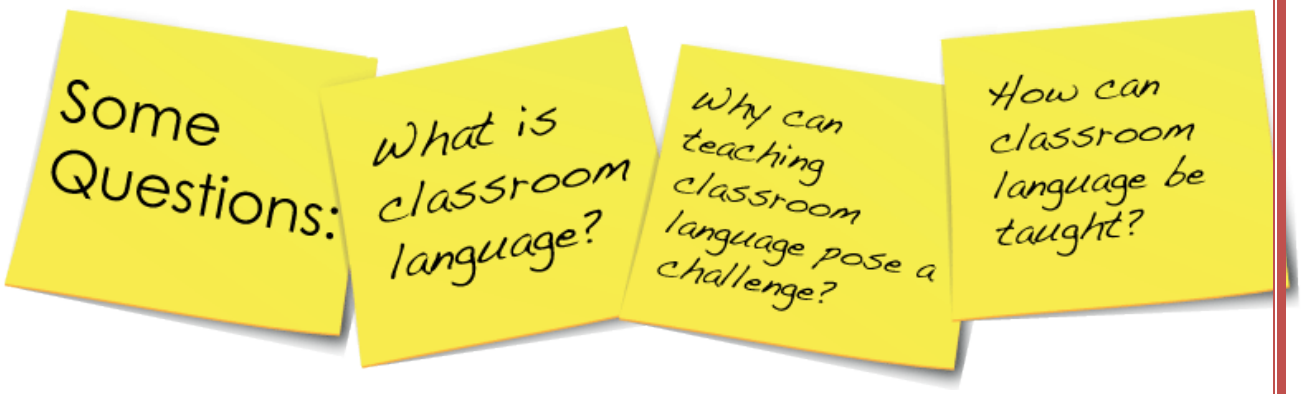
3. It increases task time and reduces classroom disruptions

   Good classroom management reduces disruptions in class. Thus, teachers try to predict all the possible disruptions and make plans to manage them appropriately. When this is successful, it increases the time students spend on lesson activities rather than talking about the disruptive behavior of their friends. This adds value to the efforts of students as they will learn much. With this, they are able to learn, understand, and pass relevant assessments to succeed in life.

   Example, the teacher can be able to predict the possible behavior of students who are talkative and put in place the ideal steps to take in managing this behavior. When this is done, students will gain more time to work on their class activities.

Classroom Language

When teaching a second language, the goal of a teacher is to use as much of the target language as possible. When reviewing a day in the classroom, one of the most frequent ways that language is used is in the daily routines; these are referred to as classroom language. Teachers can take the opportunity of these daily routines to maximize their target language use and promote its use by students. This section will describe how classroom language can be used and what some tips are for teachers when employing classroom language.



What is classroom language?

Classroom language is the routine language that is used on a regular basis in classroom like giving instructions of praise, for example “Take out your books” or “Please sit

down". This is language that teachers are used to using and students are used to hearing, but when teaching a language it takes a while to learn this part of the language. Knowing these language basics reduces the amount that students are forced to use their mother tongue and increases the amount of the target language they are using; it makes the language classroom environment more authentic.

Why can teaching classroom language pose a challenge?

Teachers often experience difficulties when trying to integrate classroom language into a lesson. The difficulty often lies in that many second language teachers learned the language themselves after childhood, so are not exposed to authentic classroom language. Those teachers must make a particular effort to seek out what the correct language is in order to create the most authentic experience for the students. Students often encounter difficulties when the form in the target language does not make sense in their mother tongue; students must learn to accept that different languages work in different ways.

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How can classroom language be taught?

When teaching classroom language, there are several strategies a teacher can employ to facilitate the learning:

- Teach the students the classroom language in a scaffolded way. Start with short commands, maybe just one word such as “Sit”. Then the teacher can progress to a longer command, such as “Sit down please” and eventually students can learn alternate phrases that mean the same think, for example “Take a seat”.
- Make sure the students know what this language is for. Don’t leave them out of the learning process; they should know that the more they use the language, the more they will develop and that these forms are meant to help use the language in the most natural way possible.
- Once you introduce the concepts, use them! Employ them as much as possible so the students become accustomed to them and eventually are able to use them as well.
- Use prompts such as language ladders or visuals to help students learn and remember the classroom language. The web site Encouraging Classroom Language Use discusses several different types of prompts that can be used.

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What are some examples of classroom language?

Some examples of the classroom language through the video available at the following link:

https://www.youtube.com/watch?v=WXWEEQhqJwg

Activity	**Brainstorm and write down 10 additional examples of classroom language. Discuss ways in which you would teach classroom language in your own classroom.**

Classroom Language: The beginning of the lesson

1. Good morning

▪

- Good morning, everybody.
- Good afternoon, everybody.

- Hello, everyone.
- Hello there, John.

2. <u>How</u> <u>are you?</u>

- How are you today?
- How are you getting on?
- How's life?
- How are things with you?
- Are you feeling better today, David?

3. Introductions

- My name is Mr/Mrs/Ms Kim. I'm your new English teacher.
- I'll be teaching you English this year.
- I've got five lessons with you each week.

4. Time to begin

- Let's begin our lesson now.
- Is everybody ready to start?
- I hope you are all ready for your English lesson.
- I think we can start now.
- Now we can get down to work.

