



STONEHILL
INTERNATIONAL SCHOOL

An Embassy Group Education Initiative

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THE STONEHILL NEWSLETTER

Transdisciplinary/Interdisciplinary
Learning at Stonehill

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INDIVIDUAL EXCELLENCE.
COLLECTIVE PROGRESS.
Experience IB, The Stonehill Way



What is Transdisciplinary/Interdisciplinary Learning?

Welcome to this edition of our Triannual Newsletter with a focus on Transdisciplinary and Interdisciplinary approaches to learning.

In today's world, we are facing unprecedented social, economic and most recently environmental challenges, such as the COVID-19 virus, in regions around the world. I am reminded that these changes are driven by the factors of Globalization, Global Warming, and technological developments such as 5G and Artificial Development (AI). Simultaneously, these forces are providing us with opportunities for human advancement. The future is indeed uncertain, and unfortunately, we cannot predict it but we need to be open to it. At Stonehill, through inquiry we can explore these challenges and opportunities, and how they directly affect us, our community and the world.



To traverse through such uncertainty, our learners at Stonehill will need to develop curiosity, imagination, resilience and self-regulation. They will need to respect and appreciate the ideas, perspectives and values of others and move forward in the face of adversity. Our learners will need to care about the well-being of their friends and families, their country, communities, and the planet. This is a tall task, but an exciting one that we are developing collaboratively, with our learners and teachers, using a trans/interdisciplinary approach to learning.

Finally, I strongly believe education has a vital role in developing the knowledge, skills, attitudes and values that enable our learners to contribute to and benefit from an inclusive and sustainable future. Learning to form clear and purposeful goals, work with different perspectives, find opportunities, and identify multiple solutions to big problems, will be essential in the coming years. A trans/interdisciplinary approach to learning will equip our students with the skills needed to become active, responsible and engaged global citizens.

I hope you enjoy this edition!

Respectively,

Brian Brumsickle
Head of School

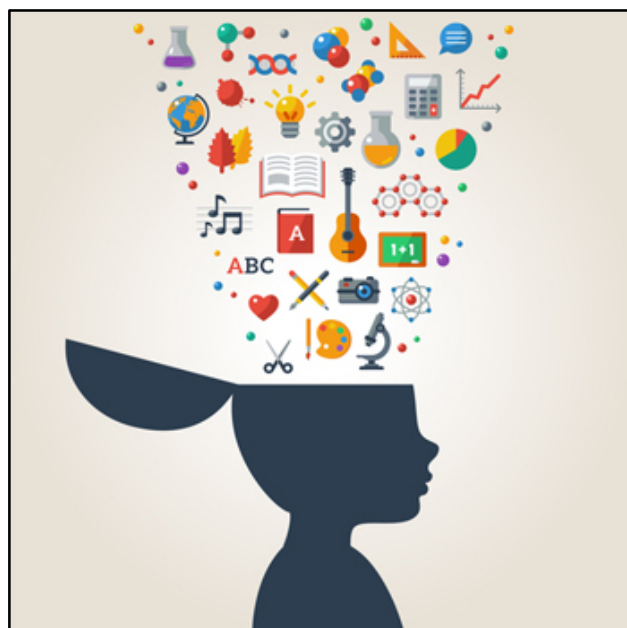


Fig 1

Transdisciplinary Themes in the Primary School

Transdisciplinarity is a term that was developed in the 1970s when questions were raised about the efficiency, practicalities and limitedness of organising, knowing, doing and understanding subject-related silos. After a lull, the concept re-emerged in the 1990s in all levels of education and as a tool for research. “Transdisciplinarity today is characterized by its focus on “wicked problems” that need creative solutions, its reliance on stakeholder involvement, and engaged, socially responsible science. In simultaneously studying multiple levels of, and angles on, reality, transdisciplinary work provides an intriguing potential to invigorate scholarly and scientific inquiry...” (Berstein, 2015).



The Primary Years Programme is considered three dimensional; meaning we build skills, knowledge and concepts. It is the conceptual understanding that is long-lasting and ensures real learning that has transferability. We organise our work around *Transdisciplinary Themes* - how we express ourselves, how the world works, who we are, sharing the planet, how we organise ourselves and where we are in place and time.

Our key concepts are used by both classroom and single-subject teachers to connect learning across all the traditional subject areas. The designated skills (approaches to learning) enliven the concepts by ensuring learners have the tools they need to succeed. Knowledge is the vehicle used for sense making.

