TABLE OF CONTENTS:

MODULE 1 – SETTING THE SCENE

The World and Teaching Today

1.   A Changing World

What does the future look like? According to Professor Armstrong of the Wits Business School, despite the advent of technology, human beings will still be at the top of the food chain, especially those who are *leaders*, who are *truly creative*, and those who have the *ability to design* in a complex manner.

On the other hand, there is a good chance that computers will take over what we call "knowledge" work (or the knowledge economy) which is routine, methodological work and work that is based on fact. Computers are not necessarily cheaper, but they are faster, they don't make mistakes and it is easy to upscale the amount of work done by computers.

Will man be needed in the workplace? Of course! In the near future, computers will not be able to be creative, will not be able to form relationships and will only be able to perform tasks that are highly structured. This means that to prepare our learners for the future, we have to teach them to enhance their creative intelligence, to strengthen their communication skills or relationship intelligence and to be prepared for skills and agility that do not follow structure.

People who are involved in routine or knowledge work are more likely to be replaced by computers, and this has been seen all over the world. This is referred to as the "hollowing" of the workforce and it is going to happen more speedily.

The following diagram gives some idea of the new careers that will, and are already, making an appearance. How do we adjust our teaching to prepare our learners?

15 Fastest-Growing Occupations From 2016 to 2026

	Occupation	percent change
1.	Solar Energy Technicians	105%
2.	Wind Energy Technicians	96%
3.	Home Health Aides	47%
4.	Personal Care Aides	39%
5.	Physician Assistants	37%
6.	Nurse Practitioners	36%
7.	Statisticians	34%
8.	Physical Therapist Assistants	31%
9.	Application Software Developers	31%
10.	Mathematicians	30%
11.	Physical Therapy Aides	29%
12.	Bicycle Repairers	29%
13.	Genetic Counselors	29%
14.	Medical Assistants	29%
15.	Occupational Therapy Assistants	29%

Source: U.S. Bureau of Labor Statistics, Employment Projections, 2016-2026.

trade-schools.net

Careers of the future

Solar energy technician

Nurse Practitioner

Software Developer

Physical Therapist

Digital Content Specialist

Biomedical Engineer

Digital Rehab Counsellor

Blockchain Developer

Civil or Commercial Drone Pilot or Dispatcher

3D-Printing Technician and Virtual Reality Designer

Remote Health Care Engineer

Urban Agriculture Specialist

Tech Ethicist

Civil or Commercial Drone Pilot or Dispatcher

Cyborg designer*

JOBS THAT DON'T QUITE EXIST YET (But Probably Will)
Personal Education Guide
Custom Body Part Manufacturer
Hyper-Intelligent Transportation Engineer
Cyborg Designer
Space Tourism Guide
Extinct Species Revivalist

Sophia

*a fictional or hypothetical person whose physical abilities are extended beyond normal human limitations by mechanical elements built into the body.

The Fourth Industrial Revolution (4IR) is bringing digital, physical, and biological systems together in a way that will change people's lives and the job market forever. The digitization and automation of work will have a major impact on career development.
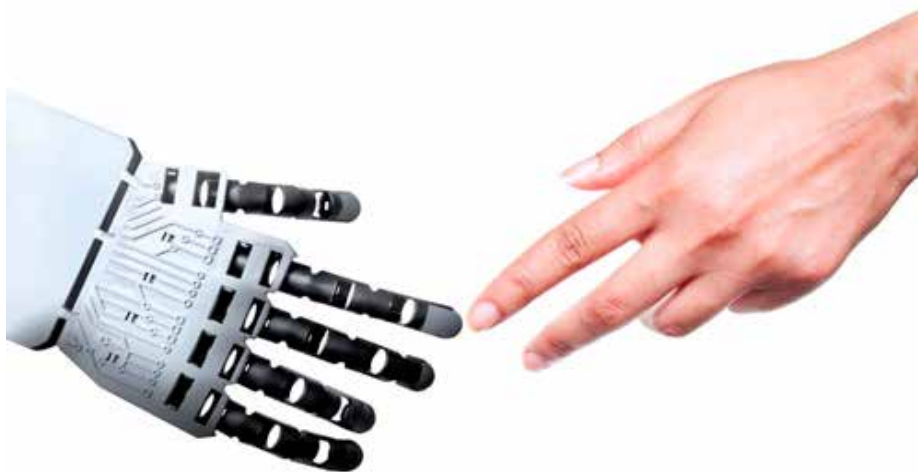
GO TO ACTIVITY 1

2.   Unemployment crisis

In addition to the changing world of work as illustrated above, the world, and South Africa in particular, is suffering huge unemployment, and South Africa is touted as the most unequal society in the world.

Youth unemployment is at an all-time high and this places a greater load on the education sector to make school time relevant and productive and to really offer learners numerous opportunities to prepare for life after school.

South Africa: Youth unemployment rate from 1998 to 2018

Additional Information   © Statista 2019

By the end of school, learners should have options to either:
1. Start a small business
2. Be prepared for the job market
3. Ready to study at a tertiary institution.

3. Teaching needs to adapt

It is clear that the traditional style of teaching is no longer relevant, particularly, since the learners in our classrooms are very different in terms of their attitudes and values. They are tech savvy and impatient, and they need to do things, rather than listen to outdated teachers reading text from an outdated textbook. Teachers are also ready – hence the move to more authentic, results-driven, active learning pedagogies.

As teachers we need to reflect on who we are as educators. Are we ready for the roller coaster ride?

Active learning activities **help promote higher order thinking skills** such as application of knowledge, analysis, and synthesis

Active learning activities **engage students in deep rather than surface learning,** and enable students to apply and transfer knowledge better
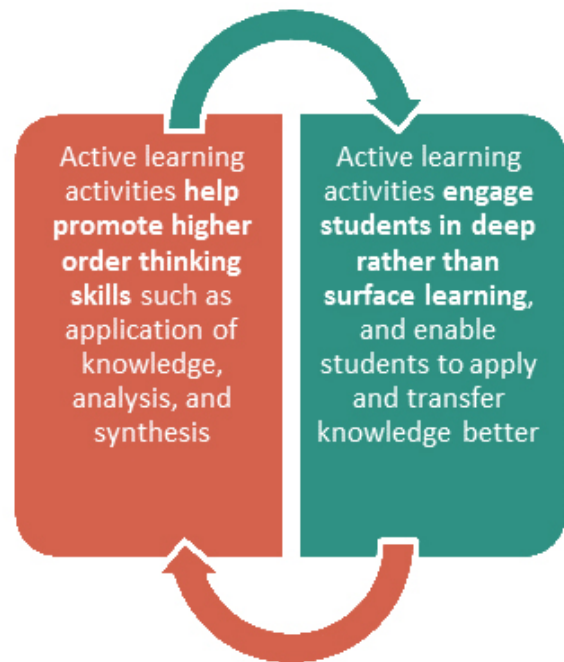
4. Who am I? Where am I going?

Clearly, with the threat of major job losses, and the current rate of unemployment in our country, teachers are in a powerful position to make an impact on the future of their learners. However, they need to reassess their roles and to recommit to teaching as never before: change is inevitable and teachers will have to undergo mindset changes to equip themselves with the resilience needed to deal with the 21st century classroom.

We all need to get ready for the Fourth Industrial Revolution (4IR) by embracing 21st century skills and contributing to the change it demands in our schools and communities.

A Checklist for Today's Teachers

☑ 1. My students have opportunities to be creative.
☑ 2. My students are allowed to display their learning in different ways.
☑ 3. My students document and reflect on their learning, exchange ideas and collaborate with others through blogging.
☑ 4. My students have digital portfolios to display their progress and to archive their work.
☑ 5. Guests are invited into our classroom (live or virtually) to broaden our knowledge and global perspective.
☑ 6. My students are aware of how to be safe online and how to be good digital citizens.
☑ 7. I model good digital citizenship by being present online and by connecting with others on social media.
☑ 8. I make an effort to connect face-to-face with other educators at conferences.
☑ 9. I model a growth mindset by stepping out of my comfort zone and trying new things.
☑ 10. I believe that I would enjoy being a student in my class.

@sylviaduckworth

GO TO ACTIVITY 2

4.1 Get ready: A fixed and a growth mindset

Why do some of us succeed and others not? Carol Dweck did a study to show that there are two mindsets which direct our lives: a fixed mindset or a growth mindset.

Fixed mindset
Many of us spend our lives trying to prove ourselves. In everything we do we look for acknowledgement and a confirmation: Am I OK? Will people think I am stupid? Am I a loser? Are the talents I have been handed sufficient for success?

The world is changing every day. The days of being an expert because you were "handed" certain talents or specialised in a specific field, e.g. teaching, are over. If you are not prepared to accept occasional failure and change with every setback, and thus learn from your mistakes, you will not be open to growth. Your mindset is fixed.

> *"A fixed mindset assumes a static stance towards intelligence, character and creative abilities – people with fixed mindsets believe their talents and intelligence are fixed at birth and therefore cannot be improved upon."*

Growth mindset
The other choice (and it is in your hands!) is to accept the following:
· Although I have certain talents, they are merely the starting point of who I can become.
· I believe that I can learn and be an expert at anything if I put in the effort.
· I appreciate feedback and know that making mistakes is part of growth.

What Kind of Mindset Do You Have?

Growth Mindset
I can learn anything I want to.
When I'm frustrated, I persevere.
I want to challenge myself.
When I fail, I learn.
Tell me I try hard.
If you succeed, I'm inspired.
My effort and attitude determine everything.

Fixed Mindset
I'm either good at it, or I'm not.
When I'm frustrated, I give up.
I don't like to be challenged.
When I fail, I'm no good.
Tell me I'm smart.
If you succeed, I feel threatened.
My abilities determine everything.

As a teacher, you are at the start of a new professional journey. There will be hurdles, but see them as tools for developing professional muscle and personal resilience. You need to keep on growing so that your learners will thrive – success is a personal choice:

> *"The growth mindset argues that talent and intelligence can be developed over time and with effort. Those with growth mindsets tend to thrive on challenges and embrace failure as a mechanism for learning and development."*

"If it's going to be, it's up to me!"

4.2   The circle of influence versus the circle of concern

Not only mindset, but also the manner in which you deal with your day-to-day frustrations can affect successful teaching in the 21st century classroom. Some problems can be managed, but others are beyond the control of teachers.

What about focusing on the things you **can** control and "park" the situations you cannot control? Why waste time and energy on areas which you cannot influence? According to Steven Covey, every one of us operates in two circles, the *Circle of Influence* and the *Circle of Concern*. These circles represent the two areas in which you focus your time and energy. The inside circle represents situations which you can influence or control, while the outer circle represents situations over which you have no, or very little, control.

CIRCLE OF CONCERN
I cannot control

What other people say

Drought

CIRCLE OF INFLUENCE
I can control

What I say

How I act

What I do

How the government will manage the Corona virus

Land expropriation

What others do

GO TO ACTIVITY 3
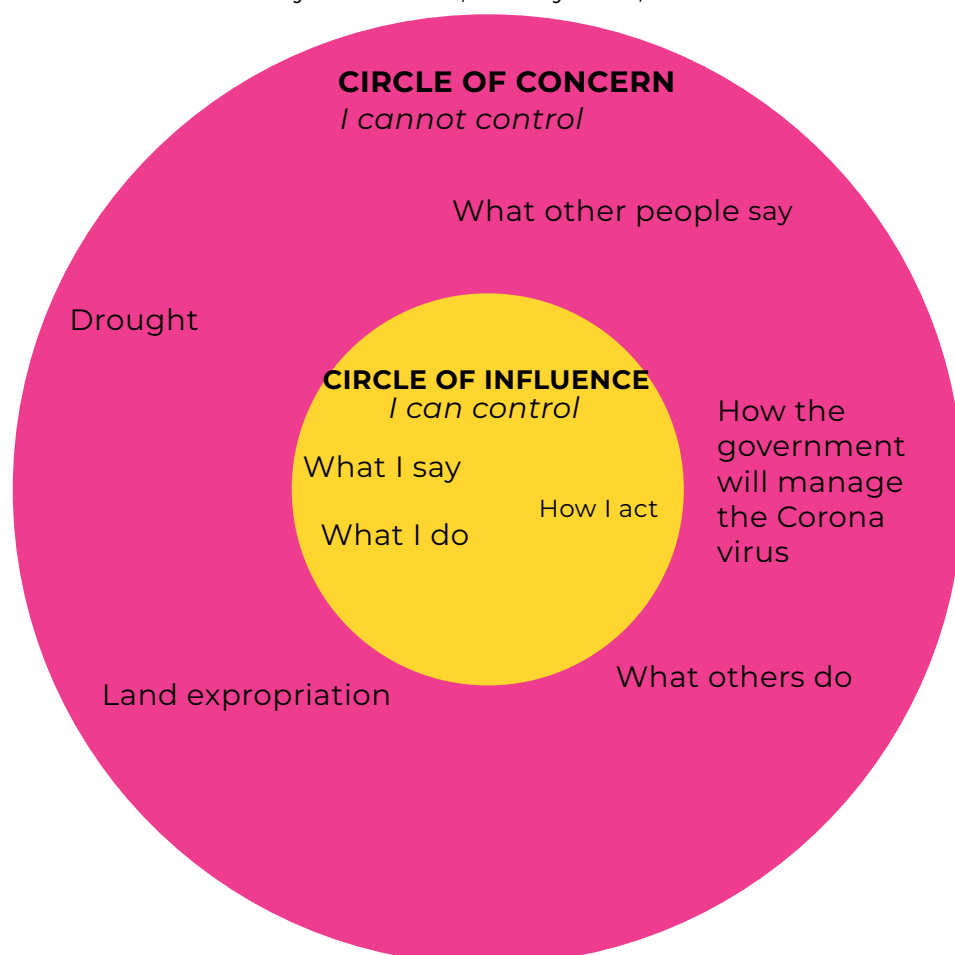
Most people waste a great deal of energy and time being "concerned" about issues that they cannot change, in other words they spend too much time in their *Circle of Concern*. Steven Covey believes that successful people think and do things within their *Circle of Influence* and do not waste time on issues that they like to complain about but over which they have no control.

