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Notes from ARC 2017

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Bill Strickland – Plenary session. July 20. A Teacher Saved My Life

- People are born into the world as assets, not liabilities.
- Everywhere you look in the building, there is something beautiful looking back at you.
- Environment drives behavior.
- Beautiful buildings create beautiful kids.
- Hope is the cure for cancer of the human spirit.
- Hope and light cure cancer of the human spirit. The sun is for everyone on the planet, not just the rich kids.
- People are a function of expectations.
- You have to put kids in an environment that allows them to show you what they're capable of doing.
- You want kids to be a part of the world-you have to bring the world to them-artists/technologies/etc.
- You don't have to have a tuxedo on to get treated with dignity
- You are special. You don't have the right to be depressed or upset. Young people are counting on you.

'Equity in education is the Civil Rights issue of our time'- Thomas Dodd – National Principal of the Year – Colorado Middle School Principal

'The very best IB programs are ones in which the head of school is fully engaged as a pedagogical leader.' – Paul Campbell

Dr. Nikki Woodson – Plenary session. July 21. The Stories that Shape our Lives: Inspiring Communities

- As educators we have different options to choose for our students-is it as easy journey? A fast journey? Or the one that is rigorous and requires a great deal from us and from our students? That is the IB journey.
- What changes do we want? What would those changes look like? What do we need to do to get there?
- Quality assurance reflection: Community has input-asked for monetary referendum to pay for staff and construction and renovation; teaching and learning reflection-use program evaluations; student level of reflection-literacy rates; scholarships; service
- Without IB for all, I would not have been exposed-public school is only option for some kids
- Keep what is best for students in the front of your decision making process
- Every student might not need a special adult in their lives, but some do!
- Beautiful minds inspire others.
- Never forget that we are shaping the future of our world through the students we teach

The Future State of Assessment Solutions for Schools
Matt Glanville
Head of Assessment Principles and Practice

- What the on-screen environment allows us to do is to allow a context that is pliable and meaningful to students
- On-screen assessments are the future

The IB Vision for eAssessment

- We need to recognize that the state of education is changing and technology is making an impact on how we educate
- We need to think about how to get the best value out of the technology without breaking what is at the heart of what good teaching is about
- eCoursework to eMarking to MYP Onscreen Assessment to DP and CP Onscreen Assessment
- Onscreen assessment incorporates technology to enhance learning and test higher order thinking and skills
- Oncreeen assessments brings innovation, authenticity and relevancy to exams and provides a more rounded learning experience for students
- By measuring knowledge, concept and skills with interactive, media-rich content, schools can gain further insight into students' academic growth and development
- An internet connection is NOT REQUIRED
- One of the projects he is working on now is to allow schools to run mock exams-still trying to figure out different ways it can be run
- Not multiple choice-still marked by humans…sciences-still will have multiple choice and it will depend on curriculum review-does the multiple choice allow for the best assessment? You can have students actually create models
- About having easy to use and student-friendly technology that immerse students in authentic assessment tasks
- There will be universal tools-highlight tool; calculator that allows you to cut and paste your work on the page-no more calculators will be needed!!!
- Automated clock that will not allow you to keep writing past exam's end time
- Two sets of calculators available-still trying to decide which one to use
- The kids who are given extra time will be given their own personal login that will include extra time
- Accommodation about questions being read to you-also available in this interface
- DP-for the kids who answer more questions than they are supposed to, they will be given a prompt that says 'you've already answered enough'
- Kids can watch videos, watch the experiment, provide data and then transfer that data into different format, and then questions
- If data applies to multiple questions, then the data follows the question so kids know to reference it
- This is an opportunity to ask the questions we always wanted to ask because we were working in a paper-based world…so it's possible that the questions will change because we can ask things differently
- There is more we can do to engage students…in the long term
- In the short term, we most likely will take the questions we've been asking and move them to a digital platform
- Videos/multi-media that can support questions or set the context prior to the questions
- This new online format is going to completely change the way we teach our classes!!! Students need to be used to the format and the delivery of context and questions
- Here's the system-and here is the way to upload the file into it
- How far down the line are we in the process? We are using this eAssessments in the MYP now…now we are engaging in discovery-working with EPIC
- Transition principles for our process going forward: listening to our schools and providing an opportunity for feedback; communicating in a clear and timely manner; supporting a period of preparation and transition for schools; learning from previous steps on the IB assessment digital journey