Transdisciplinarity is about working within, across and beyond the traditional subjects we learned at school in a more holistic manner.

Karen Crooke
Primary School Principal

Transdisciplinarity in Action in the Primary School



During the transdisciplinary theme, How the World Works, the P7 learners connected with like-minded learners from Mozambique to investigate how “Scientific thinking helps us understand the world”. The P7 learners’ focus was on creating their own lines of inquiry based on their personal interests, passions, and how it connected to the UN Sustainable Development Goals.

Mr. David Towse, our technology coordinator, supported the research process by facilitating the effective use of technology and finding credible research.

The learners connected with experts from the Stonehill community and interviewed them to make real world connections to the research they did using technology.

Mr. Ambareesh, a local farmer, provided hands on opportunities for our young scientists to investigate, make predictions and test their ideas. They used the Design Thinking model and built prototype vermicompost pots. Mr. Srinivas Kandaswamy, MYP & DP Geography and ESS teacher, facilitated the learning experiences by supporting the P7 learners as they modelled and taught the P4 learners about recycling and building a vermicompost prototype. The gardeners, the campus manager, the cafeteria manager, and the P7 teachers worked alongside the learners, as they went around asking questions and documenting their learning. The compost will be used for the After School Activities kitchen garden.

Adriaan Elias
P7 Homeroom Teacher



The P5 teachers and the Arts Team are particularly proud of the accomplishments of the P5 learners in their inquiry into how the Arts are used as a form of expression to communicate and entertain. Through collaboration between teachers, learners and parents, we created learning experiences to weave together a transdisciplinary unit that transcends the silos of subject areas.

Together with the P5 teachers, the learners explored storylines and the connections of events and characters and developed a script. The students inquired into the intricacies of how Japanese Bunraku artists moved puppets to communicate and entertain an audience, through both verbal and non-verbal communication. They also worked with more conventional forms of puppetry and set-building. As with most

performances, the addition of music helps to set the tone and mood. The learners discovered how art and music help to convey messages and support performances under the guidance of Ms. Heather.

Our learners are digital natives and IT is part of everyday life. So, the integration of IT and how it supports the Arts was coached by Mr. David while Mr. Naveen offered support with stage and lighting effects.

Every production needs to be publicised. To help our learners with the publicity aspects of theatre, our school's Communication Manager, Ms. Vinutha, and a class parent Ms. Mahjabeen, shared their expertise helping learners create posters and programmes to share on different media platforms. It is a joy to see the creativity and problem-solving skills of our community of learners working together to create and share their work of art.

Carmen Elias
P5 Homeroom Teacher



The P1 and P2 students went on a walk through the P4 class. They saw lots of investigations with different seeds and 'growing things'. Looking at these plants and seeds, a little voice piped up and said, "Can we do this Ms Sylvia?" followed by other excited voices, "Yes Ms Sylvia, can we?" Our new unit of inquiry was about to begin with the perfect central idea that stories can be told in many ways.

Inquiring into the central idea is one of the many opportunities where everyone is encouraged to share their thinking and their words are recorded authentically. Here are a few examples; Ariyaan says, "Stories are something that we read. They are people's ideas". Mahira says, "I watch Superhero and Batman on TV ". Nessa says, "Stories come from people". Ryan says, "I learn stories about the solar

system by playing a game on the iPad."

Introducing the story of Jack and the Beanstalk initiated learners' original idea of wanting to plant seeds and soon there were, "Please can we plant some magic beans?" This story and the song inspired our learners to experience a range of independent learning opportunities across the curriculum. They retold the story through drawing, role play and made a short skit. With many beans at their disposal, the learners sorted them into different groups and had a go at counting them. They were eager to plant their seeds and wondered what would happen to their seeds under the ground. Teachers supported them by inviting them to put the seeds in transparent bags and observe them as they grew. They asked their parents why plants had roots and shared their responses during our think/pair/share routines. Kimaya shared, "My daddy said plants have roots just like we have legs. The plants have roots because they need to have water and food". Finally, as their beans grew, they used their existing knowledge to measure their plants using non-standard units of measure. The learnings were wonderful transdisciplinary learning opportunities.