To make a real difference, rather focus on things you *can* influence. Make a difference, but by focusing your energy on being effective and changing unhappy situations. By doing so you will be entering a cycle of success: by doing more and more things that you have control over, you are increasing your *Circle of Influence* and are entering a positive cycle of earning more respect and power.

SOME TIPS

1. Stop worrying about other people. Stay within your *Circle of Influence*.
2. Stop worrying about something that has happened or will happen that you cannot control. Worrying paralyses you.
3. Plan your actions. Be organised to avoid situations that will land you in your Circle of Concern.
4. Practise staying in your *Circle of Influence* so that it grows bigger.
5. As it grows bigger, the *Circle of Concern* grows smaller. You will feel more in control. You will be less stressed and become happier.

GO TO ACTIVITY 4

Where do you spend most of your time and energy? Whenever you're getting worked up over something, ask yourself, "What can I do to change this situation for the better?"

Figure out some good ideas and act on them. If you really can't think of anything, realize that you're wasting valuable time and energy worrying about the issue. Let it go, and redirect your resources to an area where you can actually make a difference.

MODULE 2 – MAKING THE COMMITMENT

It should be clear by now that, as a teacher, you have a critical role to play in the preparation of your learners for the unknown world outside school, be it as a result of unemployment or the challenges of the Fourth Industrial Revolution and the effects of technology. You will be successful, but only if you are prepared to make the change yourself and thus model new habits for your learners.

1.   How can teachers embrace the change?

The top 5 Skills teachers need to bloom in the Fourth Industrial Revolution:

1.1   Be positive and take on the challenge

It is critical for teachers to be open to learning and to be prepared to develop and change as technology evolves and becomes part of their classroom – and it WILL, sooner rather than later. Be positive, adapt easily, share your highlights and failures, and, if technology frightens you, ask a learner to help!

1.2   Collaborate, pair, share

Teachers who are open to collaboration will develop as they share and learn from each other. These learnings are unique and cannot be acquired from a textbook – learning is social and there are no excuses for not working in teams – technology facilitates collaboration as do well-organised and productive PLCs (Professional Learning Communities).

1.3   Be creative and try out new things

Our learners need to be creative and attempt tasks outside their comfort zones and teachers need to model this responsible risk-taking mindset. The changing world needs more real-life problem-solving, solution-oriented teachers and learners who do not fear making mistakes. They have a growth mindset and see "failure" as an opportunity to develop.

DID YOU KNOW?

FAIL is your **F**irst **A**ttempt **I**n **L**earning.

1.4   Laugh, enjoy teaching and have fun with your learners

Fear of change can induce stress and a fear of failure or poor teaching performance. Accept that you will make mistakes and forgive yourself. If your learners are having fun then you are succeeding – humour is a critical skill in building bridges between teacher and learners, reduces frustration and gives us the chance of reflecting. Laughter also creates a happy and enabling environment for your learners.

1.5   Understand Diversity

This means that you should acknowledge diversity in terms of language levels, multiculturalism, and different learning styles as well as physical differences. Teachers should take ownership and be accountable. Teaching has to be more "personalised" – acknowledge every learner and differentiate your teaching styles as you try to reach each learner individually.

1.6   Embrace happiness

All of us strive to:
•   make our mark on the world and
•   want to feel that our lives are worthwhile

The work we do is a critical component of our legacy.

If we believe that our work has meaning and that we are valued for what we do, this encourages us to remain involved and to seek the next level of achievement.

Dr Roger Martin, from the Rotman School of Business in Ontario, defines the ***Trilogy of Happiness*** as the three values in the diagram below:

In the end, mindset is everything and teachers need to be mindful of the power of mindset and positive attitudes:

> *"The biggest mindset change we are working on with our teachers is that it is OK not to know, but it is not OK to sit back and do nothing about it. Embrace change and learn with the kids, maybe even empower them to lead and teach too. Schools around the world MUST do their very best to spend time and money firstly on human resources to upskill our educators to lead the leaders of tomorrow. The Fourth Industrial Revolution is here! Time to jump on board and join the ride – it is a wild but rewarding one!"*

21st century teaching will become more inter-disciplinary and learner groups are becoming more heterogeneous as people migrate.   School classrooms have gone global, but this should not alarm us – we should take on the challenge. Where do we start?

What are the competences teachers and their learners need to acquire to flourish in a rapidly changing world?

2.   Competences needed for a changing world

2.1   Character, Thinking and Connection

> *"…learners to leave school with the developmental capacity to interactively mobilise and ethically use information, data, knowledge, skills, values, attitudes, and technology; to engage effectively and act across diverse 21st century contexts; and to attain individual, collective, and global good"(UNESCO-IBE).*

In order to start preparing learners and teachers for the changing world, the DBE has adopted the UNESCO-IBE Competence-based curriculum, the goal of which is for:

The DBE has recognised the need for active learning pedagogies to build these competencies and has established E³, an initiative, launched in 2018, that uses learner-centred teaching and learning, including projects and games, in the existing CAPS curriculum to better prepare learners for the modern economy. The goal of E³ is to inspire 100% of learners to complete school and 100% of these learners to study further, get a job, or start their own enterprises, i.e. **e**ntrepreneurship, **e**mployability and **e**ducation for tertiary and lifelong learning.

The vision of E³ is to create a new generation of engaged South African citizens, who are prepared and enabled, through the schooling system, to build the economic engine of the country.

By transforming teaching and learning in South African classrooms, the programme seeks to create the building blocks of an entrepreneurial nation, which is capacitated to address socio-economic challenges, including poverty and unemployment. Be it for employment purposes, employability or for further education purposes, an entrepreneurial (opportunity-seeking and problem-solving) mindset is the answer to problems looming in the world post school.

2.2   Efficacy and personal agency – for teachers and learners

Truly successful learners exiting school will be those who have, as a direct benefit of 13 years of school, in which they have experienced ample and iterative opportunities to engage in real-life scenarios in a practical way, with confidence (because there is a safety net if mistakes are made), and have developed self-efficacy and personal agency to accompany their 21st century skills.

In alignment with the UNESCO-IBE Competency-based Curriculum, E³ has identified core competencies to develop and build entrepreneurial 21st century solution-seeking mindsets in the South African classroom. The E³ model aims to build the following core competencies:
•   Character (Citizenship, Curiosity, Resilience)
•   Thinking (Creativity, Critical Thinking, Reasoning)
•   Connection (Collaboration, Communication, Empathy)

By activating these competencies, E³ believes that the following public good elements will follow: lifelong learning, self-agency, and the interactive use of diverse resources and multi-literateness.

2.3   Addressing the issues using Project-based learning (PBL)

Project-based Learning (PBL) has been identified by E³ as the vehicle to develop these 21st century competencies in learners due to the problem/solution opportunities that these projects provide.

E³ recognizes the "Instructional Core" — teachers and learners in the presence of content — as pivotal to creating the shifts required to drive change at scale.
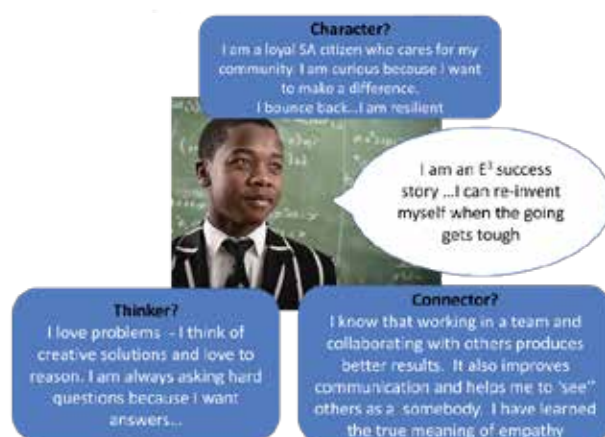
The programme champions progressive, constructivist pedagogies as a way of doing what Bell Hooks refers to as "interven(ing), alter(ing) and disrupt(ing) the classroom atmosphere" in order to shift core beliefs and attitudes about teaching and learning, as well as to realize the following three programme pillars:

1)   Equipping learners with 21st century skills;
2)   Developing personal agency through unlocking a mindset that produces value and usefulness to others; and
3)   Developing a belief in self and ability.

In this context, the teacher's role is to set up a conducive learning system by designing a stimulating learning process and projects, equipping learners with appropriate tools and methods and creating positive learning spaces. Teachers will be empowered to implement Project-based Learning (PBL) and Active Learning Pedagogies to unlock the competencies learners need for future success.

> *"The E³ value proposition is to provide THE platform for all education initiatives working with DBE schools who are striving to bring 21st century skills into the pedagogy. Included in this process is the need for all learners to develop curious, enquiring, empathetic minds. They will do this in every subject by being encouraged by the teacher to conceptualise a need, develop a solution and design a project that meets the needs of their environment and that fulfils a purpose within themselves.*
>
> *Teachers will create the opportunity for fun and fascination and provide the direction and guidelines for the three stages of conceptualisation, process and project outcome. From a young age, learners will grow their empathy, become caring and develop a continuous problem-solving mindset that is driven by what they care about. It is this process that will establish hope and belief in the new SA of engaged youth."*
>
> *(Dr Maboya: Deputy Director General, Curriculum Policy, Support and Monitoring in the Department of Basic Education).*

The DBE understands the changing needs of education in SA as:
· the need for deep understanding rather than shallow knowledge;
· the need to build understanding across and among academic subjects, as well as within 21st century interdisciplinary themes;
· the need to engage students with authentic real world problems, data tools, and experts;
· the need for indicators of progression to allow for multiple measures of mastery.

Let's take a closer look at E³.

3. The DBE plan – E³ (Entrepreneurship, Employability and Education)

3.1   The E³ approach

Because of the challenges that 4IR is bringing and the alarming unemployment rates, the Department of Basic Education (DBE) wants to ensure that school leavers have the skills they need to find jobs, start a business or continue to a tertiary career.

E³ ('Entrepreneurship, Employability, and Education') is the national Department of Basic Education initiative to ensure that:
- 100% of school learners complete school (and do not drop out); and
- 100% of these school leavers are equipped with the skills to:
  - **E** - become entrepreneurs in the future, i.e. start own enterprises;
  - **E** - become employable, i.e. get a job; or
  - **E** - become educated, i.e. stay at school or join a tertiary TVET, Technikon or University and successfully study further as a lifelong learner.
  - Combinations of the above

Entrepreneurship

E³ champions learners who are people of the search and discovery generation who believe 'if it's going to be, it's up to me'. They have a search and discovery, opportunity-seeking mindset that drives their purpose in helping others. They are not linked to a particular age group – rather they display a particular mindset: a common logic that drives their abilities and actions. They exist within established organisations and/or they create new ones.

In order for an education system (starting at school) to develop these learners, every element of the E³ pedagogy must be unlocked. This includes the E³ mindset (self-efficacy, a growth mindset, resilience, an internal locus of control and intrinsic motivation) and the 21st century skills: foundational literacies, competencies and character qualities, rooted in life-long learning.

Employability

In addition to specific skills a job might require, employers are often looking for what is known as 'employability skills' and 'soft skills'. These would include communication, teamwork, problem-solving skills, initiative and enterprise, planning and organizing, self-management and a commitment to life-long learning. Generic employability skills are important because the labour market is intensely competitive, and employers are looking for people who are flexible, take the initiative and have the ability to undertake a variety of tasks in different environments. Employees with a capacity for change as the environment changes, will be in high demand.

Collaboration between different stakeholders should be explored to create opportunities for a transversal solution to youth unemployment which should start in the classroom and extend to building supportive ecosystems around schools and communities.

DID YOU KNOW?

Lifelong learning is learning that we actively pursue right through our lives because we know that in a world that is changing at an exponential rate, we need to constantly.

10 SIMPLE WAYS TO ENGAGE IN LIFELONG LEARNING
1. Read widely and often
2. Keep smart company
3. Teach others
4. Keep a list of things you want to explore
5. Start your own project
6. Use a personal learning environment
7. Experiment with new ways to learn
8. Join a study group
9. Find a job that encourages learning and collaboration
10. Make it a priority!

Education

Teachers are strong models in a learner's world. Good teachers model a love for learning, and continuous learning, and this is excellent because one of the E³ goals is to unlock this love of learning and curiosity about the world around their learners. Thus:

- Teachers should be encouraged to take charge of their own professional development.
- Teachers should truly embrace the concept of lifelong learning in a fast-paced knowledge space.
- The "lone wolf" who often in the past embarked on quality educational projects at his/her own school will now be acknowledged by "banking" SACE CPTD points for all the hard work he/she has performed.
- Not only will learners' learning improve, but if the process is honest and productive, schooling in South Africa will show positive results.

Of course, our learners should also be influenced to continue learning. In a rapidly changing world, lifelong learning will ensure success.

So not only you yourself, but also your school and most importantly, your learners will benefit, as will the reputation of South African education which needs to adapt to a changing world.

3.2   The process

WHO will manage the process?

The E³ programme is commissioned and owned by the DBE and is delivered in partnership with C.I.D.A. as the programme management and implementation partner and New Leaders Foundation (NLF) as the monitoring and evaluation (M&E) partner. In addition, since E³ is being implemented in the Intermediate, Senior and FET Phases (Grades 4 – 12), the programme has also partnered with UNICEF and Care for Education, who are responsible for the implementation of the Lego "Six Bricks" initiative in the Foundation Phase (Grades R – 3). This partnership seeks to ensure the continuous engagement of South African learners in active learning pedagogies, which include play-based and project-based learning, throughout their schooling years.

3 ENTREPRENEURSHIP
EMPLOYABILITY
EDUCATION

Care for Ed (with the support of the LEGO Foundation) provides play-based learning support to teachers from Grades R to 3, thus providing a pipeline to, and an effective integration with E3's project-based teaching and learning initiative.

E³ is an initiative of the DBE that uses student-centered learning, including projects and games, in the existing CAPS curriculum to better prepare learners for the modern economy. The goal of E³ is to inspire 100% of learners to complete school and 100% of these learners to study further, get a job, or start their own enterprises.

