

IN Focus

INTEGRATED CURRICULUM

The terms *integration* and *multidisciplinary* have been around in education for a long time the world over, and more so in India, renowned for its *Gurukul System*. The aim of education in ancient India was not just the acquisition of knowledge as preparation for life in this world, or life beyond schooling, but for the complete realization and liberation of the self. World-class institutions such as Takshashila, Nalanda, Vikramshila, Vallabhi, set the highest standards of multidisciplinary teaching and research, hosting scholars and students from varied fields & countries. Over time, it lost its value.

Integration & *multidisciplinary* recently shot into academic focus again due to **NEP 2020**, which lists them under the Foundational Principles of the new policy -

"... multidisciplinary and a holistic education across the sciences, social sciences, arts, humanities, and sports for a multidisciplinary world in order to ensure the unity and integrity of all knowledge..."

"...the Secondary Stage will comprise of four years of multidisciplinary study, ... and offer greater flexibility and student choice of subjects." Further in the NEP chapters, there are numerous references to the terms in the context of setting up multidisciplinary HE institutions, multi-disciplinarity in under-graduate programs, and in Teacher Education for B Ed programs.

To *'integrate'* is to merge, adapt, synthesise, include and coordinate *'Integrity'* is a quality featuring a whole that is formed by the unity of constituent parts or elements, in an internal balance. From the *integration* aspect, it is important to especially point out the *importance of inner balance* so that in the teaching / learning process, all aims and tasks of initially separate elements as the contents of independent subjects are holistically accomplished in the educational process, including all aspects of *personality integrity*. This issue offers insights on many terms and strategies on *multidisciplinary*.

WONDER WORD

Subject / Curriculum integration

The use of the term Subject Integration is actually misplaced. What the education space intends to refer to is **Curriculum Integration**, since a curriculum is made up of varied subjects and combining/blended the concepts of each domain into the topic would result in a curriculum that is *'integrated'*. So, Curriculum Integration (**CI**) refers to combining two or more subjects when teaching a topic. It involves integrating the subject concepts, subject content (the facts or substantive knowledge), as well as the subject competencies (or skills, attitudes & behaviour) developed while exploring and understanding the topic.

For **CI** to be effective, the subject concepts and content from the different subjects should be *complementary* so that their integration has the potential to enrich student understanding in **depth** rather than breadth (**more** vs many).

“Breakthrough innovation occurs when we bring down boundaries and encourage disciplines to learn from each other.”

— Gyan Nagpal

QED Talk

NEP 2020's focus on KNOWLEDGE OF INDIA & THE WORLD

MR. GIRI BALASUBRAMANIAM (PICKBRAIN)

Founder & CEO of Greycaps India Pvt. Ltd., Global Awareness Program (GAP)
Nominee of Global Innovator Award 2005-06 by MIT (USA) + Internet Oscar in 2001
Asian Internet Awards (Singapore) + Devang Mehta Award (Min of ICT - GOI),
Recipient of CM Asia Award 2004 & 2005, SEVEN Limca Book of Records for quizzing,
Appreciated by Dr APJ Abdul Kalam, Dr Edward De Bono, Prof. CK Prahalad



■ What in your view is 'General Knowledge'? Is it synonymous with 'General Awareness'?

People tend to use the two terms interchangeably, however there is a difference. General Knowledge is a human intelligence tool. It helps a person draw from existing and documented experiences or facts or education. General Awareness on the other hand, is your level of cognizance of anything.

■ In what ways can General Knowledge be beneficial?

General Knowledge is arguably one of the most powerful tools to enable success. It can be beneficial in several ways; to list a few:

1. **Communication:** It can make a person an impressive communicator. The more you know, the more you bring to the table.
2. **Confidence:** People who are well read or well aware, are seen and accepted to be more confident.
3. **Feel Good Factor:** People who know stuff are normally seen to be happy people. Ignorance can make people restless while knowledge can make one calm and composed.
4. **Taken Seriously:** People with good general knowledge are often taken seriously as they can add a lot of value. In work environments these people are often invited to solve problems, create innovation or envision the future.
5. **Keen Learners:** People with high GK come with high curiosity. This makes them keen learners who like anything that is new. Ignorance is an attraction to them.