5. Waiting to start

- I'm waiting for you to be quiet.
- We won't start until everyone is quiet.
- Stop talking and be quiet.

- Settle down now so we can start.

6. Put your things away

- Close your books.
- Put your books away.
- Pack your things away.

7. Register

- Who is absent today?
- Who isn't here today?
- What's the matter with Jim today?
- What's wrong with Jim today?
- Why were you absent last Friday?

8. Late

- Where have you been?
- We started ten minutes ago. What have you been doing?
- Did you miss your bus?
- Did you oversleep?
- Don't let it happen again.

Classroom Language: Simple instructions

1. Here are some common instructions which the class can easily understand:

- Come in.
- Go out.
- Stand up.
- Sit down.

- Come to the front of the class.
- Stand by your desks.
- Put your hands up.
- Put your hands down.
- Hold your books/pens up.
- Show me your pencil.

2. A number of instructions can be used at the beginning of a session:

- Pay attention, everybody.
- You need pencils/rulers.
- We'll learn how to …
- Are you ready?
- Open your books at page…
- Turn to page …
- Look at activity five.
- Listen to this tape.
- Repeat after me.
- Again, please.
- Everybody …
- You have five minutes to do this.
- Who's next?
- Like this, not like that.

3. A number of instructions can be used at the end of a session:

- It's time to finish.

- Have you finished?
- Let’s stop now.
- Stop now.
- Let’s check the answers.
- Any questions?
- Collect your work please.
- Pack up your books.
- Are your desks tidy?
- Don’t forget to bring your … tomorrow.

4. Instructions can also be sequenced:

- First
- Next
- After that
- Then
- Finally

5. Comprehension language:

- Are you ready?
- Are you with me?
- Are you OK?
- OK so far?
- Do you get it?
- Do you understand?
- Do you follow me?
- What did you say?
- One more time, please.

- Say it again, please.
- I don’t understand.
- I don’t get it.
- Like this?
- Is this OK?

Classroom Language: The end of the lesson

1. Time to stop

- It’s almost time to stop.
- I’m afraid it’s time to finish now.
- We’ll have to stop here.
- There’s the bell. It’s time to stop.
- That’s all for today. You can go now.

2. Not time to stop

- The bell hasn’t gone yet.
- There are still two minutes to go.
- We still have a couple of minutes left.
- The lesson doesn’t finish till five past.
- Your watch must be fast.
- We seem to have finished early.
- We have an extra five minutes.
- Sit quietly until the bell goes.

3. Wait a minute

- Hang on a moment.
- Just hold on a moment.
- Stay where you are for a moment.

- Just a moment, please.
- One more thing before you go.
- Back to your places.

4. Next time

- We'll do the rest of this chapter next time.
- We'll finish this exercise next lesson.
- We've run out of time, so we'll continue next lesson.
- We'll continue this chapter next Monday.

5. Homework

- This is your homework for tonight.
- Do exercise 10 on page 23 for your homework.
- Prepare the next chapter for Monday.
- There is no homework today.
- Remember your homework.
- Take a worksheet as you leave.

6. Goodbye

- Goodbye, everyone.
- See you again next Wednesday.
- See you tomorrow afternoon.
- See you in room 7 after the break.
- Have a good holiday.
- Enjoy your vacation.

7. Leaving the room

- Get into a queue.
- Form a queue and wait for the bell.

- Everybody outside!
- All of you get outside now!
- Hurry up and get out!
- Try not to make any noise as you leave.
- Be quiet as you leave. Other classes are still working.
- It's tidy up time
- Line up

Classroom Language: Language of classroom management

Here are some phrases that can be used for classroom management:

Giving instructions

- Open your books at page 52.
- Come out and write it on the board.
- Listen to the tape, please.
- Get into groups of four.
- Finish off this song at home.
- Let's sing a song.
- Everybody, please.
- All together now.
- The whole class, please.
- I want you all to join in.
- Could you try the next one?
- I would like you to write this down.
- Would you mind switching the lights on?
- It might be an idea to leave this till next time.

- Who would like to read?
- Which topic will your group report on?
- Do you want to answer question 3?

Sequencing

- First of all, today, …
- Right. Now we will go on to the next exercise.
- Have you finished?
- For the last thing today, let's …
- Whose turn is it to read?
- Which question are you on?
- Next one, please.
- Who hasn't answered yet?
- Let me explain what I want you to do next.
- The idea of this exercise is for you to …
- You have ten minutes to do this.
- Your time is up.
- Finish this by twenty to eleven.
- Can you all see the board?
- Have you found the place?
- Are you all ready?

Supervision

- Look this way.
- Stop talking.
- Listen to what … is saying.
- Leave that alone now.

- Be careful.

Asking questions

- Where's Bill?
- Is Bill in the kitchen?
- Tell me where Bill is.
- What was the house like?
- What do you think?
- How can you tell?

Responding to questions

- Yes, that's right,
- Fine.
- Almost. Try again.
- What about this word?

Metalanguage

- What's the Spanish for "doll"?
- Explain it in your own words.
- It's spelt with a capital "J".
- Can anybody correct this sentence?
- Fill in the missing words.
- Mark the right alternative.