21ˢᵗ Century Methods Meet Classical Literature

Renee Atkinson

- Students sit in flexible arrangements/structured group
- Structured discussion format
- More purposeful technology
- Differentiated instruction/small groups
- Publish activities on twitter
- #Followers
- You can't be creative and innovative if I never give you an opportunity to show that

Resources online:

- Today's Meet (more controlled environment; gives a transcript of the conversation
- Adobe Spark-for poster making
- Screencastify
- Periscope-on twitter the video option

An example:

- Fishbowl with the inner circle having a Socratic Seminar and the outer circle has the same questions and posts answers/new questions/ideas on twitter-which is projected on screen and then teacher/students can refer to it in lulls in the conversation
- Discussion transcript shared via Today's Meet can be posted
- Adobe Spark-significant quote analysis: students identify specific quote and make it into a poster, write a quote analysis and a reasoning for poster layout and design
- Adobe Spark-can make videos as well-could we do this with learner profile?
- Watch project together with teacher, using rubric, teacher and students critiqued and graded themselves-then they made changes and improvements
- Students need to get comfortable recording themselves-prezi with talking setting up the context of the fall semester work
- Poetry round tables: annotate the poem, have guiding questions; give students one minute each to respond to guiding question and then repeat process; you could have students record each other's responses and then post to twitter; 1 question-have to talk for one minute-groups of 4-then ask second question
- Commentaries with googledocs and screencastify: students take notes in the margin through the comment tabs, then use screencastify to do oral commentary and point to different parts of the poem that are highlighted to practice
- Students could practice paired oral commentary by using googledoc of poem, annotate on side and then do screencastify oral to practice getting recorded
- World Café/Periscope: student groups prep visual teaching aids; one student (host) remains with poster to teach while others travel and take notes. When we do reading, have to create a visual for each section read. Students return to main group. Each group member takes a turn teaching host who stayed behind.
- Periscope is available for hosts or absent students. Teacher does recording of each group and then posts it.
- Periscope is with twitter-live button on twitter-turn comment section off
- Every single student needs the opportunity to talk
- Goose chase: online scavenger hunt; activities that you have to do and you get points for doing it…Langston Hughes poetry-research Charleston and then take video of yourself doing it for points
- Padlet: one work: students pick a motif and add quotes for each motif

- Follow @reneeatk on twitter
- matkinson@horrycountyschools.net
- Follow the class with hashtag #kingsofeng on twitter

Diploma Programme Academic Review and Update

Oksana Jajecznyk, Interim Head of DP and CP Development, curriculum head for dp chem
Jenny Gillett, Senior Curriculum Strand Manager; curriculum head for tok, core

How can you be involved in a curriculum review?
- Look in DP notes on IBIS
- Participate in a curriculum review meeting
- Complete a survey
- Write a commissioned review of materials
- Participate in a focus group
- Participate in a trial

What's new for 2017?
Global Politics course first exams were 2017
- Exploration of key concepts such as power, equality and conflict
- IA 'engagement activity'
- HL: instead of paper three, students do an additional IA
First exams for Nature of Science were in 2017

First teaching in September 2017:
Film, Geography, Psychology and Anthropology for first testing in 2019
Key changes are embedding approaches to teaching and learning in new curriculum

Anthro-focusing on big anthropological questions; engaging with the language of anthropology

For each subject, there will be a subject website (subject reports/forms and coversheets)-these four subjects all have website

What's new for 2018?
Language ab initio and Language B
Subject specific seminars start in February 2018
-identities/experiences/human ingenuity/social organization/sharing the planet are the themes
All three syllabi develop conceptual understandings
Support skills development in the language
Eliminated written assignment and interactive oral. Added: a listening comprehension assessment; modified: ??? check the slides!
New TSM will contain traditional materials (course preparation and features, sample unit plans and student samples)/sample course design
What's new for 2019?
Studies in language and literature
- Updated report on the OCC about what some of the changes are- CHECK IT OUT
- Seven central concepts
- Elimination of the PLT list and the PLA list
- Unified reading list will be created instead
- Elimination of written assignments
- Greater consistency of genre classification; inclusion of song writers and more graphic novelists
Math: now have four courses; will go down to two courses that have both HL and SL
- Approximately 60 hours of common material across both SL courses; 30 hours will be allocated to developing ATL skills, collaboration, modelling, inquiry skills and for the IA
- New IA will be based on the current exploration model with some modifications

- A detailed summary report is available on the OCC – CHECK IT OUT!