“ The importance of general knowledge and current affairs goes far beyond being able to come up with answers or start conversations. General knowledge makes you street-smart and helps you make well-informed decisions.

■ Typically, across most schools, GK has been treated as a separate subject, assigned a separate period, and complemented with specifically GK titled books. In your opinion,

- Can GK be 'taught'?

A big big YES! General Knowledge has to be taught as it does two key things. It ignites the curiosity of a child and more importantly makes the child appreciate information and not restrict learning to a boundary called syllabus. In fact, I would advocate to parents to not put their wards in a school that does not have GK; almost like running a school with NO sports period!

- How can one acquire a fair degree of awareness in this field?

GK brings in the love to know more. Once that sets in, the curiosity to know more becomes a part of the DNA of a child, making the child seek out more and more. Areas like general knowledge also make information fun and therefore attracts children. Progressive institutional leaders who recognise the reality that the jobs our children of today will work on when they grow up, do not exist at this point in time, will embrace areas like GK to widen the spectrum of knowledge and not restrict the child to an examination based learning.

”

Your brain has a capacity for learning that is virtually limitless, which makes every human a potential genius

— Michael J. Gelb

■ **Why do you think NEP 2020 has laid such a lot of emphasis on 'Knowledge of India'?**

We are a nation that was sought after and respected by the entire world for its knowledge. In fact, the world came here to study. Somewhere along the long path of history that knowledge was lost. The vast *Knowledge of India* is something that gives us pride, gives us an identity as learners. If one looks deeper, it can guide our purpose to achieve far more. As the world shrinks with every passing day, our children are going to be working in every corner of the world. *Knowledge of India* will help brand India impressively if our children know our own culture and heritage better. Indigenous Knowledge should not be integrated in isolation but rather used as prior knowledge in line with the philosophical teaching principle of starting from the known and moving to the unknown. I do hope every school takes this up seriously and builds the India Quotient in their children.

■ **'Integration' and 'multi-disciplinarity' are 2 prominent terms in NEP 2020. How do 'Knowledge of India' and 'Knowledge of the World' feature in these pedagogical approaches?**

Children learn easily when they relate to something. Children recall very easily when what they learn is *contextualised*. Every aspect of what is taught in class can be blended to both *Knowledge of India* and *Knowledge of the World*. Imagine the learning impact in a classroom where a teacher allocates 2 to 3 minutes to either start or end a session by contextualising with example of where in India or the world can one see or experience what is or was discussed in class. NEP 2020 is so right in bringing it into focus.

“

In the modern world, quizzing is a sport. People play hard to win and in most cases, play the game beyond the prize to enjoy the sheer thrill of knowing an answer.

■ **What motivates the youth to strive for KBC, or TCS - IT quiz, or Tata Crucible, etc. ?**

Knowledge has a very high *showcase* value and creates positive impressions that can last very long. As humans we all love to display what we know. I always carry this view, that everyone surely has enough topics where they can speak endlessly. We as humans are learning all the time, even if we are not consciously seeking to learn. When someone questions you on that observation skill or knowledge and you are able to answer it, the resultant release of hormones makes you feel happy. Over time it becomes a habit to be part of such activities.

In the modern world, quizzing is a *sport*. People play hard to win and in most cases, play the game beyond the prize to enjoy the sheer thrill of being challenged and knowing an answer... like a dare!

■ **Where do you think Indian students rank in 'Knowledge of the World', vis-a-vis their counterparts the world over ?**

Indians do very well when it comes to *Knowledge of the World*. While we credit our success as a nation in the field of IT etc..., we sadly do not credit that history and geography teacher who created the comfort factor in the Indian to not feel alien in a foreign land and to be able to impress the natives with their knowledge. It is this aspect that made us click internationally besides knowing how to move that mouse!



READ TO SUCCEED

FOR TEACHERS

ART INTEGRATED LEARNING (Guidelines)

- by **NCERT, India**

This handbook is available free of cost from the NCERT website. The handbook is crucial in hand-holding teachers as they learn the meaning, importance, place and process of art integrated learning in schools. The book is well-structured with chapters on stage-wise learning - Planning of activities (content, time, resources), Strategies for Implementation, Assessment of A-I-L, as well as suggested Projects and Activities.