Reference

- After they left the USA, the Beatles …
- The church was started in the last century.
- This is a picture of a typically English castle.
- In the background you can see …

- While we're on the subject, …
- As I said earlier, …
- Let me sum up.

Affective attitudes

- That's interesting!
- That really is very kind of you.
- Don't worry about it.
- I was a bit disappointed with your efforts.

Social ritual

- Good morning.
- Cheerio now.
- God bless!
- Have a nice weekend.
- Thanks for your help.
- Happy birthday!
- Merry Christmas!

Classroom Language: The language of error correction

Here are some phrases that can be used when giving feedback to students:

- Very good.
- That's very good.
- Well done.
- Very fine.
- That's nice.
- I like that.

- Marvellous!
- You did a great job.
- Magnificent!
- Terrific!
- Wow!
- Jolly good!
- Great stuff!
- Fantastic!
- Right!
- Yes!
- Fine.
- Quite right
- That’s right.
- That’s it.
- That’s correct.
- That’s quite right.
- Yes, you’ve got it.
- It depends.
- It might be, I suppose.
- In a way, perhaps.
- Sort of, yes.
- That’s more like it.
- That’s much better.
- That’s a lot better.
- You’ve improved a lot.

- You were almost right.
- That's almost it.
- You're halfway there.
- You've almost got it.
- You're on the right lines.
- There's no need to rush.
- There's no hurry.
- We have plenty of time
- Go on. Have a try.
- Have a go.
- Have a guess.
- Not really.
- Unfortunately not.
- I'm afraid that's not quite right.
- You can't say that, I'm afraid.
- You can't use that word here.
- Good try, but not quite right.
- Have another try.
- Not quite right. Try again.
- Not exactly.

Classroom Language: The language of spontaneous situation

If we use English in spontaneous situations:

- We relate the target language to the learner's immediate environment.

- We take advantage of spontaneous situations to use the target language.
- We exploit contexts which are not directly linked to the syllabus (language in use).
- Here are some common situations in which spontaneous English can be used:
- Happy birthday!
- Many returns (of the day).
- “” has his/her 12th birthday today.
- “” is eleven today. Let’s sing “Happy Birthday”.
- Best of luck.
- Good luck.
- I hope you pass.
- Congratulations!
- Well done!
- Who’s not here today?
- Who isn’t here?
- What’s wrong with … today?
- I’m sorry (about that).
- Sorry, that was my fault.
- I’m terribly sorry.
- Excuse me.
- Could I get past please?
- You’re blocking the way.
- I can’t get past you.

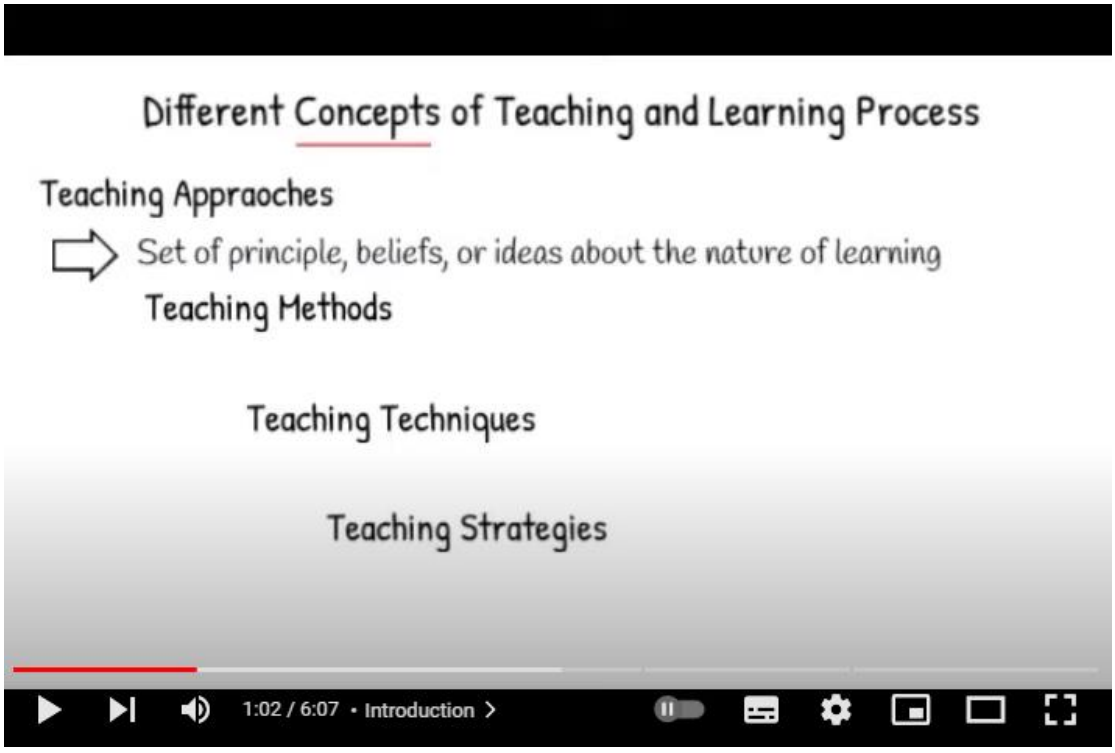
- Get out of the way, please
- I hope you all have a good Christmas.
- Happy New Year!
- All the best for the New Year.
- Happy Easter.
- Hard lines!
- Never mind.
- Better luck next time.
- Do you feel better today?
- Are you better now?
- Have you been ill?
- What was the matter?
- I'll be back in a moment.
- Carry on with the exercise while I'm away.
- I've got to go next door for a moment.
- I'm afraid I can't speak any louder.
- I seem to be losing my voice.
- I have a sore throat.
- I have a headache.
- I'm feeling under the weather.
- Do you mind if I sit down.