Grade R to 3 > Grade 4 to 12

Governance structure

The programme also has a robust governance structure to enable strategic focus and accountability. The programme has established two bodies, the Steering Committee and the Advisory Council, to oversee implementation, coordinate different workstreams and track progress. These two bodies comprise representatives from the DBE, C.I.D.A., NLF and Care for Education.

3.3   HOW will this happen?

E³ is a programme which will, by 2030, bring about a change in the South African national school education system. It will ultimately impact all learners in the SA school system (12.9 million learners).

The pedagogy: Project-based Learning

Project-based Learning (PBL) is the vehicle that will be used to build the skills needed to achieve employability, entrepreneurial skills and the opportunity to enter tertiary education. Authentic, real-life scenarios and activity-based learning which is experiential and practical, and thus more fun and inspiring to learners, will be promoted. Tools and ways of thinking to better solve problems both alone, and with others, will be explored. In this way learners will develop the relevant skills and competencies needed in a modern economy. There will be an intentional move away from *wholly* traditional teaching (if chalk and talk is fit for purpose, it remains valid) towards a more learner-centered approach.

CAPS alignment

In each grade, an anchor subject is selected and an activity-driven project which covers all the content required by the CAPS in a specific term, will be written in such a way that teachers will be provided with a step-by-step recipe for unpacking the project.

Because Term 3 is generally the term in which the CAPS requires projects and case studies to be undertaken, in the first few years of the pilot, Term 3 will be the term in which PBL will be implemented, driven or anchored by the following subjects:

Grades 4 –6   (Life Skills)
Grades 7 –9   (Economic and Management Sciences)
Grades 10 – 12   (Life Orientation)

Small-scale trials (E³ "laboratories") will be carried out on different projects in subjects other than those selected for the broad implementation plan. Teachers involved in these projects will conduct small Action Research projects to test the pedagogy and to start building up a local repository of original projects. They will report on the learner engagement, the results, the impact, and advise on how they may be improved. Currently a Grade 6 Maths project has been written and tested and the writing of mini-novels in English First Additional Language is being implemented.

Assessment of the Projects
The project in Term 3 is part of formal school-based assessment and "counts for marks". The results will be recorded on the national assessment database, SA SAMS.

Items on the assessment rubric which each province will develop are aligned with the Curriculum and Assessment Policy Statement (CAPS). The Formal Assessment Task for Term 3 (the term of the pilot) is a project as opposed to other activities, and teachers need to submit a mark or a grade using the assessment rubric as a guideline. The results are monitored on SA SAMS.

Although there will be a core or anchor subject housing each project as stated above, the project will encourage integration with other subjects, especially the Language of Learning and Teaching (LOLT). With time teachers will see the value of collaboration in assessment as well.

Written by teachers, for teachers
To ensure that teachers take ownership for the projects and that the projects are relevant to South African school classrooms, the actual projects are written by teachers, and scrutinised by Project-based Learning experts who will act as co-writers and peer counsellors.

Grade 4-10 projects which were written in 2018 and 2019 have been updated and recalibrated based on lived experience of teachers during implementation. New projects are being written for Grades 11 and 12 (Education for Sustainable Development/Climatology/Pollution and Safe Spaces)

3.4   Pilot Implementation and national roll-out

C.I.D.A. E³ will assist the DBE to:
- plan, guide, and lead a 3-year full-scale pilot implementation (2019 – 2021) of the above methodology in all 9 provinces with a pre-pilot year (2018);
- train teachers in the activity-based learning approach;
- develop projects which are CAPS-aligned; and
- monitor and evaluate progress based on the assessment of learners in all the piloting schools.

This will assist the DBE directly in the process underway of the review and dissemination of the adjusted curriculum for schools.

HOW will this be done?

1. During the 3-year Pilot phase of the 'blueprint' policy, E³ will be launching and creating working teams in all 9 Provinces. Each Province will create a Provincial version of the policy for their own implementation.

2. E³ and teachers will together be developing 'content' for the projects or 'student challenges' that will be inserted in specified pre-agreed subjects in each grade (i.e. Grades 4 to 12).

3. Major learner-run projects (projects are defined below) that are grade specific are produced and updated and these count for the school 'year-marks' necessary to pass the specified subjects and the relevant grades. The projects engage learners in solving a real-world problem or answering a complex question. The success of this pedagogical approach is that learners develop deep content knowledge as well as critical thinking, creativity, and communication skills in the context of doing an authentic, meaningful project.

4. E³ aims to build an online 'Projects' database, which will include, compare and contrast with best national and international practice:
   a) A database of possible projects by subject and grade developed under the auspices of the curriculum manager (through a writer's workshop and other means) will be built, refined, and graded so that key competencies to be learned and mastered are clear.
   b) The SA E³ team are working together with the Ontario Department of Education along with the I-Think Centre at Rotman Business School, Toronto. International experts will give guidance and inputs into projects developed.

5. Comprehensive training of teachers (in service, later pre-service):
   a) 'Master Trainers' will be trained, i.e. Training of the Trainer Programme.
   b) A national teacher website with open source first-rate facilitation materials, as core resource-base for teachers, will be created.
   c) Teachers will successfully complete online training as an initial part of the training process. The target ultimately is for over 100,000 teachers nationally to utilise the E³ website as an important teaching aid/to complete online certifications/to share information, be inspired, and connect. A teacher "Black Belt" is currently being developed.
   d) Teacher-training workshops for teachers in the pilot group following online training and repeated at intervals will be conducted.
   e) Professional Learning Communities (PLCs) for teachers, including the creation of a new National Teachers' Award category for outstanding teaching are being explored.
   f) Technology-enabled teacher support is key. The teacher training manual is currently being converted to an online format with interactive quizzes. It will be available on the E³ website on an "anytime, anyplace" basis.

HOW long will it take?
The training is part of a 13-year plan. The current participants will be piloting the 2020 projects in your schools in a third iteration. The pre-pilot phase started in 2018 and the full pilot started in 2019 and continues to 2021. After this the institutionalisation process will proceed. This is part of the Theory of Change.

3.5   Monitoring and Evaluation (SA SAMS)

Theory of Change
NLF has supported the implementation team to develop a detailed Theory of Change (ToC) and Results Chain, which outlines E³'s intervention mechanisms, the pathways to change and key indicators. The core approach to programme implementation focuses on three key intervention mechanisms, which are enabled by M&E and advocacy.

These are:
· 	training provincial master trainers to train teachers;
· 	providing teacher development and support; and
· 	transforming teaching and learning in the classroom.

The Theory of Change also addresses three critical workstreams to enable the above interventions:
· 	School Implementation
· 	Partnerships
· 	Institutionalisation

THREE KEY WORKSTREAMS OF THE E³ INITIATIVE OF THE DBE

Institutionalisation
Ms Waheeda Carvello

Partnerships
Ms Julie Willamson

Implementation
Dr Ria de Villiers

E³ is still in its design phase where core intervention and rollout mechanisms are being designed and piloted for efficacy.

The Monitoring and Evaluation

The pilot
A three-year pilot (2019 – 2021) was launched at the beginning of 2019, which has begun rolling out E³'s project-based learning methodology in Gr 4-6 Life Skills, Gr 7-9 Economic and Management Sciences and Gr 10 Life Orientation across 350+ schools.   In 2020, the roll-out of Grades 4-10 will extend to 600 schools.

Role of M&E
The role of the M&E is to support the programme in clearly defining the change that is intended, testing theories and assumptions on how change would be achieved in the South African context and in gathering evidence against this intended change along casual pathways, from implementation to results, for the purposes of learning and improving implementation.

### *M&E evidence*
The pilot and ongoing M&E processes will therefore test aspects of, and provide adequate evidence on, the following:
· 	the implementation of the programme (number of training sessions and attendance; other engagement indicators);

- the effectiveness of training and skills transfer (assessment and observations);
- the quality of teaching (teacher practices reflecting changes in knowledge, skills, attitudes, and values) and learning taking place (learner outcomes from SA-SAMS; teacher behavioural indicators); and
- the changes in learners' knowledge, skills, attitudes and values (survey and results).

332 schools were selected to participate in the pilot

From a longer-term perspective, it will test the impact of E³ in schools on schooling and post-school outcomes.
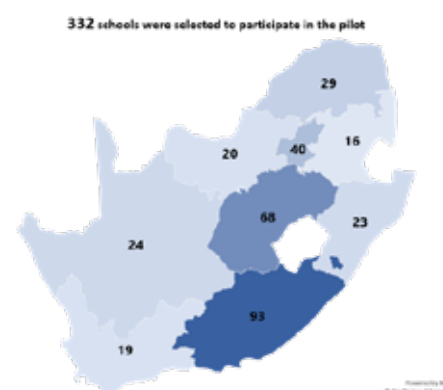
Lessons learned from the 2019 baseline and plans made to address challenges

The lessons learned from the baseline study conducted in 2019 are briefly outlined below, and it is these recommendations that have informed the updating of this manual:

Lesson 1.   Current understanding of E³ is limited.

Lesson 2.   Knowledge of PBL is limited.

Lesson 3.   Training did not adequately prepare them for classroom implementation.

Lesson 4.   Providing adequate support is needed to manage the rapid E³ implementation and roll-out.

Lesson 5.   Failure to clearly and timeously communicate E³ plans, roles and requirements hampers effective implementation.

E³ plan of action to respond to the M&E:

Leading to the July to September roll-out, the following support interventions were planned and are being carried out to addess identified challenges:

Dec 2019:   Tested training manual with Free State DTDCs

Jan 2020:   A DCES meeting was held to gather first hand feedback. Feedback from the provinces was also included in the update as the manual and projects were checked for language and other changes.

Jan/Feb 2020:   Writer's workshop (teachers and officials) (28)

March 2020:   Master Training Workshop was to be held to equip DCESs, Subject advisors and lead teachers. E³ has also identified 9 co-presenters to support Master Trainers. This intervention has been replaced by a video-based training programme as a result of Covid-19.

April 2020:   Teacher Training will take place in 3 groups so that E³ may more easily visit the 25 districts implementing. It has been decided that all provinces will present for 3 – 4 days.

Group 1:	2 – 5 April 2020	FS, GP and WCED
Group 2:	16 – 19 April 2020	NW, MP and NC
Group 3:	23 – 26 April 2020	EC, KZN and LP

May/June 2020:   Coaches will be appointed to plan and support teachers implementing on the ground.

July 2020:   Transmission training (catch up training) will be broadcast to various centres nationwide.

July to September 2020 – The projects are rolled out. During this period E³ will carry out *Celebrate and Support* visits and coaches will visit schools to offer on-the-ground support.

MODULE 3 – LET'S GET STARTED

1. Learner needs

1.1 What kind of learner is being envisaged?

We have discussed the entrepreneurial, search and discovery mindset that is critical for success in a changing world. Although not all will become entrepreneurs, we should think of them as ''entrepreneurials'', a generation with an opportunity-seeking mindset that drives their purpose in helping others.

They are not linked to a particular age group – rather they display a particular mindset: a common logic that drives their abilities and actions. They exist within established organisations and/or they create new ones.

In order for an education system (starting at school) to develop these learners, every element of the E³ pedagogy must be unlocked. This includes the E³ mindset (self-efficacy, a growth mindset, resilience, an internal locus of control and intrinsic motivation) and the 21st century skills (foundational literacies, competencies and character qualities, rooted in life-long learning). The diagram below, designed by Fadl of the CCR, unpacks the unique qualities needed by 21st century learners in order to thrive in a changing world.
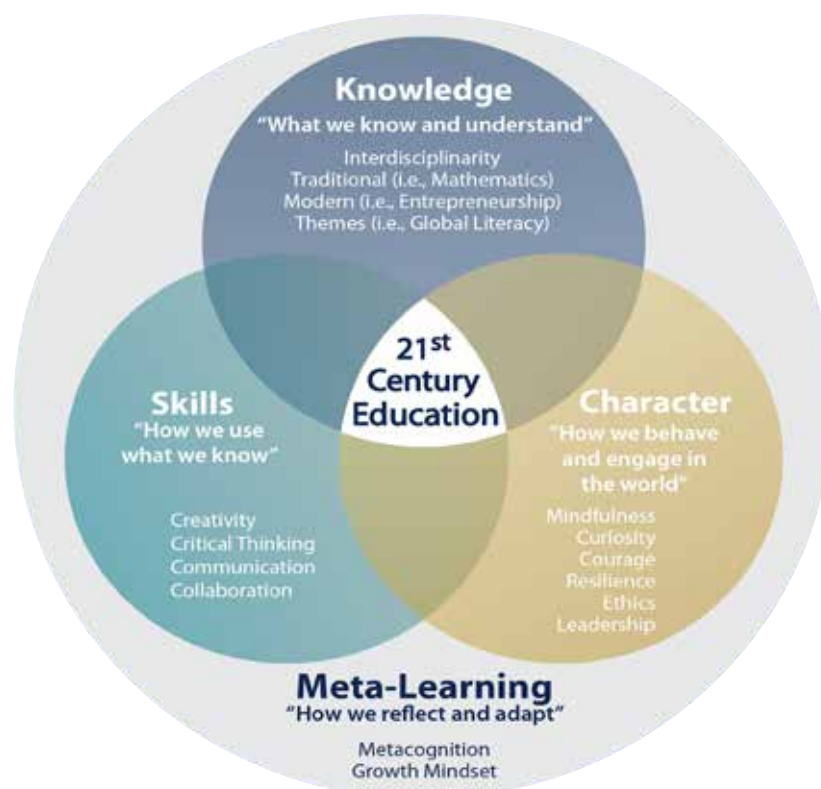
E³ has synthesised all of the attributes of Fadl's model above, as well as other key features identified as success factors in the 21st century in a learning model which includes the process (circle) towards achieving the E³ competences (see on the left – character, thinking and connection):
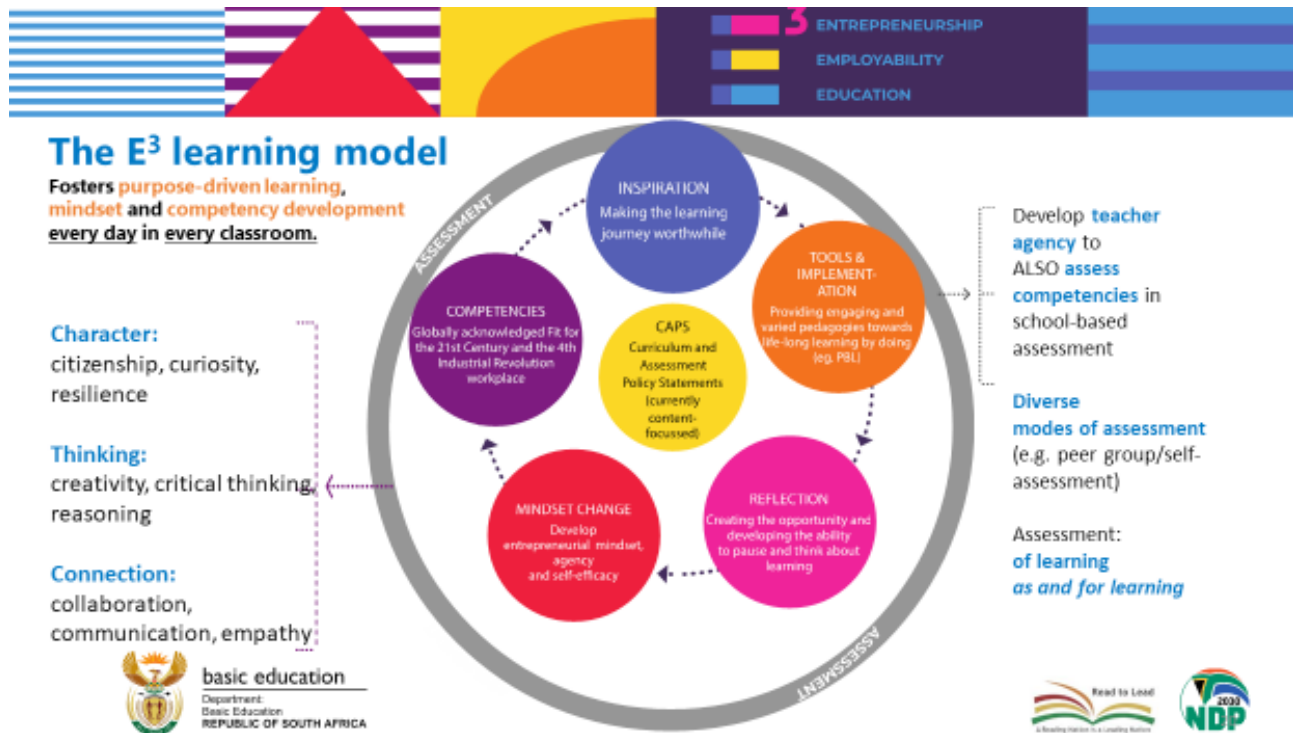
Let's study the competencies (on the left above) in more detail.