Initiatives
- Student workload and student stress: pilot study
- How demanding do students find the DP? What particular courses are most demanding?
- Findings: students reported feeling less physically healthy, decline in happiness; girls, parents who have lower education, parents who are less involved all experience more stress
- Students want more resources; online resources; being allowed to double up a bit more-use the same ee and ia topic
- Students need a clear calendar of IA's to be less stressed as well
- Also looking at flexibility in the program (where do we offer it at the moment? Where are we not flexible and why not?)
- What can we provide that will still allow us to keep integrity of the program
- Coordinators want more transdisciplinary subjects; a three year DP program in various situations; flexibility in building a six subject package
- Psychology could become a group 3 or group 4
- Is the DP undertaking a programme review? We are considering the DP's flexibility and looking at known problems the program currently is experiencing
- Working to try to simplify rules and regulations for DP coordinators
- Evaluating whether some SL only subjects can become SL/HL

Q and A:
- What will the Math Studies students take? Will there be a Nature of Math option? It is there in the Applications of Mathematics
- Looking to expand extended essay dual subject options-at the moment, trying to push that through the world studies options
- Global Politics is a great course that brings together a number of group three courses
- 2019/2020: role of the coordinator/standards and practices is being updated
- World Religions as an SL and HL- this is something that they are looking into but they are trying to see if there is enough to build on or if it will just be a review of previous material
- Universities are included in the reviews of courses to make sure that the changes get feedback throughout the process
- Please use G2's post-exams because they are critical in the grade review process
- Are there any updates on the evidence that is going to be required for self-study? It's not about adding new things-showing evidence of how you are doing atl more deliberately, more specifically, evidence of explicit planning-see it more as strengthening; across a course, all subjects need to be contributing to a development of ATL skills…
- TOK: looking at doing something completely new with internal assessments and will be completely different in 2020 with new curriculum implementation

Any questions about the future of courses and the programme: dpdevelopment@ibo.org

<u>Marcelo Suarez Orozco</u> – Plenary Session July 22
Dean of UCLA Graduate School of Education

- Educating the Whole Child for the Whole World-The Ross Model and Education for the Global Era
- 3 M's of Globalization: Markets, Migration (human face of globalization), Media technologies (stimulate new longings and new belongings)
- If you have schools in the 21st century, you will have growing numbers of immigrant children in your school
- How do we educate the whole child in the whole world? Being mindful that the world is changing
- Every second, 25 people will cross a border

- Consider moments of profound transformation: Lehman Brothers collapse, Arab Spring, Nationalist movements in Europe
- Growth of global exchanges over time is the dominant conclusion of globalization
- Migration is a fundamental human experience
- Human movement is written in our genome
- Worldwide: 1 in every 8 children is a refugee
- In 2017, 20 million children are international migrants; 28 million were forcibly displaced
- For the first time in US History, more than 50 percent of children under age 5 are minorities
- How do we get to super-excellence in education for these children in this time of extraordinary change?
- There are three problems in education today: lack of equality and the empathy of that disadvantage; the widely acknowledged general failure to fully integrate large numbers of children of color in the US and other high income countries; the US school to prison pipeline…boredom has become the elephant in the class room; disengagement of children from the work of school-boredom is the antithesis of curiosity and engagement in the classroom; persistence of opportunity gaps and inequality
- Inequality in college graduation rates: children in richest 20% of families have a 60% rate of graduation; children in poorest 20% is below 10% graduation rate
- Three principles for education in an interconnected world: 1. Education for doing and living well-the flourishing ideal of Eudaemonia(a child should be able to become a fully autonomous citizen of the global world); 2. education for civic engagement, belonging, participatory and transformative citizenship; 3. education for the transition to the ever more globally integrated labor market
- Education is a nostalgia about the future.
- Education is a tool for democracy. Education is not a preparation for life-Education is life!
- Today, entire categories of work are disappearing. And if our idea is to teach students in these categories of work, we need to rethink…anything that is today considered a mundane cognitive task is disappearing in the future.
- Children growing up today are more likely than in any previous generation to face a life of working and networking, loving and living with others from different national, linguistic, religions and racial backgrounds. In the US today minorities make up 46.5 percent of the under 18 population. 10 states are now minority majority states in their under 18 population (including Maryland and DC)---working across cultural and linguistic boundaries will hence forth have a huge premium
- Managing complexity in the 21st century will require an education for life-long cognitive, behavioral and relational and civic engagement
- The skills needed for identifying, and analyzing and mobilizing to solve problems form multiple perspectives will require individuals who are: intellectually curious and cognitively flexible, tolerant of ambiguity, able to synthesize knowledge within and across disciplines, culturally and linguistically sophisticated and able to work collaboratively in groups made up of diverse individuals
- Best practices for a global era: well-grounded in core subjects and strong language supports; transformative citizenship; cultural sensibilities; interdisciplinary thinking; self-awareness; beyond critical thinking and lifelong learning skills; communication skills and public speaking skills; collaborative skills; life skills of leadership, adaptability and personal accountability
- Only the education of children will lead us out of the paradox that we live local lives in a continually global world