FOR STUDENTS

BAREFOOT HUSSAIN

- by **Anjali Raghbeer**

This book is great food for thought, in which the artist has lost his shoes and the protagonist, Jai, attempts to help him find them in the best sort of magical fantasy for children. They zoom in and out of some of the author's most famous paintings, discovering various themes along the way, and the story is punctuated with a nod to the artist's celebrated free spirit. A fantastic and seamless blend of art, knowledge and fiction narrated both engagingly and imaginatively.

■ **Your nickname is 'PickBrain'; how did you get inspired into building a career path as in the field of General Knowledge ?**

I was fortunate on multiple fronts. First, my parents recognised the need to put me in a school that looked beyond academics. That influenced my spectrum of learning. Second, my school celebrated knowledge in every form and in retrospect I see great value in all those debates and quizzes we spent time on. Third, to shape a career from a passion, I was blessed to have mentors who pushed me to strive for more and not give up. It included people like Dr. Abdul Kalam who would always say, "*Ignorance is a disease, we have to eradicate it.*"

■ **Over the years as a Quizzer and later as a Quiz Master, do you see a shift in the quantum, quality of knowledge in students? Do you think digital technology had any part to play in it ?**

Absolutely yes! Knowledge is today at the click of a mouse. In my school days, it was directly proportional to time spent at a library or with books. Students these days are far far more aware and knowledgeable compared to where we came from. In fact, it is the quizmasters who are nervous these days on stage hoping some of their questions go unanswered!

■ **Your final word.**

Knowledge makes your 'success' ability UNLIMITED! Embrace it. Celebrate it.

QED Feed

INTEGRATION & MULTIDISCIPLINARITY

-CHANGING THE FUTURE OF TEACHING (PART 1)

- **Dr. Anuradha Sridhar**

Head - Curriculum Development & Training, Aditya Birla Education Academy

Social media, the Internet of Things and other technological advancements, such as artificial intelligence, are changing the way we live, work and interact with each other. These changes are blurring the lines dividing the physical space, the digital space and the biological space. When a connection between these three spaces is disrupted, a problem emerges. These problems may influence nations, societies, the environment and the economy, to name a few. The more sectors these problems influence, the more complex the problem becomes.

The problems of the world are not organised in a manner that subject groups are arranged and taught. So why view subjects in terms of disciplines and not teach them in an integrated manner? The key words today in schools are student-centric learning, authentic student learning experiences, and skill focused education. Engaging with the curriculum and real learning is often related to student success. According to researchers, students are more motivated to learn when

- they need to acquire knowledge (to accomplish something they care about),
- they are curious (about an interesting and challenging problem), and
- the material relates to their own lives (Svinicki 2002).

So as teachers, we need to create classrooms that will motivate students to learn by integrating academic curricular areas with each other and community issues they care about. A very powerful strategy that teachers can use to make learning relevant is to place academics *within the context*

of issues and problems from the world of work and issues around us. An integrated curriculum connects different areas of study by linking unifying concepts. This cuts across subject-matter and allows student to engage in relevant, meaningful activities that can be connected to real life.

Over the years, the *varied terms* associated with integration of curriculum have grown, evolved and emerged as *distinctive approaches* each within their own space. In fact, we can use this mnemonic to remember the order of progression of the 'degree of mixing' by asking this question:

IS MIXING CURRICULUM INDEED TRANSFORMATIONAL?

I - Intradisciplinary M - Multidisciplinary C - Crossdisciplinary
I - Interdisciplinary T - Transdisciplinary

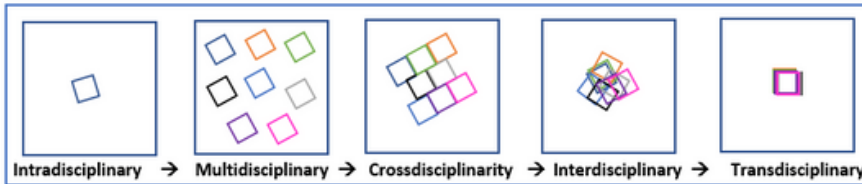


Fig: 1 Figurative representation of forms of integrated approach

Intra-disciplinary approach:

All aspects related to the topic/theme/subject is taught within the boundaries of one subject in class, (like English, Math, Science, SS, music, art, ICT, theatre, dance, sports, etc) being taught in their individual compartments.