It is clear that the time has come for a major overhaul of the way in which we teach. Knowledge transmitted from a textbook to a passive learner can no longer deliver good results – our learners are millennials who need to be actively engaged to thrive, and we owe them all the strategies we can offer them to flourish in a vastly different world.

GO TO
ACTIVITY 7

1.2   Our learners are "Generation Z"

Generation Y and Generation Z are often referred to collectively as "millennials". The learners in our classrooms are mainly Generation Z (people born from the mid-1990s to the early 2000s). Their mindsets are very different from our own. In a sense, both young teachers (Generation Y) and their learners (Generation Z) are already "entreprenerials" even though they will not necessarily start their own businesses.
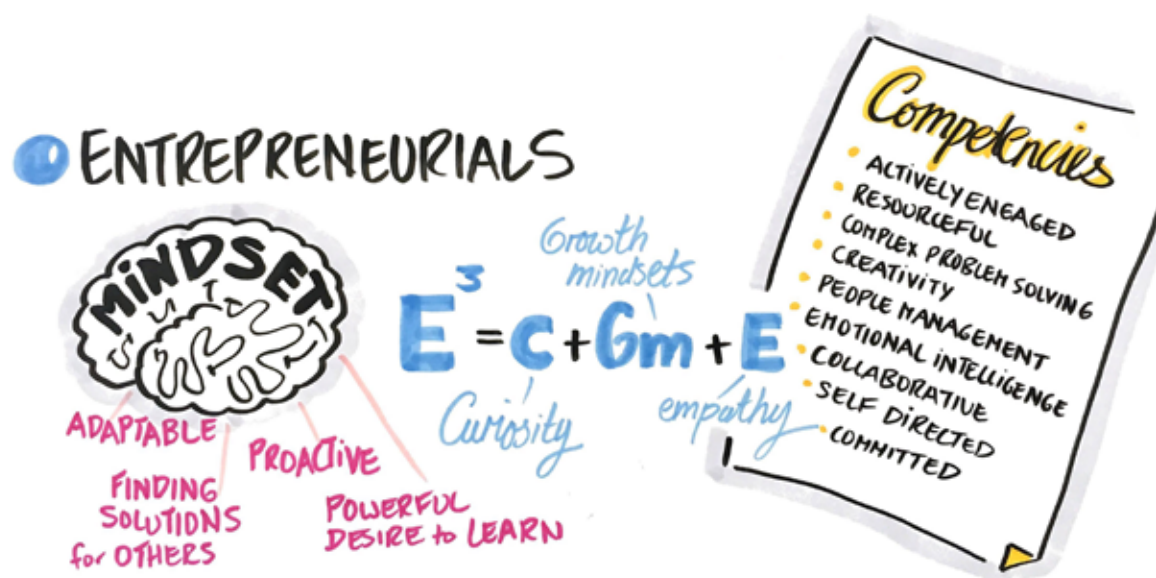
Let us focus on the needs of this generation in order to understand their learning preferences since, they are in many ways, readier than their traditional teachers for the 4th Industrial Revolution.

Teachers often complain about the lack of discipline in their classes and their learners' fascination with their cell phones and subsequent loss of interest in the lesson. Younger teachers (Generations X or Y) have greater tolerance for their learners' attitudes and learning styles, but without a definite plan to engage their Generation Z learners, classroom time will not be productive. By focusing on the needs of Generation Z, it will become clear that a whole new approach and a break from chalk and talk teaching is the most efficient way to engage the learners in our classrooms. What are millennial preferences?

In the breakdown below, we compare GenY and GenZ as many young teachers are GenY and are more able to connect with their GenZ learners. Both groups are referred to as millennials.

Technology
Of course they are technologically inclined! GenY is referred to as technology natives while GenZ are known as neo-digital natives. The rest of us are technology immigrants, apparently... millennials do not understand a world without it – and are not awestruck by it.

They don't use technology for the sake of using it, for them it is simply a way to get what they want: information, entertainment, connection – whatever it is what they are looking for. We used to find friends on the playground; they find them on Facebook. We used libraries; they use google.

We went shopping; they go online. We went to the bank; they log on. We bought cassettes (!); they download MP3s. We went to the drive in (?!); they use Netflix. We wrote letters; they send WhatsApps. The needs are pretty much the same, but the channel is way different. Faster.

Multi-tasking

GenZ know no other way. On the day that they were born, their dad was filming the occasion, while announcing their arrival to his brother abroad, with them in his one arm. That is how they were welcomed into the world. Whether or not doing more than one thing at a time is productive, is another topic altogether. The point is, that is how they operate: watching a television show with headphones, jamming their favourite songs, while texting a friend, and telling you how their day went. All of this happens as they devour a deli sandwich, and scratch the dog with their feet. Of course with GenZ the sandwich would be replaced by nuts and fruit – they are more aware of health and the environment.

It should matter

Their parents told them that they could become whatever they choose to – and they choose to do things that matter. GenYs and GenZs are often criticized for having a close to zero attention span, but if they are passionate about something, they can focus on it for hours. Take for example video games... boredom is not a result of lack of attention; it is a lack of passion. If they understand the value of what they are busy with, chances are that they will see it through. But don't think that you can con them into "value". They are very perceptive and anything that smells of "plastic" is a certain no-go zone. They want authentic. Real. And they want it now. It is of no use to tell them that they will reap the rewards someday, and that it will matter one day, or that they will understand the purpose later. They need to know upfront, otherwise they simply won't commit. Where Generation Y focuses on a genuine, "non- fake" *product*, Generation Z is more passionate about a real and authentic *experience*.

Opinion is important

This goes both ways. Firstly, they want to be heard. They were not brought up with "children should be seen and not be heard" – they were encouraged to be seen AND heard. Their parents engaged them in discussion about almost everything; they were expected to express themselves. Hence the constant blogging, uploading, updating, saying... They believe that their opinion matters and will be heard.

They are master negotiators – they've been trained that way since birth. And secondly, since they got immediate feedback at home, they want it everywhere. Not many things are quite as devastating as being ignored, or brushed off. They need to be heard out, and acknowledged. Furthermore, they are especially sensitive to the opinions of their peers.

> ### PLEASE NOTE
>
> Cultural environment does play a role, however. With many young South Africans growing up with their grandmothers or non-literate parents, this may not be true in many, particularly rural, families.

Work and play – in the same day

For both GenY and GenZ, work and play are inseparable. Their lives are drenched with entertainment, across all borders. Also, they witnessed their parents slaving away (to give them everything they want …) and they are silently rebelling against the institution of working your life away. They have tasted a fun-loving life, and they want to live it.

GenY are known for having big dreams and aspirations – provided that they are passionate about them, they are meaningful, and they can accomplish them in a playful way. Generation Z, however, is a little more cynical, and more cautious. They were born during a time of financial recession, and a boom in violence and terrorism, and they live in a world that has never felt safe. Unlike previous generations, who have strong opinions about issues like sexuality and diversity, GenZs are more accepting of people who are different – since they were born multitudes of people have migrated from their home countries and there is no country that remains homogeneous. The result is multi-cultural classrooms where learners are exposed to 'foreignness' daily.

> ### PLEASE NOTE
>
> In South Africa, GenZ are a little more serious as they are often the first generation to go on to tertiary education and the sacrifices of their parents and the extended family are heavy burdens to carry.

Generation "Why not?"

By no fault of their own, GenZ is not used to the word "no", simply because they have not heard it that much growing up. Their parents were never going to deprive them in the same way that they were denied. And whenever "no" was imperative, it was softened with an alternative. They could not have ice-cream, but what about frozen yoghurt? These were also the children who got spared punishment, and served time-out instead – somewhere on a designated chair or in their rooms. Reprimanding does not serve them well. Nonetheless, they value their privacy even though they love an audience.

> ### DID YOU KNOW?
>
> **Boomers** are people born between 1946 and 1964. Comically referred to as "helicopter" parents, they are overprotective and take an excessive interest in the life of their children.

PLEASE NOTE

In South Africa, in areas of poverty and deprivation, although GenZ are a more serious, social conditions may have enticed learners into crime and the drugs associated.

Up tempo

GenY are racing cars, so to speak. They are used to instant-everything. The on-line world spared them from ever waiting in any type of queue. And, of course, the **Boomers** would never let their GenY gems wait for anything… can you imagine the neglect that would make them feel! Never. Rather than letting GenY wait after school, or soccer, or a playdate, the Boomers ensured that their SUV was parked as close as possible to the gate, at least 15 minutes before the bell rang, or the whistle blew, or the party became a drag.

Interestingly, GenZ again are less likely to even go to parties – they have online friends and an online social life. This means GenZ learners with computers and data, are less likely to start smoking or consuming alcohol. They do not really use Facebook, preferring social media where they can communicate with their closest friends. They are also more likely to have created a personal brand to use social media communication.

Structure and instruction

This may seem like a contradiction – coming from a generation which seems to break all the rules known by the generations before them, but keep in mind that they were raised by "helicopter parents". They had detailed navigation all the time. Someone else monitored what needed to be done, where, and how. In most cases, GenZ only need to pitch up. So don't expect them to simply be able to figure something out, unless it is the latest smartphone. Then again, using technology rarely requires intuitive problem-solving skills. It is, actually, user-friendly … or so we are told! Therefore, GenZ needs structures and guidelines: What is required of them in order to accomplish the end goal? Click here, to get there…

A world in pictures

These "screenagers" as GenY is sometimes called, are naturally more comfortable in image-rich environments. They even succeeded in turning what we know as language, into hieroglyphics. Besides the odd letter or number, the latest trend is almost an entire conversation comprising smiley faces and icons. And their emotions are often expressed using emoticons! Generation Z watch a little less TV than do Generation Y with their top daily social media sites being YouTube and Instagram.

Just do it!

Gone are the days of the *thinkers* – GenY *does* it! They are more hands on and prefer to try stuff by themselves – to explore the world and their environment on their own. Both Generation Y and Z want to participate and not just observe. They are actively involved in whatever happens on the screen in front of them. This is why play-/activity-based learning engages them.

Social connection and team players

You are mistaken if you think that technology alienates them from one another. It is not uncommon for two friends sitting next to each other to communicate via texting. That is simply another way they connect. Millennials seamlessly move between physical and virtual interaction, and are much more positive about being team players than operating in isolation. They are also much more inclusive than generations before them, and comfortable with diversity.

Generation Z are even more accepting of diversity – they are the generation for whom gay culture and xenophobia are almost not an issue. They are very tolerant of "different-ness". Their interaction, if data is available, is likely to be mostly virtual and their social circle smaller and more cohesive ("tighter"). They have a strong sense of identity and will even create a virtual image or personal brand to use in virtual communication.

How do we equip ourselves for the millennials in our classrooms? We have to do things differently – chalk and talk is no longer relevant as the only way!

GO TO ACTIVITY 8

2.   The teacher and new pedagogies

2.1   Social Reconstructivism : reskilling teachers to address learner profile, the CAPS and competences

E³ subscribes to the learning theory of constructivism which is based on observation and scientific study about how people learn. Students construct their own understanding and knowledge of the world through active experiences and reflection. It is the process of asking questions, exploration and reflection. There are a number of teaching methodologies that align well with the constructivist view of learning, which is the pedagogy most likely to engage Generation Z.

In constructivism the teacher's role is to make sure he/she understands the learner's pre-existing conceptions, and guides the activity to address them and then build on them.