Implementing a School-Wide Inclusive MYP – What does it take?
Karen Schade, CEO School Lane Charter School (Bensalem, PA outside Philly)
Lee Ann Gordon, VP Learning Support Grades 7-12

www.schoollane.org
Academics, ib information, ib at slcs
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Objectives:

- Describe the intersection of theory and practice that support a heterogeneous classroom
- Explain how school leadership team can create a culture in which students experience academic and social emotional success
- Examine differentiated units of study where all students make academic progress
- Highlight a differentiated summative assessment and scoring rubric

The short version:

- Creating an inclusive school environment is a process that takes time
- Understanding and believing in tin the theories that support an inclusive school are a must
- Actions by the admin staff help develop a school culture of inclusion
- Once the cultures is created, changes to teaching practices come to fruition

Socio-Cultural Theory of Learning

- Students have to be able to imitate someone; they need things that are repetitive so that they can practice
- Stems from the concept that there is a connection between the historical cultural meaning of symbols and words and cognitive understanding of such symbols and words
- The uniqueness of Vygotsky's approach lies in his understanding of disability not as a biological impairment but as a socio-cultural developmental phenomenon. A physical or mental impairment could be overcome by creating an alternative, but equivalent, road for cognitive development. You have to create a different path for some students in this situation
- Within the vision statement for the school: everyone is recognized as having a capacity for learning and unique patterns reflecting multiple intelligences. Our responsibility is to help each student discover their giftedness and learn to use their minds well. Our expectation is of high achievement for all. Through positive attitudes and flexible thinking, each of us can make a difference.
- Inclusive schools: a way of life, a way of living that each individual is valued and does belong…when we can help our students see beyond labels to the people underneath, when we can get them to acknowledge and move past fear and discomfort to accept those with mental and physical disabilities and reach out in genuine friendship, then we can see we've created an inclusive environment.
- Restructuring heterogeneous classes for cognitive development: social interactive perspective. Instructional Science

Inclusive school norms:

- Social interaction must be the rule rather than the exception
- Students are active and discussions are boisterous
- Students must feel safe in order to voice their point of view (intellectual safety-it's okay for a student to have questions and to make mistakes-mistakes are the places to make growth)
- All students must feel accepted as part of the class (have morning meeting in younger grades)
- All learning tasks for all students are meaningful and support everyone's learning (it's not that you give some kids 5 problems and others 10-everyone needs to be able to contribute to the community and not feel separate from the community)

First steps in creating an inclusive school

- Walking the talk of our mission and vision
- Build a culture of understanding about how students learn differently

- Recognizing the work of the teacher in an inclusive classroom is difficult (teachers need support)
- Piloting a co-teaching model for instruction (most of our classes are now taught with co-teachers)

Extensive professional development
- Must be provided with pd in inclusive practices
- Must instruct their students on good questioning and listening techniques so that productive intellectual conversations occur in social interactions
- School admin must hire teachers with a positive attitude towards all students participating in regular ed classrooms

Professional Development:

Culture changing: creation of school motto and pledge; personality categories; teacher autobiography reflection (who are you as a teacher? Why did you get into this field? Put them all together but without names-did this in the spring-then in the fall, pass out book, read and highlight important words that are meaningful-this is a Quaker meeting-everyone sits in a circle and are silent-then you when you want to, take a piece of what you read and share it out loud-became a community and reiterated why we were all there and how reflective it was of the mission statement(from the book Why am I teaching?); this I believe reflection (book from NPR-what is your core belief about educating kids?); collaborative problem solving; the learning challenge (reflect on how you learned this thing); book club