Sylvia Gillett
P1/P2 Homeroom Teacher



Picasso is said to have left behind 45, 000 works of art when he died, and it is also roughly the number of years humans have been making art. We know the second fact thanks to science, a worthwhile example of transdisciplinarity in action. Let us look at a week in action:

Monday

Got a chance to drop in on the P8 students to discuss and help them with logo ideas for their exhibition - where to start, how to refine and work ideas. This involved me hurriedly scrawling badly-drawn flamingos on the whiteboard while trying to explain how research has discovered that ideas come from two or more neurons (called hunches) fusing to form new clusters of neurons (ideas), which lead to new innovations.

The P5 students descended en masse to keep building and creating for their production - everything from the set through to the puppets who will inhabit this world. We discussed how different trolls might evolve to suit living in different habitats. There is measuring and mathematics galore as we build a collection to rival Pablo's body of work, from trolls and cat puppets (Science again in terms of elasticity and weight distribution). Ideas are tossed around, scribbled down and traded off like priceless currency.

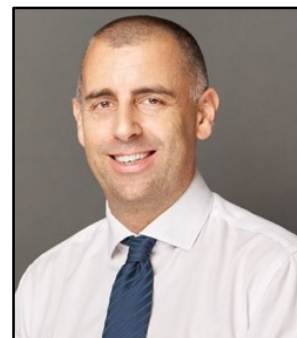
Wednesday-Friday

I reckon four year olds are designed for transdisciplinarity and excel at it, despite having difficulty pronouncing the word. Why? Because they don't categorise the world like the rest of us. Everything is an adventure. They switch on their art eyes and turn into explorers, finding new things in the room which they describe with great enthusiasm before having a closer look. Everything in art should be considered an experiment, and these wonderful little souls take on my ideas with agile minds and hands not far behind, churning out their own very unique interpretations which often take my breath away.

Allistair Quirke
Primary Visual Arts Teacher

The Transition From Transdisciplinary Learning to Interdisciplinary Learning in the Secondary School

The last thing anybody probably needs from a school administrator is more educational jargon to chew on. Parents in international schools must often feel as though they are being bombarded with eduspeak, which can presumably cloud understanding rather than clarify it. Having said that, from a secondary school perspective, it is important that we all understand the difference between two terms: transdisciplinary and interdisciplinary learning.



In primary schools, students tend to delve into units of inquiry through a transdisciplinary lens. They will be with the same teacher for English, Humanities, Science and Maths, and as they work on a particular skill or concept. It will not always be clear to them as to which 'discipline' they are working in. This makes sense when one considers how primary schools are organised, with homeroom teachers covering what secondary schools call 'core subjects'.

At the other end of their school careers (i.e. the DP at Stonehill), students take six subjects, each of which has specific exams and assessment requirements completely independent from other subjects. This is a 'disciplinary' approach to teaching and learning, with teachers responsible only for specific content and skills listed in a syllabus. Secondary schools around the world still rely on such a system as a giant organisational tool, regardless of whether such an approach is relevant to the real world anymore. Students, after all, still enrol in university degree courses that are based almost entirely on a single discipline.

The MYP is designed to bridge the gap between the two approaches. The curriculum is still divided into eight subject groups, however, there is much more overlap in assessment criteria, key concepts and AtL skills across the subjects. This allows teachers to implement an 'interdisciplinary' approach to teaching and learning.

An interdisciplinary approach means that students are exploring a particular concept from a number of different subject lenses, each of which still focuses on developing specific disciplinary understanding and skills. In practice, this often means that students will work on certain skills and content in each of their classes before bringing together those skills to approach a problem that requires such an interdisciplinary approach. MYP schools try to strike the right balance between giving subjects enough time to work on the skills, concepts and content that they need to cover, and giving students the opportunity to transfer the skills and understandings across departments and subject areas in order to engage with real-world problems.