Within the overall framework of the constructivism theory, E³ teachers can choose appropriate pedagogies and teaching methodologies that are best for the content being taught. They need to select methodologies that contribute to some or all of the E³ elements and which unlock and develop 21st century skills. The following learning processes all contain the basic elements of constructivism, and are referred to by the E³ programme as Active Learning Pedagogies (ALPS). See Addendum for other ALPs.

The E³ model follows a learning cycle that will foster this mindset every day in every classroom.

3.   Project-based learning and the E³ Learning Model

3.1   What is Project-based Learning?

Project-based Learning (PBL) is an activity-based pedagogy which promotes individual and small-group learner involvement in solving real-life problems by developing rigorous research strategies. It's learning by doing and focuses on developing specific curriculum knowledge and skills while inspiring students to question actively, think critically, and draw connections between their studies and the real world, thus creating opportunities for 21st century skills.

3.2   Why choose Project-based Learning?

In South African schools, projects have been viewed as a tool for reinforcing knowledge. PBL views projects as a series of learner-driven activities and investigations, over a good period of time, so that learners, on their own, are discovering new knowledge and skills and developing strong values without the direct traditional lecture approach.

In this active learning classroom, learners actively participate in their own learning through encountering real life situations, in which they get first-hand information. This enhances learners' interaction, utilizing their curiosity to promote engagement.

The teacher acts as mentor and coach and creates an atmosphere for active participation by making provisions of real-life situations and providing the equipment, apparatus and resources for learners to learn on their own. The most important principle for active learning and teaching is that "learners have to find knowledge using their own ways, under the teacher's guidance and knowledge". The teacher is therefore not authoritarian in the classroom, and does not use coercive methods and domination to rule the classroom environment. Instead, the teacher facilitates learning, guiding learners to discover new truths.

Discovery/inquiry or problem-solving methods are said to be the brainchild of Dewey, who advocates that proper cognition comes through fusion of theory and practice, known as "praxis".

Active learning pedagogies and learning therefore differ from traditional approaches in that they are learner-centered, with the teacher contributing to learning more as a facilitator than an authoritative figure. Some of the differences between traditional and progressive approaches are summarized in the table below.

DIFFERENCES BETWEEN TRADITIONAL AND ACTIVE LEARNING APPROACHES	
Traditional	**Active Learning Pedagogies (CALPs)**
Teacher-centred	Learner-centred
Bigger class size	Smaller class size / groups
Isolated curriculum (subjects are taught separately)	Integrated curriculum (inter-disciplinary approaches to subjects)
Product-oriented	Process-oriented
Learning by repetition	Learning through various activities
Concepts are presented as facts to memorize	Concepts are presented as questions to be investigated
Basic learning	In-depth learning
Quantitative evaluation (numerical testing)	Authentic assessment

3.3 Projects versus Project-based Learning
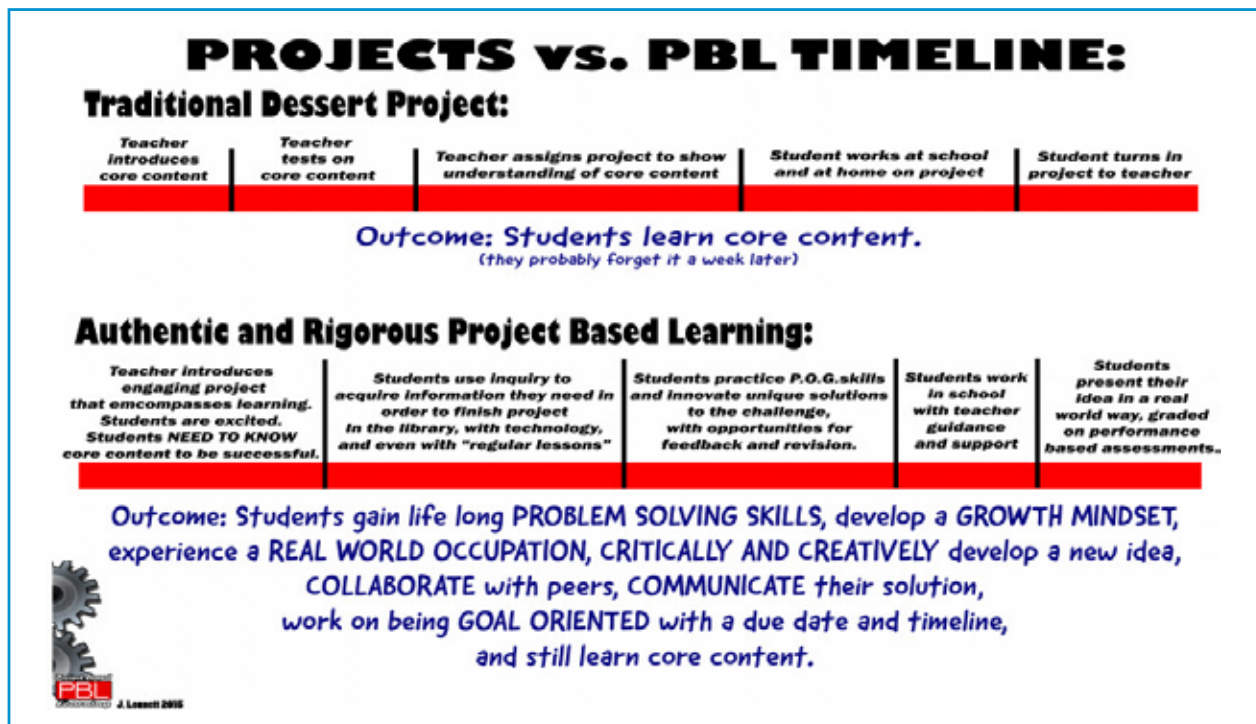
Project-based learning is not the "dessert" at the end of a chunk of information, but rather a series of structured events that lead to authentic and rigorous learning.

3.4 How does it work?

According to the Buck Institute of Education:

"Students work on a project over an extended period of time – from a week up to a semester – that engages them in solving a real-world problem or answering a complex question." They demonstrate their knowledge and skills by developing a public product or presentation for a real audience.

"As a result, students develop deep content knowledge as well as critical thinking, creativity, and communication skills in the context of doing an authentic, meaningful project. Project-based learning unleashes a contagious, creative energy among students and teachers." (https://www.bie.org/blog/pbl_can_start_in_your_classroom)

The time frame is extended to simulate reality as far as possible. With more time, learners can clearly see the importance of planning and also keeping track of the project's progress.

Thus: Project-based Learning is based on social constructivist principles about learning and knowledge stating that acquiring knowledge is not exclusively the consequence of direct transfer of knowledge by a teacher, but rather the result of the learner's personal involvement in the learning through self-directed learning and interaction with peers within the structure of a project plan. This approach ticks many Generation Z boxes!

3.5 Picking up the competences in a real-life way

Instead of teaching content, projects should be designed so that the activity is able to extract the core fundamental curriculum concepts in school subjects and apply them to the real world.

PBL helps learners practise these key learnings by applying them to problem-solving, using them to help learners answer complicated questions and create complex products.

DID YOU KNOW?

Just-in-time learning is an approach which is based on the assumption that learners will learn more if they access information *as they need it*, in other words "knowledge on demand". The textbook is a resource, rather than the driver of the activity.

GO TO ACTIVITY 9

4. Advantages of Project-based Learning

4.1 PBL equips learners for 21st century skills

There is no longer a place for chalk and talk teaching as the only methodology applied in the classroom. Although there is a space for traditional teaching for certain types of information sharing, "the old-school model of passively learning facts and reciting them out of context is no longer sufficient to prepare students to survive in today's world.

Solving highly complex problems requires that students have both fundamental skills (reading, writing, and math) and 21st century skills (teamwork, problem-solving, research-gathering, time-management, information synthesising, utilising high tech tools). *(https://www.bie.org/blog/pbl_can_start_in_your_classroom)*

Learners who have been engaged in excellent PBL during high school, have a much greater chance of being employed and of moving up the ladder into management and leadership positions, or maybe even starting their own enterprise. If they decide to work in the formal sector, they will be confident, enterprising and productive employees. If they decided to go on to tertiary education, they will be well prepared for scholarly skills required like research skills, and, best of all, becoming a lifelong learner.

4.2 Learning becomes more relevant and meaningful

Bringing the real world into the classroom provides a very powerful learning experience. A teacher committed to the principles and passionate about the PBL pedagogy, will encourage learners to be critical and independent thinkers and workers, and, since the project will visibly simulate the real world, learners will see value and be more committed. They will gain in confidence and, with time, become problem-solvers, not only at school but in their own lives.

4.3   Assessment is more meaningful as it is authentic

The assessment in PBL is more diverse and includes almost all forms of assessment, from the traditional test to observation of research practices. Authentic assessment also involves assessing learners' development in pairs, groups or individually while they are doing the work. This is less stressful for the learner and allows for repetition if the learner was not on point on a specific day.

Because there is so much opportunity for quieter one-on-one sessions with a learner while other learners are actively engaged, the teacher gets to know the learner better which can enhance both the learner's and the teacher's performance.

4.4   PBL accommodates diversity in the classroom

Globally classrooms are becoming less and less homogeneous and teachers have a challenge in ensuring that learners from different cultural and language groups, as well as those with differing abilities and orientations, are all treated equally.

Learners engaged in PBL have an excellent chance of developing their skills as they are, by the very nature of projects and the accompanying activities, forced to use various modalities in doing research, solving problems, discussing, and asking and answering questions.

4.5   PBL gives learners struggling with English communication more options for speaking

We know that in South Africa English communication is a key obstacle to academic success. If the teacher groups learners purposefully, she can ensure that each group has a strong and empathetic speaker of English to model conversation. Because most types of communication are informal and functional, learners not comfortable in speaking English are offered numerous opportunities to communicate within a low-risk environment.

4.6   PBL supports group work and collaborative learning

Much learning is social and learners acquire a myriad of new skills from their peers in well-structured group work, especially if the teacher configures groups intentionally for the outcome she wishes to achieve, e.g. a strong leader if she wants the group to operate independently or a mixed ability group if she wishes to spend more time with learners needing more assistance.

4.7   Research supports PBL

A growing body of international research supports the use of PBL. Schools where PBL

> *"builds the capacity of teachers to design and facilitate quality Project-Based Learning, and the capacity of schools and district leaders to set the conditions for teachers to implement great projects with all students."*

is practised find a decline in absenteeism, an increase in cooperative learning skills, and improvement in student achievement. When technology is used to promote critical thinking and communication, these benefits are further enhanced.

E³ is anchored by the Buck Institute for Education, founded in 1987, which, according to its Linked In profile,

5.   Essential project design elements

Project-based learning is often misunderstood, especially the depth and comprehensiveness of a good, solid project. The Buck Institute for Education in California is a non-profit organization that "creates, gathers, and shares high-quality project-based learning (PBL) instructional practices and products, and provides highly effective services to teachers, schools, and districts." The site includes many free resources and tools, and supports a community of educators interested in PBL-related issues.

To assist teachers in implementing good projects, the Buck Institute created a set of criteria to be used as a checklist in Project-based Learning design. E³ uses this model as the features are easy to understand and applicable, also in the South African context.

How do we create successful projects? The Buck Institute lists a number of criteria which all contribute to achieving a sound project design.

To ensure an excellent PBL process, we need the following elements to be integrated in the project design:
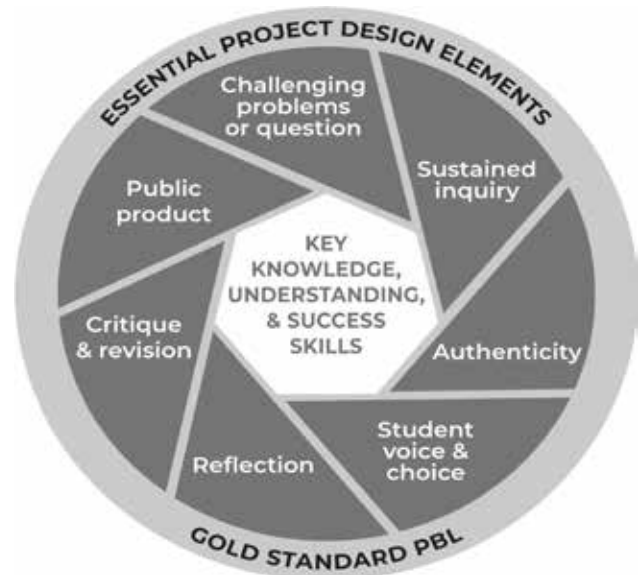
5.1   Challenging problem or question

This is a concrete (or abstract) problem which is real to the learners and projects are usually problem-based. In other words, the PBL is centred on a research-type cycle in which a problem is identified, research is undertaken, investigations are done and some or other solution is the result:

> *"An engaging problem or question makes learning more meaningful for students. They are not just gaining knowledge to remember it; they are learning because they have a real need to know something, so they can use this knowledge to solve a problem or answer a question that matters to them. The problem or question should challenge students without being intimidating." (Buck Institute)*

5.2   Sustained inquiry

PBL is different from the projects we are accustomed to. Merely looking up information is not enough: it is too shallow and does not demand active follow up and "testing" which leads to more depth. Sustained enquiry takes time, is taken seriously and it is iterative:
And, of course, sources of primary and secondary information are broad: from traditional "looking up" research to real-life interviews and field work.

> *"when confronted with a challenging problem or question, students ask questions, find resources to help answer them, then ask deeper questions – and the process repeats until a satisfactory solution or answer is developed."*

5.3   Authenticity

This is critical if we are to keep learners involved: the project must be real, not **a simulation of** reality. A project can be authentic in various ways, often in combination, e.g. the problem is a genuine problem that the school or community need to solve, e.g. What gift can we donate to our school? Raising money for the Grade 7 Legacy Project. Also: in combination it can be the production of a series of YouTube videos of local heroes to teach learners about role-modelling.

> *"Finally, a project can have personal authenticity when it speaks to students' own concerns, interests, cultures, identities, and issues in their lives."*

5.4   Student voice and choice

If learners have a say in the selection of the project problem, they work harder because they feel they own it, it speaks to them personally. If there is no personal commitment, the project becomes an exercise with no real value for them. Teachers should ensure that learners deeply understand the choice of project and why it is a problem that must be solved by them.