Chapter 4 : Approach , Method and strategy


TEACHING
APPROACHES,
METHODS
TECHNIQUES AND
STRATEGIES

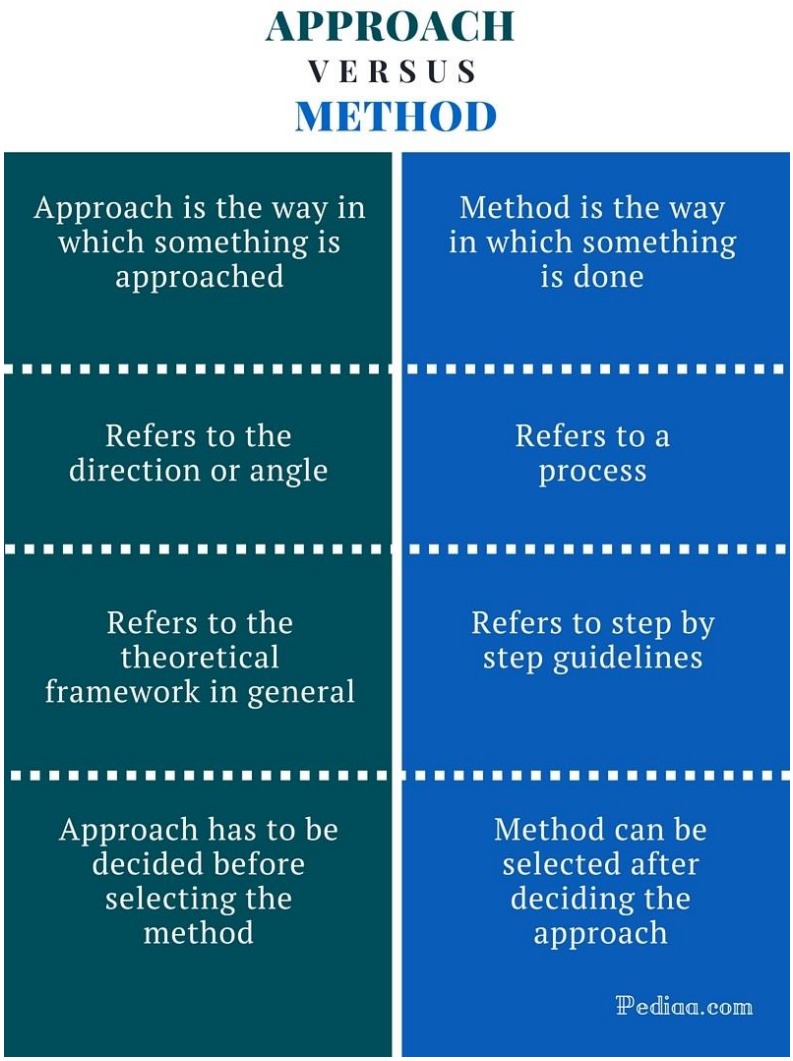
Main Difference – Approach , Method ,strategy To know the difference between Approach , Method and strategy watching the video available on the following link:

https://www.youtube.com/watch?v=1p1zcU1LAjc



Approach and method are two important concepts in performing any task. These two factors can actually decide the success of your task. **Approach is the way you are going to approach the project. Method is the way in which you are going to complete the project.** This is the **main difference** between approach and method. These two meanings can be confusing since they are overlapping. But we hope you'll get a clear understanding

of these terms after reading this article.



What is an Approach

Approach is the way in which you are going to approach a project or task. It refers to the angle you are using or the direction you are going to take. There can be a more than one way to approach a task. In academic field, approach can refer to the theoretical framework you are going to use in a project.