Instructional strategies: multiple intelligences; differentiated instruction, co-teaching; needs of exceptional students; questioning techniques; meaningful talk

Book Club titles:
- *Fair Isn't Always Equal*
- *Opening Minds: Using Language to Change Lives*
- *The Power of our Words*
- *Teaching Children to Care*
- *Teaching Matters: Motivating and Inspiring Yourself*
- *Productive Group Work*
- *Grading Smarter, Not Harder*

Special ed teachers are called learning support teachers

Planning for differentiation:
- Content: what we teach and how students are given access to the content
- Process: how students learn and gain understanding, knowledge and skills of the content material
- Product: how the student demonstrates through performance their level of knowledge and skills regarding a topic
- Learning Environment: a flexible environment that addresses how time, space materials and individual learning preferences are addressed

Command terms are where you differentiate-how each student identifies their knowledge is how they are differentiated
You should have a prerequisite list of vocabulary that sets the context for a unit-it's like doing pre-teaching

SNAP and READ-purchase program that is downloaded onto student computers- extension on a chrome book that does highlights, vocabulary and translations while you read (also has a voice to text capability; note-taking device that creates an outline along the side)

Introducing the IB's new community forum centre
Liz Scheier
Jenna Rosen

Why we have created the communities? Where are we moving in the future?
Timeline
Demonstration
Questions and feedback

A space for IB edcuators, coordinators and others from candidate and authorized schools to communicate, collaborate and

Timeline:
March 2017 Heads Engage comes available
June 2017 The Programme Communities comes available
Mid-August: IBEN Engage comes available

Programme Communities
- Community for the IB community to collaborate, communicate and create
- Replaces the occ
- Accessible to authorized and candidate schools
- Ability to create groups for closer collaboration
- Can share files, ideas and receive support on questions

Features:
Discussions: users can ask questions and discuss topics of interest
Discussion threads and related functionalities

Search functionability:
Navigate discussions by topic and category

Groups:
Community owners/adminstrators can set up groups for special purposes, including regional coordination
Private groups and related functionalities (create groups, request access, restrict access, etc.)

File sharing:
Share files with one another by attaching to posts
Localization:
Navigation text will appear in your preferred language
Private messaging:
Direct message your colleagues, other workshop participants, and friends

Need to send link to teachers to sign up for MyIB

Welcome to the Programme Communities
Featured discussions
Trending discussions
Your feed

Documents appear right in the questions
Can click on the topic boxes to find more resources about that topic
You can use the search bar if you want to start from scratch
If you search a term, you can find people with that term, topics with that term, documents uploaded with that term, and questions with that term
On settings page, you can say that you want to be notified if you are tagged in a group, but not in the regular threads

Regional Association group-can invite individual people
We need to have the workshop resource center completely up and available before we can take away the OCC. The OCC will most likely will be going away by the end of the year
Everyone will need to enroll in myib in order to access the new occ to include all teachers

Programme Resource Center - News and resources
Programme Communities - OCC forums
Workshop Resources – Workshop resources even better

The new OCC is now three parts listed above

Diploma Programme and Career Programme Examination session
Matt Glanville, Head of Assessment Principles and Practice

Still waiting to recruit a new head of assessment (MYP/CP/DP in one position)
May 2017 session:
- 157,538 DP candidates
- 1993 CP candidates
- 111 new DP schools
- 2,404,060 marks awarded by examiners
- 12,695 examiners

Overall diploma rate about 78% awarded in May 2017
Pass rate in IBA for May 2017 was 67.9% passed
Mean grade for IBA was 4.39
Mean points for IBA was 27.35

A lot of extra work with visual arts and group 1 IA and its standardization
Music: new secure on-screen music audio package for the exam (instead of cd's and cd players)
Math HL: took a few questions out so they could spend more time on each question; feedback showed that students did better

ToK: remains one of the most challenging subjects to get the balance between meaningful and reliable assessment correct
- In moderations, we are looking at the teachers marking, not the performance of the students (need to explain on the sheet why the mark was given-must address if the student did not do complete reflection, but did do well in the presentation itself, the teacher must address that in his/her comments.
- Assessment tool is about quality of tok knowledge and understanding not presentation skills;
- how does the teacher explain the marks awarded with reference to the student comments