5.5   Reflection

John Dewey's ideas underpin a great deal of thinking related to PBL, especially the importance of reflection:

> *"We do not learn from experience. We learn from reflecting on experience."*

Learners and teachers should be reflecting on various questions during the process: what is being learned, why this learning is important and how the learning is presented. Are they learning about their own learning style? Reflection should not be a random exercise. Value should be attached to it, not only because it consolidates and internalises key learnings, but also because learners, through reflection, are discovering that their ideas are important as they make meaning of the world around them within a constructivist paradigm. Reflection also helps learners and teachers develop better PBL skills and attitudes.

5.6   Critique and revision

The outcome of good PBL is work of a very high standard, but this may not happen in the first cycle as teachers and learners grapple particularly with typical challenges: How deep is a good project? How do we integrate the anchor subjects with other subjects?

> *"Students should be taught how to give and receive constructive peer feedback that will improve project processes and products, guided by rubrics, models, and formal feedback/critique protocols."*

It is powerful to engage members of the local community and business leaders (from the "real world") to get involved in aspects of the projects, e.g. constructive feedback, a critical sounding board for new ideas, etc. Learners' own assessment of their own work, especially if accompanied by meaningful rubrics and checklists, will also push up their own standards.

5.7   Public performance

The learners' solutions or products are presented to as wide a public as possible for a few reasons: the work is generally of a higher standard if open to an audience larger than the classroom; when students are well prepared to make their work public, they are also prepared to defend their decisions in Question and Answer sessions, which embeds learning; public products and performances are a way for the learners and the school to communicate with all role players. As the Buck Institute articulately explains:

> *The message is, "Here's what our students can do – we're about more than just tests."*
> *https://studentsatthecenterhub.org/resource/buck-institute-for-education-bie/*

6.   Launching the project at school level

- Schools involved will announce the launch of all the projects (at the start of Term 3 or earlier) and also the culmination of the projects in a project week (towards the end of Term 3).
- Each grade will manage its own launch, e.g. a school competition (the winner of which is announced in Project week), an entrepreneurship quiz, an appropriate civvies day, etc.
- Project culmination week: all the products and solutions delivered by each grade's projects are up for public display. The broader the community involvement, the better for the learners!
- Schools will be encouraged to send YouTube videos of the best launch and other celebratory moments to be published on the E³ website and/or on the WhatsApp group.

GO TO ACTIVITY 10
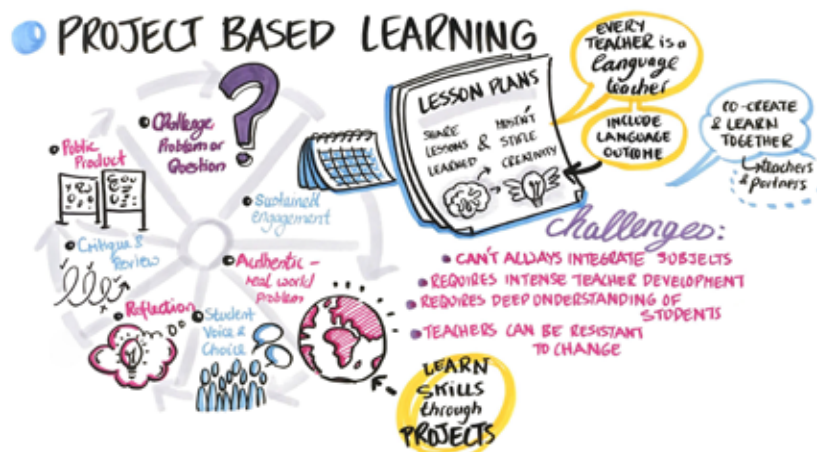
7.   Assessment in Project-based Learning

7.1   The goal of the assessment

Ensure you know what the goal of the assessment is:

Baseline – where are we before we start? Where do we need help?

Formative – how are we doing after each small step?

Summative – how did it go after a large chunk of work was completed?

Also: reflect on whether you are assessing the process or the product.

7.2   Product vs Process

Assessing the product	Assessing the process
Measuring the quantity and quality of individual work in a group project.	Evaluating individual teamwork skills and interaction.

7.3   Peer Assessments

Consider providing a rubric to foster consistent peer evaluations of participation, quality, and quantity of work.

This may reveal participation issues that the teacher might not otherwise know about. Learners who know that their peers will evaluate their efforts may contribute more to the group and have a greater stake in the project.

7.4   Self-assessment

Give learners an opportunity to evaluate their own performance
Help learners reflect on what they have learned and how they have learned it.
Consider asking learners to complete a short survey that focuses on their individual contributions to the group, how the group interacted together, and what the individual student learned from the project in relation to the rest of the course.

7.5   Integrate assessment throughout the process

Ensure that groups know how each member is doing by integrating assessment throughout the project: starting with baseline assessment at the beginning to ascertain what they knew before they started.

Groups need to know who may be struggling to complete assignments, and members need to know they cannot sit back and let others do all the work.

7.6   Assign specific roles in group work

The **roles** most often needed for **group work** include:
a.   Facilitator / Team Leader
b.   Recorder
c.   Presenter
d.   Timekeeper
e.   Artist / Illustrator
f.   Wild card (assumes any role if another role-player is absent)
g.   Human Resources (keeps the peace)
h.   Resource manager (ensures that all members have all the tools and resources they need to complete the project.)

When you first introduce **roles**, provide clear instructions for the responsibilities that come with each **assignment**.

7.7   Example: Group Work Assessment Rubric

Here is an example of a group work assessment rubric.
Filling out a rubric for each member of the group can help teachers assess individual contributions to the group and the individual's role as a team player.

Example of a Group Work Assessment Rubric				
Skills	**Advanced - exceeds expectations** **(4 marks)**	**Competent - meets expectations** **(3 marks)**	**Progressing - does not fully meet expectations** **(2 marks)**	**Beginning - does not meet expectations** **(1 mark)**
Contributions & Attitude	Always cooperative. Routinely offers useful ideas. Always displays positive attitude.	Usually cooperative. Usually offers useful ideas. Generally displays positive attitude.	Sometimes cooperative. Sometimes offers useful ideas. Rarely displays positive attitude.	Seldom cooperative. Rarely offers useful ideas. Is disruptive.
Cooperation with Others	Did more than others. Highly productive. Works extremely well with others.	Did own part of workload. Cooperative. Works well with others.	Could have shared more of the workload. Has difficulty. Requires structure, directions, and leadership.	Did not do any work. Does not contribute. Does not work well with others.
Focus, Commitment	Tries to keep people working together. Almost always focused on the task. Is very self-directed.	Does not cause problems in the group. Focuses on the task most of the time. Group can count on this person.	Sometimes focuses on the task. Not always a good team member. Must be prodded and reminded to keep on task.	Often is not a good team member. Does not focus on the task. Lets others do the work.

Example of a Group Work Assessment Rubric				
Skills	**Advanced - exceeds expectations** **(4 marks)**	**Competent - meets expectations** **(3 marks)**	**Progressing - does not fully meet expectations** **(2 marks)**	**Beginning - does not meet expectations** **(1 mark)**
Team Role Fulfillment	Participates in all group meetings. Assumes leadership role. Does the work that is assigned by the group.	Participates in most group meetings. Provides leadership when asked. Does most of the work assigned by the group.	Participates in some group meetings. Provides some leadership. Does some of the work assigned by the group.	Participates in few or no group meetings. Provides no leadership. Does little or no work assigned by the group.
Ability to Communicate	Always listens to, shares with, and supports the efforts of others. Provides effective feedback. Relays a lot of relevant information.	Usually listens to, shares with, and supports the efforts of others. Sometimes talks too much. Provides some effective feedback. Relays some basic information that relates to the topic.	Often listens to, shares with, and supports the efforts of others. Usually does most of the talking. Rarely listens to others. Provides little feedback. Relays very little information that relates to the topic.	Rarely listens to, shares with, or supports the efforts of others. Is always talking and never listens to others. Provides no feedback. Does not relay any information to teammates.
Accuracy	Work is complete, well-organized, error-free, and done on time or early.	Work is generally complete, meets the requirements of the task, and is mostly done on time.	Work tends to be disorderly, incomplete, inaccurate, and is usually late.	Work is generally sloppy and incomplete, contains excessive errors, and is mostly late.
TOTAL MARKS (24)	**COMMENTS/FEEDBACK:**			

Assessment in PBL is generally continuous and formative, but in the projects in this programme we are fortunate in that the formal assessments for Term 3 in Grades 4 – 6 Life Skills, Grades 7 – 9 EMS and Grades 10 – 12 Life Orientation are the "project" assessment. Grade 12 projects will, for obvious reasons, be completed by the end of Term 1 or 2. Teachers will have the rubrics they usually use for assessment of the projects in their grades. They are found in the actual project notes.

Also: we are hoping that the Life Skills, EMS and Life Orientation teachers will ask other teachers to assist with assessment wherever there is a gain for these teachers as well. We have suggested subjects with which there is possible integration with other subjects in the Project Notes.

The following rubric is generic and used globally to help you assess the process. The rubric assesses skills and processes only – you would have to adjust it if you wish to use it for CAPS-aligned assessment.

	★★★★ Excellent (4 points)	★★★ Good (3 points)	★★ Fair (2 points)	★ Poor (1 point)
Organisation	Extremely well organised; logical format that was easy to follow; flowed smoothly from one idea to another and cleverly conveyed; the organisation enhanced the effectiveness of the project.	Presented in a thoughtful manner, there were signs of organisation and most transitions were easy to follow, but at times ideas were unclear.	Somewhat organised; ideas were not presented coherently and transitions were not always smooth, which at times distracted the audience.	Choppy and confusing, format was difficult to follow, transitions of ideas were abrupt and seriously distracted the audience.
Content accuracy	Completely accurate; all facts were precise and explicit.	Mostly accurate, a few inconsistencies or errors in information.	Somewhat accurate; more than a few inconsistencies or errors in information.	Completely inaccurate; the facts in this project were misleading to the audience.
Research	Went above and beyond to research information; solicited material in addition to what was provided; brought in personal ideas and information to enhance project; and uitilised more than eight types of resources to make project effective.	Did a very good job of researching, utilised materials provided to their full potential; solicited more than six types of research to enhance project; at times took the initiative to find information outside of school.	Used the material in an acceptable manner, but did not consult any additional resources.	Did not utilise resources effectively, did little or no fact gathering on the topic.
Creativity	Was extremely clever and presented with originality; a unique approach that truly enhanced the project.	Was clever at times; thoughtfully and uniquely presented.	Added a few original touches to enhance the project but did not incorporate these throughout.	Little creative energy used during this project, was bland, predictable and lacked "zip".
Presentation mechanics	Was engaging, provocative and captured the interest of the audience, and maintained this throughout the entire presentation, great variety of visual aids and multi-media; visual aids were colourful.	Was well done and interesting to the audience; was presented in a unique manner and was very well organised; some use of visual aids.	Was at times interesting and presented clearly and precisely, was clever at times and was organised in a logical manner; limited variety of visual aids and visual aids were not colourful or clear.	Was not organised effectively; was not easy to follow and did not keep the audience interested; no use of visual aids.

Please do not view your projects as cast in stone. They are suggestions and feedback is welcome! Of course, if you are a PBL expert and you are confident enough to adjust the project yourself, feel free to do so as long as you keep to the CAPS, the guiding principles above and the Project-based Learning methodology.

GO TO ACTIVITY 11

8.   Supporting deep learning within Project-Based Learning

Because our trialling process is iterative, every year of M&E and every classroom observation undertaken by the E³ team, delivers information which will help us deepen the projects and to strengthen to process and develop teacher skills.

What follows are four strategies to deepen learning in the implementation of Project-based Learning (PBL):
•   the importance of recognizing diversity and being able to scaffold to address inclusivity;
•   an appreciation of the value of collaborative learning
•   an understanding of the LOLT and the recognition that every teacher is a language teacher if learning is to be embedded deeply;
•   the recognition that general classroom management enhances deep learning.

8.1   Diversity and scaffolding

Diversity
In South Africa, the curriculum and education system as a whole generally still have huge challenges to respond, in an adequate way, to the diverse needs of the learner population. Overcoming these challenges contributes to the reduction of the massive numbers of drop-outs, push-outs and failures (White Paper 6, p8).

White Paper 6 (DBE, 2001) is the policy framework that directs the building of a single, inclusive system of education and training, built on the principles of human rights and social justice for all learners. The policy framework states that the education and training system should promote education for all and foster the development of inclusive and supportive centres of learning that would enable all learners to participate actively in the education process so that they could develop and extend their potential and participate as equal members of society.

The South African Constitution (Act 208 of 1996) ensures the fundamental right to basic education for all South Africans. Section 29 states that "everyone has the right to a basic education". This requires the development of a system that accommodates and respects diversity, including departmental, institutional, instructional and curriculum transformation. In order to develop such a system, it is important that all teachers develop knowledge and skills to enable them to implement inclusive practice in the classroom.

Part of your responsibility as a teacher is to make sure you engage with thinking about ways to enhance your inclusive practice to ensure all learners in your class are learning.

Scaffolding
A core component of supporting learning for all is to provide effective scaffolding when required. The term "scaffolding" is a metaphor taken from the building industry – whereby the scaffold is a temporary structure that is taken away when the building can stand alone (English, ESL and more 2006).

Scaffolding must begin from what is near to the student's experience and build to what is further from their experience. Vygotskian theory shows that learning proceeds from the concrete to the abstract (Woolfolk, 1998). Scaffolding moves students from being highly supported in the learning process, to becoming independent, gradually withdrawing teacher support as students become increasingly able to complete a task alone (Woodfolk, 1998).

How to scaffold: differentiated Instruction for Project-based Learning

A good way to start is by recognising that every learner is worthy of individual attention and that you should adjust as far as possible, to accommodate individual needs by scaffolding to support each learner.

Consider the following steps when planning your differentiated approach to teaching.

Step 1: There are different approaches in lesson delivery

In project-based learning, learners have many chances to understand the content, so capitalise on the opportunity to get to know learners individually.