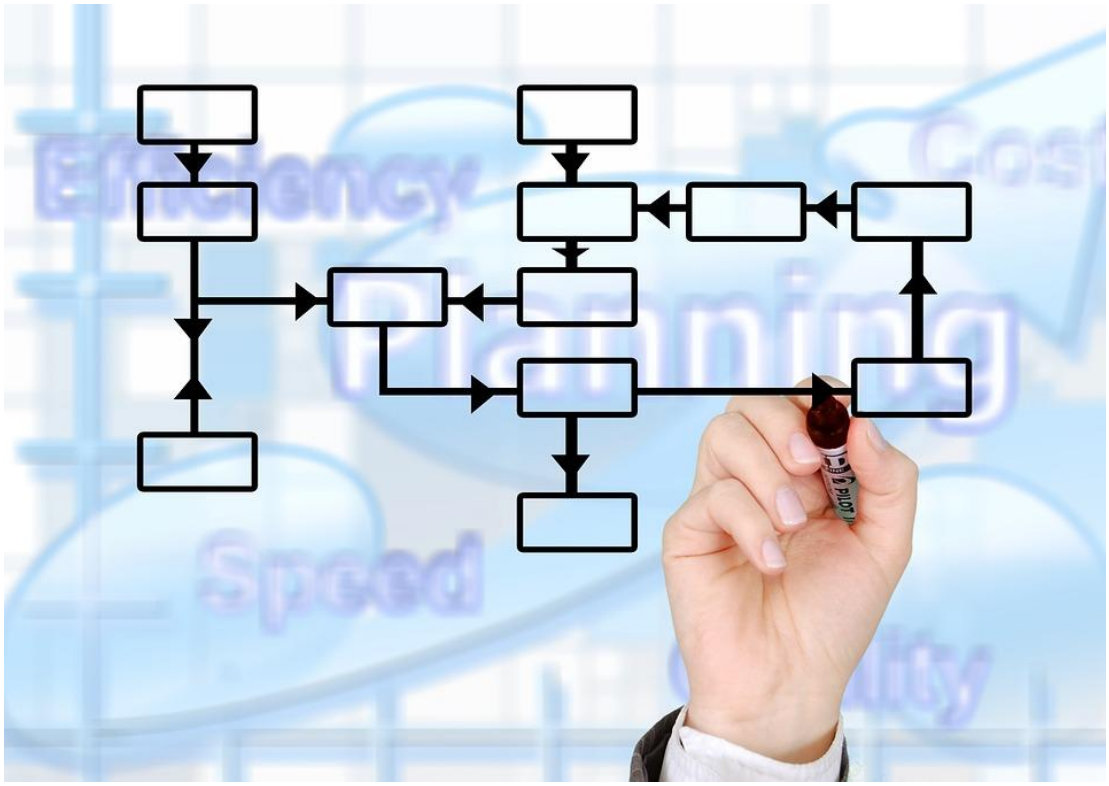
Once you have decided how you are going to approach the task, you can decide the methods you are going to use.

What is a Method

Method is the way in which something is done. Method is always organized, structured and systematic. It can refer to a step by step description of tasks to be completed in order to perform a task. For example, if you are writing a critical essay on a novel, method would be the areas you are going to analyze and the way in which you analyze. If you are conducting research, method is the way in which you gather

data and analyze them. Method basically explains how to do something and how something is done.

If we are looking at a mathematical problem, the basic theory, formula we are going to use will be the approach. The step by step way which we use to solve the problem is our method.



Difference Between Approach and Method

Definition

Approach is the way in which something is approached.

Method is the way in which something is done.

Process vs Direction

Approach can refer to the direction or angle.

Method refers to a process.

Theory vs Guidelines

Approach can refer to the theoretical framework in general.

Method refers to step by step guidelines.

Sequence

Approach has to be decided before selecting the method.

Method can be selected after deciding the approach.

Strategy:

A plan of action designed to achieve an overall aim. Example, "Whats your strategy for setting goals?", is ok to say but some people might not know what you mean. Strategy is almost like the word 'tactic'. Example :

A) What tactics do you use?

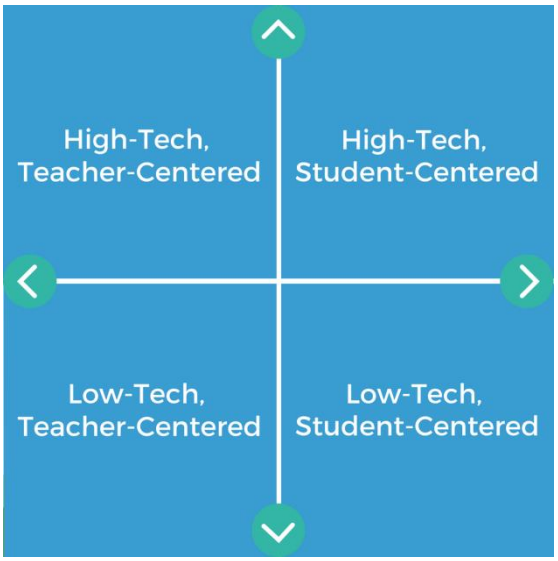
B) My teams tactics are going around

Technique

Technique is a procedure or skill for completing a specific task. If a class room is becoming distracted a teacher may use the technique to use a quick physical activity to distract their distraction and get them all to do the same thing at the same time.

Method

Method is a way something is done.Example:The recipe that I found in the cookbook had different ways to cook the potatoes, but I chose the bake method in the oven.



Teaching Methods

The term **teaching method** refers to the general principles, pedagogy and management strategies used for classroom instruction.

Your choice of teaching method depends on what fits you — your educational philosophy, classroom demographic, subject area(s) and school mission statement.

Teaching theories can be organized into four categories based on two major parameters: a teacher-centered approach versus a student-centered approach, and high-tech material use versus low-tech material use.

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Teacher-Centered Approach to Learning

Taken to its most extreme interpretation, teachers are the main authority figure in a teacher-centered instruction model. Students are viewed as “empty vessels” External link who passively receive knowledge from their teachers through lectures and direct instruction, with an end goal of positive results from testing and assessment. In this style, teaching and assessment are viewed as two separate entities; student learning is measured through objectively scored tests and assessments.