For example: A fruit dish with only one fruit.



Multi-disciplinary approach:

This approach relates different subjects around a common theme, for example, the theme ENVIRONMENT. In this approach, there are distinct **knowledge** and **skills element** of different subject areas related to the common theme that students must attain.

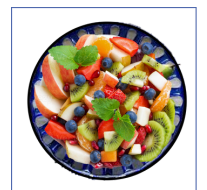
In our fruit dish example, it would look like a plate of different fruits, which are uncut, easily identifiable as separate fruits, but in being grouped together they address one goal (fruit salad).



Cross-disciplinary approach:

In this approach, different subjects are viewed from the perspective of the other subjects around the central theme. In this approach, teachers **merge knowledge** and **skills** of different subject areas under the common theme.

Our fruit dish would now look like a mix of cut-up fruit pieces, whose juices are mixed as a fusion of flavours, but one can still identify the separate fruit pieces.



Inter-disciplinary approach:

In this approach, teachers organise the curriculum around common learnings **across disciplines**. Learning happens through the integration of knowledge and methods from different subjects and synthesising into a new whole. For an interdisciplinary unit to be successful, the planning and designing of the unit needs to be effective.

Our bowl of delicious mixed fruits now has some softened blurred elements / blended elements lying in a bed of juices; the original ingredients still partially distinguishable, but overall, it looks like a dish of blended fruits.



Trans-disciplinary approach:

Transdisciplinary working produces a new, novel form or way of working beyond the original disciplinary boundaries. The subjects coexist **without any boundaries** and the learning is happening holistically from all angles/all domains in a real-life situation, with laterally wide and deep learning. Students develop life-skills as they apply interdisciplinary and disciplinary skills in real – life context.

Finally our fruit dish has become a fruit SMOOTHIE ! You can no longer see the form of the individual ingredients as they have become mixed and taken on a different form, texture, look and flavour.



Approaches that best align to Integration :

In these modern times, when learning has taken a new meaning and the Alpha generation are bursting with immense potential. Educational Goals and Spaces must offer opportunities for the 4 major Cs (*Collaboration - Communication - Critical Thinking - Creativity*), within the approach of Interdisciplinary Learning, at the very least (if not Transdisciplinary). Some of the strategies that work best for integration are :

- Problem & Project based Learning
- Inquiry based Learning
- Simulations & Case Studies
- Design Think for Real-world issues

“The goal is to create an interdisciplinary unit between two or more disciplines using common and central questions that we don't just hope will show our students the connections, but will help them make the real-world connections.”

- Dr. Heidi Hayes Jacobs

Although it is challenging to plan for integrated approaches and even more difficult to have holistic assessments within our systems, it is worth the teacher-time as it helps in serving all students and types of learners while engaging students and inviting them to go beyond the traditional assignments. Students learn best when doing projects and learning that exists outside of the classroom and takes them into the real world (Ellis & Stuen, 1998).

The key things to keep in mind while we look at an integrated approach is Teacher planning of the learning experience in detail and not superficial connections, select achievable learning outcomes and select activities that are appropriate and meaningful for the students.

NOTE : In Part 2, we will share about how to plan for integration of curriculum for school students, as well as ways to assess them, with suitable examples.

MAGIC In The Class

K-W-H-A-L-Q CHART

Most educators have heard of or read about or actually used the strategy of K-W-L in class. Some have extended that into K-W-H-L. What do all these acronyms stand for?

K-W-L : stands for what I **KNOW**, what I **WANT** to know or **Wonder** about and what I **LEARNT**. The extended form **K-W-H-L** adds on the element of **HOW** - How will I learn about what I Want to know?

K	W	H	L
• Record of students' existing knowledge	• Record of what students want to know or are wondering	• Record of how to achieve what is hoped to be achieved	• Record of what has been learned or achieved

K	W	H	L	A	Q
What do I KNOW ?	What do I WANT to know?	HOW will I find out?	What have I LEARNED ?	What ACTION will I take?	What new QUESTIONS do I have?
We need to think about this before we begin our research.	This is our open question.	Where we think about the small questions!	Where we answer our open question after finishing our research.	How will you share this information with the world?	After doing all this work, what are you still wondering about this topic?