Before you start planning a PBL cycle, have a goal in mind:
• What skills do you want them to practise?
• What do you want them to show in the end?

Plan questions for ''low'' and ''high'' learners before you start Project-based Learning.

Here are some easy things to incorporate into PBL to deliver your lesson in different ways:
• Videos
• Reading selections
• Writing assignments
• Building a 3D model
• Discussion

Step 2: Different learning styles

One of the essential elements of PBL is student choice and voice. Not only do learners have a choice in how to show what they've learned in the project they turn in, but they also have several choices throughout the project.

Everyone must do a Project in Life Skills, but it can be done with the strategies and tools that work for the individual student.

PBL gives learners a chance to learn through technology, text, art, multimedia, and much more.

Step 3: Grouping to differentiate

During PBL, strategically move groups around often.

Not only does it keep the project fresh and new for learners, but it also allows for the teacher to implement differentiated instruction through grouping.

Different groups to try in your classroom:
• Create similar groups and pull a small group of struggling learners.
• Mixed groups.
• Group learners by interests. There are a lot of choices during PBL, so get some learners together that make the same choice!
• Try groups of 2, 3, or 4 people.
• Try partnerships of 1 boy and 1 girl.
• Allow time for learners to work independently but provide a space if they want to work in a "whisper group".
• Give group members roles, based on their talents and affinities.

Step 4: Using a rubric to differentiate
Create rubrics for each PBL activity.

Give them to learners before you even start the activity, so that they know what the teacher expects to see by the end of their project.

Step 5: Enrichment for advanced learners
Challenging advanced learners is equally important as is helping the struggling ones.

Build varying challenges into your project-based learning because it allows you to differentiate for those learners without having to do anything extra during the actual activity.

Create extra challenging activities as part of differentiation.

GO TO ACTIVITY 12

GO TO ACTIVITY 13

8.2 Every teacher is a language teacher

In the South African context you are likely to find many learners in your classroom being taught in a language that is not their home language. This means that it is every teacher's responsibility to support the language development of learners regardless of whether you are a language teacher or not. Teachers of every subject need to understand that the learners' ability to access subject content is enabled or constrained by their language proficiency.

Teachers play a critical role in supporting language development. Beyond teaching children to read and write in school, they need to help children learn and use aspects of language associated with the academic discourse of the various school subjects. They need to help them become more aware of how language functions in various modes of communication across the curriculum. They need to understand how language works well enough to select materials that will help expand their students' linguistic horizons and to plan instructional activities that give students opportunities to use the new forms and modes of expression to which they are being exposed.

Teachers need to understand how to design the classroom language environment so as to optimize language and literacy learning and to avoid linguistic obstacles to content area learning (Wong, Fillmore & Snow, 2000, p. 7).

Research has identified stages of language acquisition. Every teacher should be aware of what these are and know some simple strategies for supporting learners in each of these stages. The table below unpacks signs of each stage and how a caring teacher can support her struggling learners.

Language Acquisition Stage	Description of stage	General Support Strategies
Pre-Production	Silent period. Absorbing, not speaking	Emphasise listening. Use visuals. Speak slowly, shorter words, gesture.
Early Production	Learner uses short words and sentences, but is still doing more listening than speaking.	Develop new vocabulary. Use visuals. Pair work.
Speech Emergent	Speech more frequent, words and sentences are longer. Context clues. Vocabulary begins to increase.	More academic vocabulary. Visuals and make connections with learners' background knowledge as much as possible.
Beginning Fluency	Social speech fairly fluent in social situations with minimal errors. Academic language challenging.	Work in pairs and groups to discuss content and process the new language. Ask critical questions. Model academic language. Visual support and vocabulary.
Intermediate Fluency	Commenting in the social language is fluent, but beginning to offer opinion or analyse a problem.	Identify and model key academic vocabulary and phrases. More academic skills. Brainstorming prioritising, category summarizing, compare and contrast.
Advanced Fluency	Fluent communication in all contexts. Comfortable when exposed to new academic information.	Continue with visual support, building on background knowledge, pre-teaching vocabulary and making connections between content areas. Offer challenging activities to expand vocabulary.

A learner with poor language ability in the LOLT may be misunderstood as "slow" or uninterested. It is critical that all teachers recognize that non-engagement in class may be a result of a language obstacle or maybe just a sign that the learner needs more time. A basic understanding of language acquisition would help teachers understand that if, for example, a new language learner is ''silent'' this is not because s/he is ''slow'', but because s/he is absorbing and listening deeply (i.e. s/he is in the Pre-production *Period of Silence* and this is normal and actually an extremely important stage.)

Teachers need to have a basic understanding of the order of language acquisition and how to support each stage. In the diagram on the right, BICS and CALP refer to the order in which language is learnt and a knowledge of this helps teachers understand learners with difficulty, as we often judge learners who are socially fluent as being academically capable. This is not true as social language (BICS) is superficial and learners can only get to CALP below the surface and deeper once a learner is socially confident and prepared to take bigger language risks (Cummins, J).

Basic Interpersonal Communication System

BICS

CALP
Cognitive Academic Language Proficiency
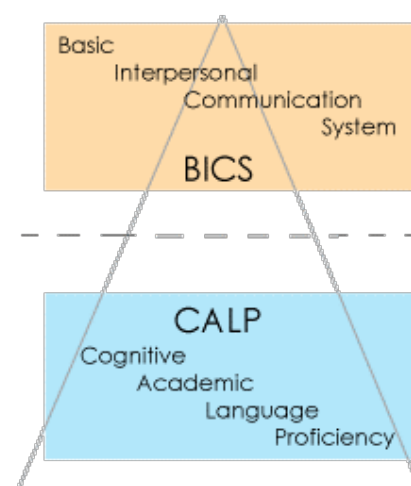
8.3   Classroom Management

Project-based Learning demands different and often unpractised skills from the traditional teacher.

Teachers need to create conditions in the classroom for PBL to thrive. This requires classroom management strategies and positive behaviour management techniques that allow for a learner-centred classroom.

Classroom management strategies need to support collaboration and a productive group work environment. This requires careful planning and defined roles for each member of the group. Opportunities should be created for individual tasks, group work and reflection.

How do we manage our classrooms during PBL? Here are some considerations to assist you in managing your classroom:

> **DID YOU KNOW?**
>
> "In an effective classroom, students should not only know what they are doing. They should also know why and how." Harry Wong

> **DID YOU KNOW?**
>
> *Just-in-time learning* is an approach to information and training that requires that needs-related training be readily available exactly when and how it is needed by the learner.

1: Keep learners busy
If learners are engaged, they are less likely to misbehave. Use project-based learning activities that have printable guides and sheets to help learners organize their work, and have easy access to "Just-in-time" information either from textbooks, the internet or printed out information sheets which you can later collate and use to form a generic toolkit which they can use for the PBL. Textbooks take on a different role: they are useful for research and no longer drive the lesson.

Take the time to plan each day of your PBL with a fresh activity that will have learners asking a myriad of questions. Encourage this as this is the beginning of critical thinking. Groups offer shy learners a space in which to take risks, like asking a question.

Each day should have a specific task or topic, but different learners might be working towards this task in a different fashion, probably very different from your own strategy. Allow them the freedom to explore different ways of solving a problem.

2: Teacher involvement is critical
In the past, teachers have used projects as a chance to allow learners to do as they wish, while they marked books at their teacher desk. This is not project-based learning!

Project-based learning is also not a time for you to lecture to your class.

Take the time during PBL to walk around and talk to your individual learners. Because everyone is very busy, this is an excellent opportunity for one-on-one conversations with the learners in your class, especially those who shy away from attention.

Don't wait for the "usual suspects" to raise their hand and ask for help.

Engage each learner in discussion and ask questions about the topic. Groups are a safe space for shy learners to find their voice.

This allows you to build relationships with your learners and let them know that you're nearby paying attention to what they're doing.

3: Engage struggling learners by selecting suitable tasks which will empower them.
Target the learners that you know struggle in class. Diversify the activities so that every learner is working on something s/he is good at!

Plan out the questions you'll ask these learners and be prepared to listen to what they have to say. Do not be afraid of silences. Learners sometimes take time to formulate their answers. Give them space and do not succumb to the need to fill the silence with your own words. Let them take responsibility for filling that space.

4: Have a variety of topics for learners to explore
During project-based learning, we want learners to ask questions and dive deeper into the topic.

Have computers, books, and other media available so that no learner has ever really completed the task. Expect more from learners. They should be working against time. This will force the group leader or timekeeper to manage time, encourage creativity. This will result in high productivity.

If learners are really "into" a topic, they won't stop engaging. They will look for more information on their own.

This is a part of learning that needs to be instilled in learners because they aren't always allowed the freedom to explore a topic.

5: Universal classroom management strategies
•   Model ideal behaviour.
•   Let learners help establish guidelines.
•   Document rules.
•   Avoid punishing the class.
•   Encourage initiative.
•   Offer praise.
•   Use non-verbal communication.

https://performingineducation.com/classroom-management-and-project-based-learning
20 Classroom Management Strategies | Prodigywww.prodigygame.com › blog › classroom-management-strategies/

8.4   Group work and assessment of group work

Collaboration is meaningful for different types of learning
Incorporating collaborative Project-based Learning during class time can be an excellent way to help learners develop and practise problem-solving skills, as well as teamwork and collaboration. Collaborative learning refers to learning in and through groups by interaction and dialogue. Mirroring own beliefs and ideas is a process that creates inter-subjective and meaningful knowledge. Collaborative learning enables you to negotiate and create new meaning. It is part of our active engagement in the world and is shaped by our dynamic relations with the world.
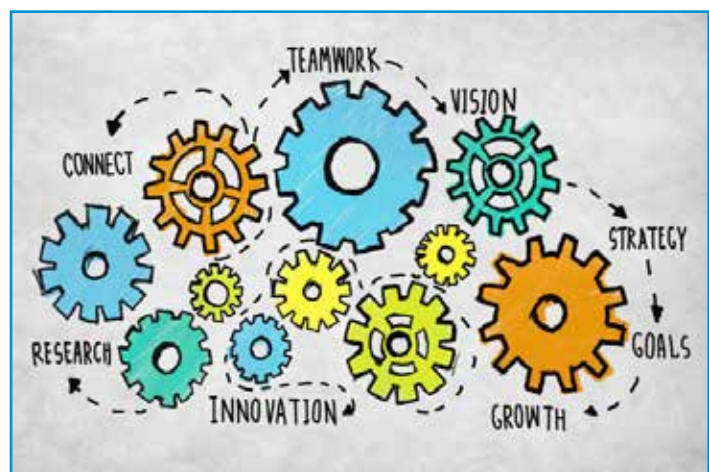
Learning in Project-based Learning is fundamentally a social process that involves participation in group learning. This collaborative work in the group can be the most rewarding and productive part of your learning as you work together helping each other to gain an understanding of what you came across in research and how it can be applied to the problem presented.

This applies to teachers and learners. Collaboration allows you to develop the security and authority needed for taking responsibility for your own learning and is an essential skill you need in your career as you will be invariably working as a team member.

Follow these steps in organising group work:

Step 1: Preparing for group work
Think carefully about how learners will be physically arranged in groups**.** Think about how the layout of your classroom will impact the class activity. Will learners be able to hear one another clearly? How can you moderate the activity to control volume?

Insist on socially appropriate conduct between and among learners to respect people's differences and create an inclusive environment.

Share your rationale for using group work. Learners must understand the benefits of collaborative learning.

Step 2: Introducing the group activity
Decide on group size. The size you choose will depend on the number of learners, the size of the classroom, the variety of voices needed within a group, and the task assigned.

Decide how you will divide learners into groups. Randomly assign learners to groups by counting off and grouping them according to a number. Another idea is to distribute sweets (e.g., Smarties or hard, coloured sweets) and group learners according to the flavour they choose.

Allow enough time for group work. Recognize that you won't be able to cover as much material as you could if you lectured for the whole class period. Cut back on the content you want to present in order to give groups time to work. The learning will be deeper.

Have learners form groups before you give them instructions.

Explain the task clearly. This means both telling learners exactly what they must do and describing what the final product of their group work will look like.

Set ground rules for group interaction. Especially for extended periods of group work, establish how group members should interact with one another, including principles such as respect, active listening, and methods for decision making.

Encourage the learners to ask questions. Even if you believe your instructions are crystal clear, learners may have legitimate questions about the activity. Give them time to ask questions before they get to work.

Step 3: Monitoring the group task
Monitor the groups but do not hover. As learners do their work, circulate among the groups and answer any questions raised.

Avoid interfering with group functioning — allow time for learners to solve their own problems before getting involved.

Be slow to share what you know. If necessary, clarify your instructions, but let learners struggle — within reason — to accomplish the task.

Step 4: Ending the group task
Provide closure to the group activities. Learners tend to want to see how their work in small groups was useful to them and/or contributed to the development of the topic.

Oral reports: Have each group give one idea and rotate through the groups until no new ideas arise.

Written reports: Have each group record their ideas and either present them yourself or have a group member do so. One variation on this is to have groups record their conclusions on a section of the blackboard or on flipchart paper that is then posted on the wall.

PRESENTING FEEDBACK

Step 1: Information Is Key
•	Clear instructions should be presented in class, with a visual aid, on the screen and/or a paper version.
•	Allow time for questions after the instructions are given.
•	A copy of the instructions should also be made available to all learners.

Step 2: Teach Presentation Skills
Many learners suffer from anxiety or an extreme fear of public speaking, therefore it is important to start off the lesson by asking the following questions:
•	*Who likes oral presentations?*
•	*Who is extremely comfortable at the front of the room?*
•	*Who is relatively comfortable?*
•	*Who is completely uncomfortable?*

To help learners feel comfortable at the front of the classroom, review body language by teaching the types of physical presence elements that help make a solid presentation e.g. voice projection, pace of speech, posture, eye contact, use of hands, etc.

For the first few oral presentations, have the students write out what they will say with a pencil on notebook paper. This will aid them in gaining confidence in front of an audience. Allow them to use their papers while they are giving their oral presentation.