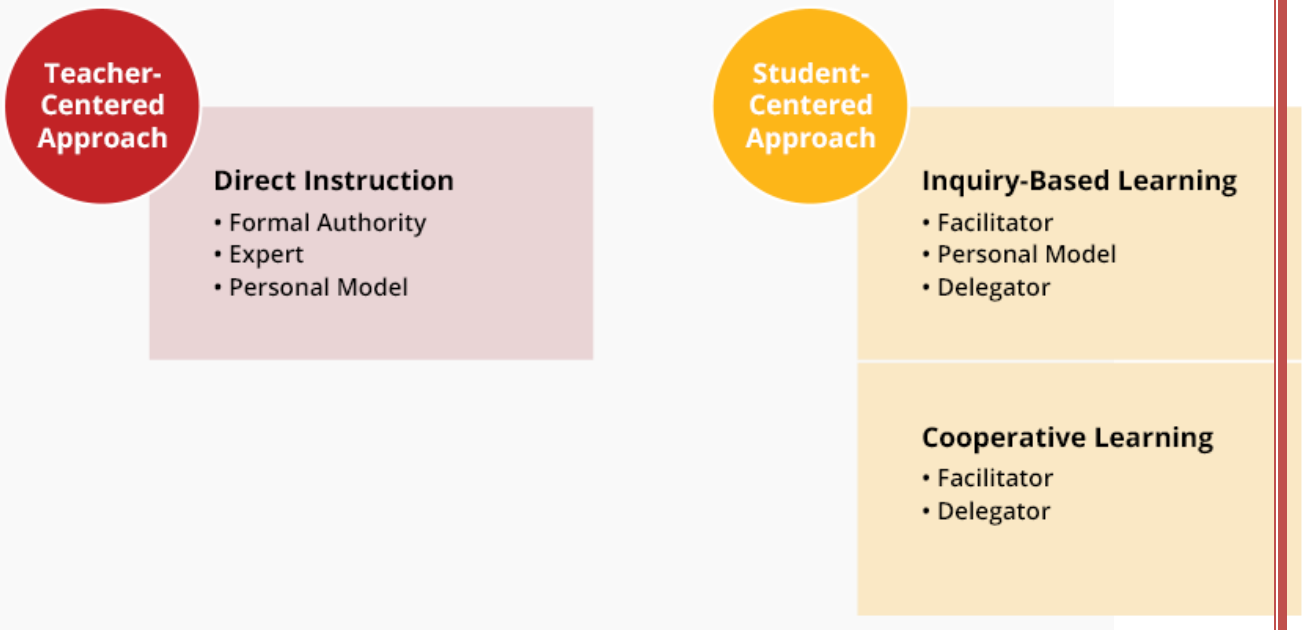
Learn more about the different teaching styles that use a teacher-centered approach.

Student-Centered Approach to Learning

While teachers are still an authority figure in a student-centered teaching model, teachers and students play an equally active role in the learning process.

The teacher's primary role is to coach and facilitate student learning and overall comprehension of material, and to measure student learning through both formal and informal forms of assessment, like group projects, student portfolios, and class participation. In the student-centered classroom, teaching and assessment are connected because student learning is continuously measured during teacher instruction.

Learn more about the different teaching styles that use a student-centered approach.



High Tech Approach to Learning

Advancements in technology have propelled the education sector in the last few decades. As the name suggests, the high tech approach to learning utilizes different technology to aid students in their classroom learning. Many educators use computers and tablets in the classroom, and others may use the internet to assign homework. The internet is also beneficial in a classroom setting as it provides unlimited resources. Teachers may also use the internet in order to connect their students with people from around the world.

Below are some tech tools used in classrooms today:

- G Suite External link (Gmail, Docs, Drive, and Calendar)
- Tablets/laptops
- Gamification software (such as 3DGameLab External link and Classcraft External link)
- Education-focused social media platforms
- Technology for accessibility External link for students with disabilities

FEATURED ONLINE DEGREES AND SHORT COURSES

Teaching and Learning Strategies for Higher Education External link

The 8-week Teaching and Learning Strategies for Higher Education online short course is delivered by Harvard's Bok Center for Teaching and Learning, in association with HarvardX. Students in this course will engage deeply with the most relevant research on effective teaching methods in the higher education context, while refining their own practices, portfolio, and teaching philosophy.

Master of Science in Teaching at Fordham University External link

The online Master of Science in Teaching program prepares aspiring teachers (grades 1-6) for initial teaching certification or dual certification in teaching and special education.

Master of Science in Education (MSE) in Educational Leadership at University of Dayton External link

The University of Dayton School of Education and Health Sciences offers a top-ranked online MSE in Educational Leadership that prepares students to serve effectively at all levels of leadership from pre-K to grade 12.

Sponsored Program

Low Tech Approach to Learning

While technology undoubtedly has changed education, many educators opt to use a more traditional, low tech approach to learning. Some learning styles require a physical presence and interaction between the educator and the student. Additionally, some research has shown that low-tech classrooms may boost learning. For example, students who take handwritten notes have better recall than students who take typed notes External link . Another downside of technology in the classroom may be that students exposed to spell check and autocorrect features at an earlier age may be weaker in spelling and writing skills External link . Ultimately, tailoring the learning experience to different types of learners is incredibly important, and sometimes students work better with a low-tech approach.