Joe Lumsden
Secondary School Principal

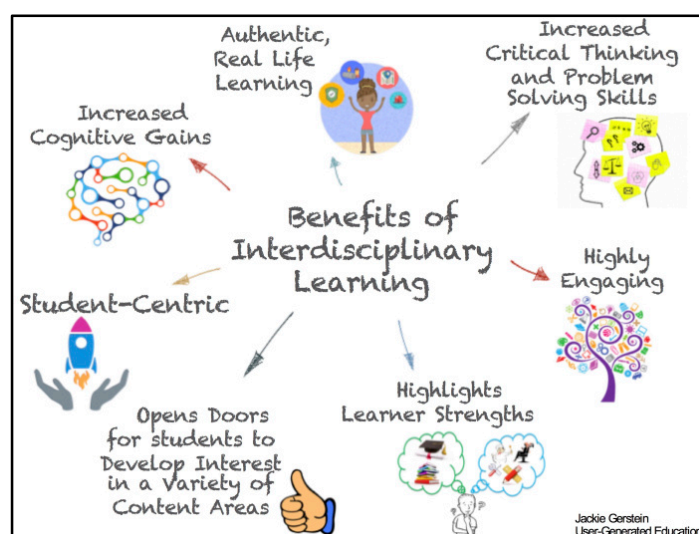


Fig 2



"Will you walk into my parlour?" said the Spider to the Fly - Mary Howitt

The M1 Interdisciplinary Unit on Art and Imagination was full of imaginative techniques and creativity. Language A department in collaboration with Visual Arts developed this unit through the lens of the global context "Personal and Cultural Expression". With a focus on creative thinking skills, the M1 students explored connections between cultural and personal expressions with art, literature and language, and the many advantages of curiosity.

The students engaged in teacher led discussions on enhancing investigation and spreading awareness. They discussed ways to build their learning power and the impact that the social media revolution had on their lives. The key concept here was the exchange or transfer of signals, facts, ideas and symbols through the medium of art!



Interdisciplinary understanding, at the end of the unit, was demonstrated through students making their own video on 'Product Presentation'. In their videos, they synthesized disciplinary knowledge of the language and visual arts and created a product that advised parents and peers on solutions to some of the current problems.

An example of a product is a flower pot with a message, a three clover designed bookmark and a customised plate, created to enliven spirits.

The purpose of this unit was to improve literacy, enhance critical thinking, and nurture creativity. With various visible thinking routines, learning was engaging and dynamic.

We leave you with this question- Can words paint a thousand pictures or does a picture say a thousand words?



Preethi Menon
Language A Department

The Art Detectives



What is Theory of Knowledge (ToK) about? On a particular March morning, it was all about turning a class of high schoolers into art detectives. The class was divided into five groups. Each group was given three paintings attributed to a great artist, except one of the three was a fake. The class assignment was to go to the library and find ways to identify the fake. They could only use the reference books available. They could not use the internet or their devices.

A not-so-happy class of detectives walked reluctantly to the library to search for those archaic pieces of technology, books made of paper. At first, they stared hopelessly at their task, feeling like Sisyphus must have about the enormousness and pointlessness of their task.



Once they began to pull out and read books on art history, biographies, and encyclopedias, the excitement in the library was palpable. 'Look', said one student, 'this pigment did not exist at that time. Chemistry was not advanced enough at the time. This shade of Ochre was invented later. So, this painting is a fake', the student concluded, pointing at the fake 'Sunflowers', thought to be a part of the Sunflower series by Van Gogh. The group learnt how a subject in science solved a historical art mystery.

Over the next two days, the high school detectives found historical inaccuracies, incorrect brush stroke techniques, and many more examples of the history of colours and art, and the chemistry of pigments to justify their identification of the fakes. They demonstrated excellent critical thinking skills, an awareness of multiple perspectives on a problem and an understanding of how knowledge across disciplines is connected.

Teaching interdisciplinary thinking is one of the core aims of ToK and this exercise is one of many that helped the diploma students understand this.

ToK is taught both as a separate class and is integrated into the IB diploma subjects. Students use their ToK classes to develop skills towards examining theoretical and practical knowledge in their chosen subjects. This helps them understand how 'Approaches to Knowing' impact learning. In this journey, they realise that threads connect all knowledge and that subjects seemingly unlike each other have a common wellspring.

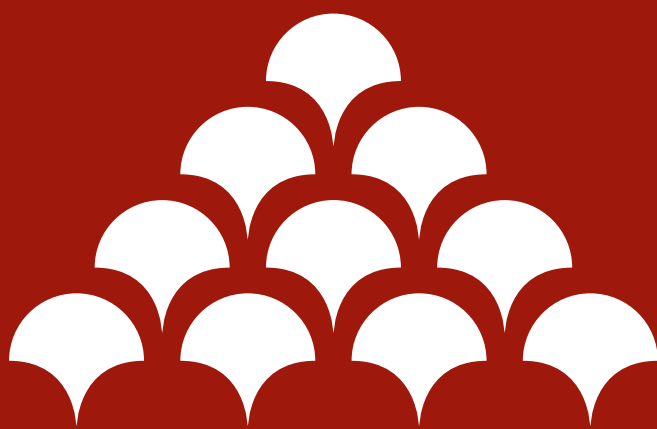
Yasmine Claire
ToK Examiner

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