Internal Assessments:
- Dynamic sampling-if teachers marks are broadly in line with the global standard, do not apply moderation factors-far fewer small moderation changes-so changes were not made if you were globally in line
- IA feedback is to help you understand how to get to the global standard in marks; if you are not moderated, you are spot on! No feedback.
- Look at three scripts to start with – if you are on board, then they stop and don't moderate. If those three are not in line with global standard, then they download the rest of the sample to see if a larger sample is in line
- The IB model is based on a trusted relationship with schools: for extended essays, there were 60 papers that supervisors said it wasn't the candidate's own work; over 500 extended essays had

supervisors who said they had provided less than one hour supervision-two major problems!!! Please make sure neither one of these things happen!

- If students create offensive material on the exams, then IB will return those exams so that schools will see that student's work-this is a new policy
- Check correct work is submitted to the IB-we have no way of knowing what the students wanted to submit; it is not fair if we are inconsistent with schools and students –sometimes going back to check, sometimes not; we will mark whatever you confirm you want marking; will not be contacting schools if something looks odd; beginning in November 2017, schools will no longer be notified

Outcomes of Enquiry Upon Results:

- 35% of time there is no mark change
- 25% of time there is plus/minus one change-slightly more likely to have an increase in one mark instead of a decrease in one mark

What is on the horizon?

- Replacing the handbook of procedures with a digital document that will be available on the programme resource center (new occ)
- May 2018: new assessment for extended essay
- May 2018: first assessment for sports exercise health science
- Onscreen assessment-outcome will be more meaningful assessment-better quality; IB recognizes the conflicting demands around transition (challenging for schools to implement; does more accurately reflect world students live in; currently undertaking school insight research to balance these demands correctly
- How will you develop your teaching for on-screen assessment???
- For onscreen assessments, there is one exam at one time-there will not be more than one exam available for each test
- The application locks down the whole computer if you try to get to the online
- BYOD- on MYP, they have used the bring your own device and are still testing it out
- There will be a compatibility checker that will make sure that that computer can run their process
- LOOK THE MYP E-ASSESSMENT ROLL OUT INFO ON THE OCC TO GET A SNEAK PEEK OF WHAT THE DP E-ASSESSMENTS WILL LOOK LIKE
- The English moderation problem: 'unseen marks are the bane of my life'-and are not part of the new course!!!
- Rewrote the markbands in History-helped make the History scores higher

Introducing the Programme Resource Center
Jenny Gillett
Liz Scheier

- MyIB login: whatever your role is will be listed there so you can access: heads of school, iben, teacher, coordinator
- You will choose the language of delivery
- Have headings: Teaching and Learning (ATL and research); Curriculum (all documents that you'll need for each subject); Implementation (assessment-exam timetables/standards and practices)
- All forms are under assessment under the implementation tab
- In each course, assessment material, teaching material, resources-trying to make everything available in html so that you can navigate through the materials by clicking
- Under assessment, there should be subject reports
- Every single click has an option to use a search engine

- Filters are on left side; can sort by age
- IB Education: anything that is not programme-specific. Look at the document: what is an IB education? Will be a lot added in 2019 with research and teacher support for the approaches to teaching. Academic honesty policies, language policies, etc. all under IB Education
- IBIS will always be separate-but this occ will join with IBEN and IBWS/MySchool
- July 20: PRC launches; WRC and Programme communities are live
- Late summer: OCC resource and news pages and occ forums are turned read-only
- Fall 2018: occ is decommissioned and all content is archived
- Librarians and counselors also fall under the teacher role
- Teacher resource Exchange: see previous notes about community forum centre

The most intelligent students are also the most humble.
Those who enroll in the IB program and take it seriously, are the ones who have a solid foundation and do not begin their journey with a foundation built on sand. A good foundation will always last you throughout the years.