Here are some examples of low technology usage in different teaching methodologies:

- Kinesthetic learners have a need for movement when learning. Teachers should allow students to move around, speak with hands and gestures.

- Expeditionary learning involves “learning by doing” and participating in a hands-on experience. Students may participate in fieldwork, learning expeditions, projects or case studies to be able to apply knowledge learned in the classroom to the real world, rather than learning through the virtual world.
- Many types of vocational or practical training cannot be learned virtually, whether it be a laboratory experiment or woodworking.

Through these different approaches to teaching, educators can gain a better understanding of how best to govern their classrooms, implement instruction, and connect with their students. Within each category of teacher and student centeredness and tech usage, there are specific teaching roles or “methods” of instructor behavior that feature their own unique mix of learning and assessment practices. Learn more about each one to find the best fit for your classroom.

Teacher-Centered Methods of Instruction

Direct Instruction (Low Tech)

Direct instruction is the general term that refers to the traditional teaching strategy that relies on explicit teaching through lectures and teacher-led demonstrations.

In this method of instruction, the teacher might play one or all of the following roles:

Formal Authority	Expert	Personal Model
Formal Authority teachers are in a position of power and authority because of their exemplary knowledge and status over their students. Classroom management styles are traditional and focus on rules and expectations.	Expert teachers are in possession of all knowledge and expertise within the classroom. Their primary role is to guide and direct learners through the learning process. Student are viewed solely as the receptors of knowledge and information ("empty vessels.")	Teachers who operate under the "Personal Model" style are those who lead by example, demonstrating to students how to access and comprehend information. In this teaching model, students learn through observing and copying the teacher's process.

As the primary teaching strategy under the **teacher-centered approach**, direct instruction utilizes passive learning, or the idea that students can learn what they need to through listening and watching very precise instruction. Teachers and professors act as the sole supplier of knowledge, and under the direct instruction model, teachers often utilize systematic, scripted lesson plans. Direct instruction programs include exactly what the teacher should say, and activities that students should complete, for every minute of the lesson.

Because it does not include student preferences or give them opportunities for hands-on or alternative types of

learning, direct instruction is extremely teacher-centered. it’s also fairly low-tech, often relying on the use of textbooks and workbooks instead of computers and 1:1 devices.

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Flipped Classrooms (High Tech)

The idea of the flipped classroom began in 2007 when two teachers began using software that would let them record their live lectures External link . By the next school year, they were implementing pre-recorded lectures and sharing the idea of what became known as the flipped classroom.

Broadly, the flipped classroom label describes the teaching structure that has students watching pre-recorded lessons at home and completing in-class assignments, as opposed to hearing lectures in class and doing homework at home. Teachers who implement the flipped classroom model often film their own instructional videos, but many also use pre-made videos from online sources.

A key benefit of the flipped classroom model is that it allows for students to work at their own pace if that is how the teacher chooses to implement it. In some cases, teachers may assign the same videos to all students, while in others, teachers may choose to allow students to watch new videos

as they master topics (taking on a more “differentiated” approach).

But despite this potential for more student-centeredness, flipped classroom models are still mostly based on a teacher’s idea of how learning should happen and what information students need, making it chiefly teacher-centered. From a technology perspective, the system hinges on pre-recorded lessons and online activities, meaning both students and teachers need a good internet connection and devices that can access it.

Read More:

- Teach100 Blog #697: Teaching with the iPad in a Flipped Classroom
- Changing Classrooms with Flipped Learning
- Educator Connection: Flipped Classroom Resources from the Teach100

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Kinesthetic Learning (Low Tech)

Sometimes known as tactile learning"or "hands-on learning", kinesthetic learning is based on the idea of multiple intelligences External link , requiring students to do, make, or create. In a kinesthetic learning environment,

students perform physical activities rather than listen to lectures or watch demonstrations. Hands-on experiences, drawing, role-play, building, and the use of drama and sports are all examples of kinesthetic classroom activities.

Though a great way to keep students engaged and, at times, simply awake, very few classrooms employ kinesthetic learning activities exclusively. One reason is that, despite the popularity of learning style theories, there is a lack of researched-based evidence that shows that teaching to certain learning styles produces better academic results External link .

One upside is that kinesthetic learning is rarely based on technology, as the method values movement and creativity over technological skills. That means it’s cheap and fairly low-barrier to adopt, as well as a welcome break from students’ existing screen time. Kinesthetic learning can be more student-centered than teacher-centered when students are given the choice of how to use movement to learn new information or experience new skills, so it’s also adaptable to a teacher’s particular classroom preferences.

Read More:

- Using Classroom Debates to Engage Students
- The Benefits of Puzzles in Early Childhood

- 5 Ways Learning Through Play Improves Early Development in STEM Subjects

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Student-Centered Methods of Instruction

Differentiated Instruction (Low Tech)

Differentiated instruction is the teaching practice of tailoring instruction to meet individual student needs. It initially grew popular with the 1975 Individuals with Disabilities Education Act External link (IDEA), which ensured all children had equal access to public education. The Individualized Education Programs External link (IEPs) that started under IDEA helped classroom teachers differentiate for students with special needs. Today, differentiated instruction is used to meet the needs of all types of learners.

Teachers can differentiate in a number of ways: how students access content, the types of activities students do to master a concept, what the end product of learning looks like, and how the classroom is set up. Some examples of differentiation include: having students read books at their own reading levels, offering different spelling lists to students, or meeting in small groups to reteach topics.