The December 2022 issue will focus on **ICT in Education & Digital Literacy**. Please, send your contributions of an effective classroom strategy / class humour / vocab word / a featured article / book titles, to - team@qedrak.com

RIB TICKLERS

Residential schools have their fair share of funny moments extending into the living quarters of students. The general tendency of kids being 'late' (for just about everything) is all too familiar. One warden shares about how he went for the last inspection after 'lights out' and found to his surprise the entire row of elementary aged boys fast asleep, in their uniforms, belt, shoes, tie... the works! He asked a fidgety one, still awake, as to what the matter was. He was duly informed that it was a collective strategy to **SAVE** time in the morning and get the few extra winks. They had even brushed their teeth twice (one for the night and one for the morning)!



KWL chart

Name _____
Date _____

Topic: _____

know	wonder	Learned
Before you read, write what you think you know about the topic.	Before or during your research, record questions about the topic.	After you finish reading, write what you learned about the topic.

The elasticity of this strategy is truly amazing! A further extension to the central idea of this is :

K-W-H-L-A-Q which adds on what **ACTION** can I take with my new learning, and what additional/new **QUESTIONS** do I have about the topic. The K-W-H-L-A-Q Chart can easily be used in the Classroom for robust inquiry, group or pair work and truly amazing learning! This chart is a graphic organiser that helps students organise information before, during and after a unit or lesson. It is used to engage students in new topics, activate prior knowledge, share unit / lesson objectives and monitor their own learning. KWHLAQ charts extend the range of a basic K-W-L chart to incorporate more metacognition, and follow-through towards continuing learning and related action.

SRI SRI RAVI SHANKAR VIDYA MANDIR

Mulund, Mumbai



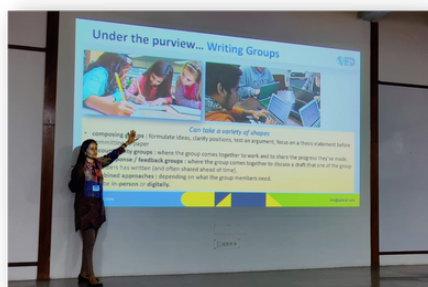
Team QEDRAK's flagship programme *Understanding NEP 2020* found new audience on 18th October 2022, with the Leaders and Teachers of **Sri Sri Ravi Shankar Vidya Mandir School, Mulund (Mumbai)**.

While the participants had been initiated to an overview of this pathbreaking manual for educational reforms, the intricacies of the varied aspects of changes the school needed to review-rethink-revamp (brought forth through the QEDRAK team), gave them all a new perspective and much food for thought.

The day long programme was highly interactive and divided into 2 sessions, with the morning sessions being customised for the teachers of Foundational & Preparatory stages, while the post lunch session addressed the Middle & Secondary stage teachers.

NALANDA INTERNATIONAL SCHOOL

Vadodara



After the successful session on *Understanding NEP 2020* in August 2022 for the Leaders and Coordinators of **Nalanda International School (Vadodara)**, team QEDRAK was back in the portals of the school for another session on 4th November 2022.

This time, the audience comprised the entire team of Facilitators and Heads (spanning KG to Grade 12), as a part of the school's ongoing CPD programme. The topic was a '*much in the limelight*' pedagogical approach being talked about in educational circles - *Collaborative and Cooperative Learning (CL)*. Beginning with the theory of Constructivism, the session covered CL strategies for all 4 NEP stages. The interactivity, sharing of successes and concerns in current classroom practices, thought provoking questions by the QEDRAK team and light-hearted humour made the session all the more engaging, relevant and memorable.

Additional resource : Music As A Language, by Victor Wooten.

Wooten suggests that music learning should be approached in the same way as one learns the first language, with a more natural, less academic approach. Just as when we were babies, we weren't 'taught' our first language or corrected when we made a mistake. Wooten draws on his own musical education as an example of how this approach can give results. Watch : <https://youtu.be/2zvjW9arAZ0>



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