The emerging science of timing: lessons for educators
Daniel Pink

- All three of his daughters have received or are about to an IB diploma
- Is an IB zealot, an IB nut-the IB program is the gold standard of education in the world
- For his latest work, he began with a simple question: when?
- We answer our when questions from gut instinct. We believe that timing is an art. We make these when decisions based on instinct…but timing is actually a science, made up of multiple decisions.
- These multiple decisions come from a variety of disciplines…I decided not to write a how to book, but a when to book.
- There are invisible patterns of timing that affect how we perform, how we feel, etc. but it is moving invisibly in our lives

Five lessons that come from the idea of timing
1. The hidden pattern of the day profoundly affects student performance (teacher performance and human performance as well)…students are more likely to get questions right in the morning than in the afternoon
- The performance changes between the daily high point and the daily low point can be equivalent to the effect on performance of drinking the legal limit of alcohol
- A study done looked at 500m tweets, 2.4 m users in 84 countries…better moods in the morning, dips in the afternoon and rises again in the evening
- Mood and performance are in same development-rise in the morning, dip in the afternoon and rise in the afternoon/evening
- A study looked at Danish standardized test scores…students were randomly distributed to take tests in the morning and in the afternoon…for every later in the day, scores decrease…we find that an hour later in the day causes a deterioration in test score that is equivalent to slightly lower household income, less parental education and missing two weeks of school.
- Having math in the first two periods of the day instead of the last two periods increases the math GPA of students as well as their standardized test scores.
- Schools could boost learning just with a simple change in schedule
- People 14-24 are owl-ish (more active at night)
- Analytic work should be done during the peak of your day; during the rebound part of the day, you should do more creative work-more tired, less likely to be bothered by inhibitions

2. We underestimate the power of breaks.

- A study out of Israel done. The prisoners come to a panel of judges to decide whether they stay or go free. Study found that judges are more lenient after taking a break. People perform differently after taking a break.
- To break this pattern, taking a test in the afternoon without a break is like having a parent with $1000 less in income. If you give them a break, like having a parent who makes $1900 more…taking a test in the afternoon without a break is like having two fewer weeks in school and taking a test after a break is like having almost four weeks in school.
- The science of breaks is like the science of sleep was 10 years ago.
- Walking around like you've had three beers is what happens when you don't get enough sleep
- A 20 to 30 minute break improves test scores…having breaks in schools is more beneficial to lower performing students
- Breaks are not a deviation from learning. They are a part of learning.
- Recess is a part of learning!
- We have to give students and teachers a break. There is no other profession where people wonder when they can go to the bathroom.

3. Centers for disease control released a report about the health detriments about starting school early. Beginnings matter more than we realize.
- America's pediatricians issued a policy statement saying please don't start school for teenagers before 8:30 am.
- Studies done: attendance rose, improved performance on tests; number of car crashes for teen drivers fell 70%; graduation rates increase; less tardiness; improved motivation; reduced depression
- We don't take when issues seriously enough…lands with same amount of impact
- End the madness! Start school at 9.

4. Sometimes midpoints bring us down. Other times they first us up.
- Reaching the midpoint of something has an effect on what we do and how we do it. There is no evidence of this-it's an absolute myth.
- Well-being slumps in mid-life. Exact bottom point of existence is ages 50-53.
- A great study on the well-being of apes: humans have been noting and studying the well-being of apes and it is the same u-shaped curve of a slump in the middle and then it rises again
- Another study done about Hanukkah…people are less likely to light menorah candles on the middle nights of Hanukkah.
- How do teams carry out projects? At the beginning of the process, teams don't do a lot of work; each group experienced its transition point halfway through the process. In a concentrated burst of changes, groups dropped old patterns, reengaged with outside supervisors, adopted new perspectives on their work and made dramatic progress. The uh-oh effect…have to get started, so you do at around the halfway mark.
- Teams ahead of halftime more likely to win. One exception to this rule: teams that are behind by one point have a 58% chance of winning.
- We have to be conscious of midpoints. They have a big effect on our behavior. Be aware of midpoints. Use midpoints to wake up rather than roll over-it can be slump or spark (imagine you're a little bit behind).

5. Endings shape our behavior in powerful ways.
- 'I've got some good news and some bad news.' Always deliver good news first-awkward to deliver bad news…
- If you're on the receiving end, you want the bad news first. 4 out of 5 people prefer to begin with negative and end with positive.
- Teachers forget how they want to receive information.
- Given a choice human beings prefer endings that elevate.

- Great opportunity for teachers to improve their endings…at the beginning of the year, students write a 6 word memoir and teacher hangs them up around the room-at the end of the year, students write another one and read first one, take it down and put new one up
- Bit.ly/WhenPink
- Bad news is that we still don't take these questions of when seriously. Good news is that the evidence is there and we can make a big difference by making small changes. On this issue of when, educators can lead the way.