Though differentiation is focused on individual student needs, it is mostly planned and implemented by the teacher. And technology, though a potential aid, is not a hallmark of the differentiated teaching style, making it a fairly traditional, low-barrier method to adopt.

Read More:

- Engaging Gifted and Talented Students
- How to Engage a Classroom of Diverse Learners
- Become a Gifted Education Teacher

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Inquiry-based Learning (High Tech)

Based on student investigation and hands-on projects, inquiry-based learning is a teaching method that casts a teacher as a supportive figure who provides guidance and support for students throughout their learning process, rather than a sole authority figure.

In this method of instruction, the teacher might play one or all of the following roles:

Facilitator	Personal Model	Delegator
Facilitators place a strong emphasis on the teacher-student relationship. Operating under an open classroom model, there is a de-emphasis on teacher instruction, and both student and educator undergo the learning process together. Student learning loosely guided by the teacher, and is focused on fostering independence, hands-on learning, and exploration	Teachers who operate under the "Personal Model" style are those who lead by example, demonstrating to students how to access and comprehend information. In this teaching model, students learn through observing and copying the teacher's process.	Teachers act as a "resource" to students, answering questions and reviewing their progress as needed. Teachers play a passive role in student's learning; students are active and engaged participants in their learning. The main goal of a Delegator is to foster a sense of autonomy in the learning process.

Teachers encourage students to ask questions and consider what they want to know about the world around them. Students then research their questions, find information and sources that explain key concepts and solve problems they may encounter along the way. Findings might be presented as self-made videos, websites, or formal presentations of research results.

Inquiry-based learning falls under the student-centered approach, in that students play an active and participatory role in their own learning. But teacher facilitation is also extremely key to the process. Usually, during the inquiry cycle, every student is working on a different question or topic. In this environment, teachers ask high-level questions and make research suggestions about the process rather than the content. At the end of the inquiry cycle, students reflect on the experience and what they learned. They also consider how it connects to other topics

of interest, as an inquiry on one topic often results in more questions and then an inquiry into new fields External link .

Inquiry-based learning can make great use of technology through online research sites, social media, and the possibility for global connections with people outside of the community. But depending on the subject at hand, it doesn't necessarily require it.

Read More:

- Teach100 Blog #942: Inquiry-Based Learning
- 9 Maker Projects for Beginner Maker Ed Teachers

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Expeditionary Learning (High Tech)

Expeditionary learning is based on the ideas of the educator who founded Outward Bound External link , and is a form of project-based learning in which students go on expeditions and engage in in-depth study of topics that impact their schools and communities.

The learning in this model includes multiple content areas so that students can see how problem-solving can happen in the real world--ideally, their own worlds. A student in a big city, for example, might study statistics about pollution, read information about its effects, and travel to sites in their

city that have been impacted by the problem. When they have a good understanding of the circumstances, students and teachers work to find a solution they can actively implement.

Technology-wise, G Suite (Google Docs, Sheets, and Drive) and internet access can aid student research, presentation, and implementation of projects. But it's the hands-on work and getting out into the community that’s the cornerstone of this methodology.

Read More:

- Teach100 Blog #153: I'm a teacher, get me OUTSIDE here!
- Take it Outside: 6 Ways to Use Nature in Your Lessons
- The Magic of a Field Trip

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Personalized Learning (High Tech)

Personalized learning External link is such a new educational model that its definition is still evolving. At the heart of the model, teachers have students follow personalized learning plans that are specific to their

interests and skills. Student self-direction and choice in the curriculum are hallmarks of personalized learning.

Assessment is also tailored to the individual: schools and classrooms that implement personalized learning use competency-based progression, so that students can move onto the next standards or topics when they've mastered what they're currently working on. That way, students in personalized learning classrooms can progress to work beyond their grade level as they master topics, while students who need additional help have that time built into their daily schedules as well.

There's also room for an emphasis on college and career readiness in personalized learning environments. Students who don't require remediation or extension work can instead work with teachers to nurture social skills and other or 21st-century skills lessons and receive mentoring.

Personalized learning is extremely student centered, but teachers are required to teach lessons, look at frequent assessment data, and meet with students to make any necessary changes to their learning plans. They'll also need to have a certain comfort level with technology: the differentiated and personalized instruction that students receive often come in the form of online lessons and

programs, so teachers must be able to navigate virtual platforms with ease.

Read More

- What Does Personalized Learning mean for Educational Design?
- How Technology Changed the Way I Teach My Students

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Game-based Learning (High Tech)

Game-based learning comes from the desire to engage students in more active learning in the classroom External link . Because they require students to be problem solvers and use soft skills that they will need as adults, games are a great way to encourage a “mastery” mindset, rather than a focus on grades.

In a game-based learning environment, students work on quests to accomplish a specific goal (learning objective) by choosing actions and experimenting along the way. As students make certain progress or achievements, they can earn badges and experience points, just like they would in their favorite video games.

Game-based learning requires a lot of time and planning on the teachers' part. Fortunately, there is software that makes this process much easier, like 3DGameLab External link and Classcraft External link . Teachers who use this software may be better at differentiating quests for students because of the data the programs provide.

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