Teaching strategies to deliver a presentation:
The main purpose of an oral presentation is to present subject content in an organized, concise and effective manner to a live audience.

Model how you want learners to participate. When responding to learners' answers, model the respect and sensitivity that you want the learners to display towards their peers.

Ask learners to reflect on the group work process. They may do so either orally or in writing.

Step 3: Practise, Practise, Practise
Practise makes perfect! Stress the importance of practising out loud, in front of someone that they are comfortable with, which can be themselves in the mirror, their dog or cat, mom or dad.

The more they practise and know their presentation well, the more confident and comfortable they will feel at the front of the classroom.

Use smartphones or tablets to film each other.

Learners then watch the video and complete a feedback sheet given to them in advance.

These feedback sheets are used to help learners make improvements to their content, organization, and presentation skills.

Offer learners 3 ways of conducting their oral presentation:
- In front of the entire class
- In small groups
- One-on-one with the teacher

Step 4: Assessing a group presentation using a Rubric

A: Pre-Class Preparations

1. Did the presenting group provide the teacher and the audience with the relevant handouts before class?

YES	NO

2. Was the presenting group prepared to begin on time?

YES	NO

B: Handouts and Layout of content

1. Were the handouts and layout of the presentation easy to read and understand? (out of 3 marks)

Rating Scale	
1 = Poor	
2 = Average	
3 = Good	

2. Were the handouts and visual presentation used effectively to make the relevant points? (out of 3 marks)

3. What was the overall quality of the handouts and visuals? (out of 3 marks)

C: Presentation Skills

1. Was the presenting group well prepared for their presentation? (out of 3 marks)

2. Did the presentation proceed smoothly and coherently? (out of 3 marks)

3. Was the length of the presentation appropriate? (out of 3 marks)

4. Did the members of the presenting group effectively communicate the group's presentation and recommendations? (out of 3 marks)

5. Did the members of the presenting group effectively handle questions from the audience? (out of 3 marks)

6. What was the overall quality of the presentation? (out of 3 marks)

D: The Presentation

1. Did the presenting group provide a clear, concise and well-defined statement of the situation/ project? (out of 3 marks)

2. Did the presenting group identify the relevant issues and/or opportunities? (out of 3 marks)

3. Did the presentation adequately address all the relevant issues and/oropportunities? (out of 3 marks)

4. Was the information presented logically; was it consistent and correct? (out of 3 marks)

5. Did the presenting group make specific recommendations and provide adequate support for their decision? (out of 3 marks)

6. What was the overall quality of the presentation? (out of 3 marks)

7. Was team work during the presentation evident? (out of 3 marks)

E: TOTAL MARKS (50):

F: General Comments:

GO TO ACTIVITY 14

9.   The successful Project-based Learning teacher – re-imagining traditional teaching

A successful teacher in the not too distant past was one who was 100% well-prepared. She had studied the lesson from the textbook and had even made herself notes so that she would be able to answer all questions. She was strict, but fair and allowed no noise in class. Everyone worked quietly and studiously … She was truly organized and a master at her trade.

Why is this style of teaching no longer successful today?

In the above scenario there are glaring problems which lead to very important questions:
- Can a teacher today ever be 100% prepared? Why? Why not?
- Is the textbook the best driver of a lesson? Why? Why not?
- Can a teacher prepare well enough to answer all learner questions? Should she be there to answer their questions? What is her role?
- Is the word *teacher* still relevant?
- Is a teacher who allows no noise in the classroom fair?
- Is no noise educationally sound?
- Is being truly organized being able to keep a class quietly working?
- What are the characteristics of a teacher who is a master of her trade in the 21st century?

The Buck Institute of Education has listed a number of standards to describe the successful Project-based Learning facilitator:

PBL facilitator	Traditional teacher
Designs and plans A learner problem arises and a lesson is created around it. She knows her curriculum and this will help her to link the problem to relevant CAPS information/knowledge transfer.	Selects a textbook and writes a lesson plan for that lesson. Sometimes uses scripted lesson plans.
Aligns to standards Knows the CAPS and links her lesson to outcomes and expectations from the CAPS.	The textbooks are already CAPS-aligned so teacher does not need to take out her CAPS document at all.
Builds the culture Understands that school culture plays a huge role in modeling appropriate and meaningful relationships.	Classroom culture is not her concern. Who learners are and what they think is not her concern – as long as they do their work and keep quiet. She demands respect. Being kind leads to undisciplined learners.
Manages activities The project is designed around practical real-life solutions. There is very little transmission teaching. Learners are given a task with clear instructions and the teacher observes learners and helps them when needed. She is a class and activity manager.	There are no classroom activities. She presents the lesson, and asks learners to summarise that lesson or even do a creative summary on a poster as a project.

Scaffolds student learning She understands that all learners are different and learn in a variety of ways. She sees her role as that of supporter as each individual learner is helped to climb to the next level because of her one-on-one coaching.	She never allows group work and seldom has a private one-on-one with any of her learners. Once she has taught her lesson, she gives learners work, usually the questions at the end of the chapter and she goes back to her marking. She has so many exercises to mark.
Assesses student learning In her classroom, there are 3 types of assessment and each is treated differently and has a different purpose: Baseline – Where should we start? Where are the gaps? Formative – How are we doing, every little step of the way? Summative – How did we do when tested on a chunk of work?	The marks that she allocates are used to decide whether a learner is successful or not. Paper and pen tests, she believes, are a solid gauge of learner progress, and knowledge and information are assessed because statistics give the best results.
Engages and coaches Her role is to pay attention to the needs of every learner and to offer them support, not via formal teaching, but by one-on-one coaching especially as they work in groups.	No activities or homework are done in class. Classroom time is for her lesson, so she has no opportunity to coach learners or observe their progress.

Teachers need to reassess their roles. The time for good lecturing has passed. The time has come to put learner needs and their problems at the centre of lesson and to do everything in our power to make school useful for life after school, to help learners know and believe in themselves and to give them space to become problem solvers themselves...and, of course, to have fun! Learners go to school not to **WORK,** but to **LEARN**!

MODULE 4 – DEVELOPMENT AND SUPPORT FOR TEACHERS AND SCHOOLS

1.   The Professional Learning Community (PLC) as a teacher empowerment tool

The E³ programme aims to build teacher agency and develop capacity to implement Professional Learning Communities (PLCs). PLCs are the ideal teacher development mechanism to build this teacher agency and simultaneously offer a platform for needs-driven learning where 'just-in-time' information can be sourced and applied in the classroom. The E³ programme sees PLCs as a key teacher empowerment tool.

1.1   What is a PLC?

The Integrated Strategic Planning Framework for Teaching Education and Development (ISPFTED) defines PLCs as follows:

> *"PLCs are communities that provide the setting and necessary support for groups of classroom teachers, school managers and subject advisors to participate collectively in determining their own development trajectories, and to set up activities that will drive their development." (ISPFTED, p.14)*

A PLC is exactly what it says it is. Let's focus on the three words professional, learning and community in an attempt to explore this definition:

Professional
- A PLC is gathering of professional people who wish to develop their professionalism and who are proud and ambitious to learn and grow.
- Their attitude is serious – they are there to improve the learning in their classrooms and they are not afraid of putting their needs on the table.
- They respect the opinions of their colleagues as part of the professional discourse.
- The discussion and work produced in the PLC starts with identifying needs in order to become more professional.
- PLC members seek knowledge and understand the importance of research on all levels, either their own classroom-based research (e.g. data gathering of learner errors) or by analysing important research reports to ascertain key areas of need.
- PLCs are committed to continuous improvements, whatever it takes. This can be that teachers discuss how to translate educational innovations into their practice. It can also mean that teachers contribute to the research base by investigating and reflecting on their own practice.

Learning
- PLCs are all about learning and not teaching: *learning for learners* as well as *learning for teachers*, learning for leaders, and learning for schools.
- Professional learning includes learning based on knowledge from practice and knowledge from research. This research can be done by teachers in their classrooms,

for example by comparing the effect of various instructional strategies on learning, or by studying research reports.
- In PLCs, the learning takes place by sharing and collaborating on a wide range of topics. Collaboration is systematic as teachers share ideas and learn from each other to improve classroom practice. PLCs have a culture of collaboration which focuses on learning for all its members.

Community

- PLCs are based on the vision that learning is more effective when it takes place within a *community of professionals*.
- PLCs acknowledge that learning is very effective if it takes place in a social setting. Schools can provide the structure and culture to facilitate such collective learning.
- PLCs can be very powerful and, if research takes place, and interventions are efficiently carried out, PLCs can even begin to change school culture and even the culture of the surrounding community.
- PLCs are usually based at school level, but often local schools collaborate and share ideas and resources which can empower communities larger than that of one school.

1.2   The power of PLCs

- PLCs help educators find autonomy, achieve a sense of belonging, grow in their confidence levels and improve their level of competence.
- Participating in PLCs positively influences teachers' teaching strategies, and this has the potential to improve quality education for all learners.
- Research shows that PLCs are more relevant to the daily work of educators than more traditional methods of training.
- We therefore urge that PLCs be prioritised as a CPTD method by all levels in the education system.

Brodie (2013:6) stated that the focus of the PLC is a crucial element:
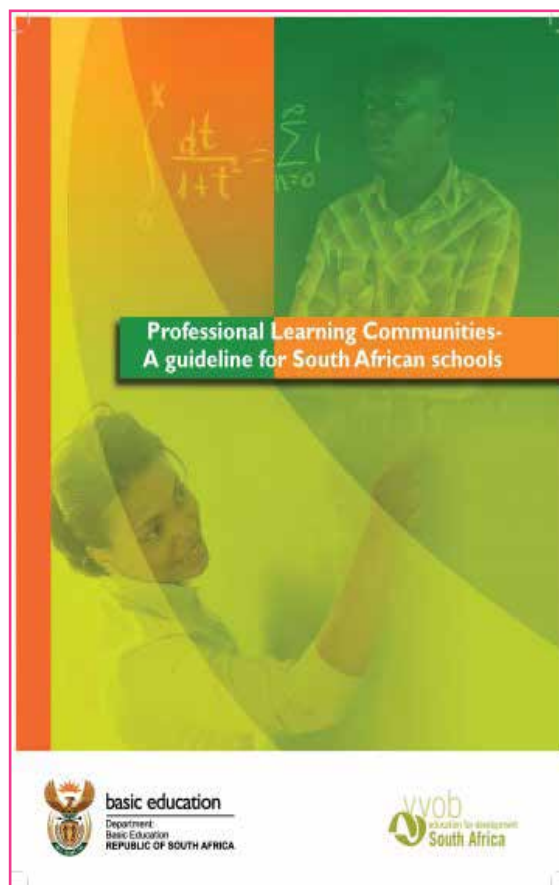
> *"in order to have the greatest effect on student learning, the focus must relate to the instructional core – the relationship between teacher, student and content and involve a problem of practice based on learner needs".*

E³ and PBL offer teachers the ideal opportunity to establish PLCs to focus on the implementation of Active Learning Pedagogies in the classroom.

2.   Involvement of business, NGOs and Civil Society

As explained above, E³ operates within three very clearly defined work streams: school implementation and institutionalization was discussed above. Partnerships and opportunity creation undertaken by E³ will be unpacked below:

Institutiona-lisation	School implementation	Partnerships and stakeholder relationships
...of Active Learning Pedagogies ...to ensure local, provincial and national DBE structures support	...ensuring teacher training & support & growth of tribe ...as well as engaging learners, and SMTs	...to ensure that schools are hub of an eco-system supported by civil society, HEIs, NGOs and parents...

The E³ programme has recognized the importance of building a supportive ecosystem through engagement with a variety of partners to support the building of 21st century skills.

To build these eco-systems, schools are placed at the centre of community hubs.

It is envisioned that each school has the opportunity to be a hub in its community that is both contributing to, and being assisted by, the community around it.

This community includes businesses which can provide intern opportunities and resources as well as civil society organizations, NGOs and local government structures which can work in the schools to provide expanded learning opportunities such as competitions, tech-platforms and extra-curricular support.

The E³ programme will facilitate engagement by a variety of additional national partners, and in this way the network of support will be expanded and society can become engaged in developing our children.

The programme will support activities to build these supportive ecosystems.

The E³ programme will offer a platform for all education initiatives working with DBE schools who are striving to bring 21st century skills into the pedagogy.

The vision is that the different stakeholders work together in a variety of ways and are involved in a series of symbiotic actions which include awareness and outreach, the development of human capital and critical talent, public–private partnerships, multiple sources of innovation, intellectual property and funding.

In a dynamic and growth-generating entrepreneurial ecosystem, there is a high degree of interaction and coordination among these key elements.

To support the development of an E³ programme ecosystem, E³ has targeted the following role players and processes under the Partnership and Opportunity Creation stream:
- Parent mobilisation and support
- Civil Society, Business and other Government Departments
- HEI's advocacy & mobilization

Relationships with partners would be supported by a partnership protocol/ agreements to formalize the commitment and articulate activities that will be activated under the partnership.

3. The power of interconnectedness via technology

At the heart of the teacher development model is the aim to build teacher agency and knowledge and skills to develop learners with a problem-solving (21st century) mindset.

3.1 The Black Belt for self-initiated teacher empowement

In addition to training at the outset of the programme, E³ plans to design a continuous professional development model to empower teachers –
a technology-based 'Black Belt' for teachers which will actively foster the development of global competencies inside the classroom on an ongoing basis.

The Black Belt will be housed on a gamified platform and linked to the E³ WhatsApp group. The Black Belt materials will be open source and aim to develop self-initiated and life-long learning amongst teachers.

E³ is building a recognition programme around the way that PBL is provided to teachers in order to re-engage teachers and reward them in educating South Africa's youth.

The initial offering in the Black Belt will be three levels of courses around PBL as illustrated below:

Yellow Belt
(NQF6 12 credits): Demonstrate understanding the basic PBL mechanics and the ability to teach and facilitate a class engaged in a prescribed PBL.

Green Belt
(NQF7 12 credits): Demonstrate the ability to: use "Design Thinking" to design a PBL project, and its assessment; Use "Integrated Thinking to deal with potential contradictions between CAPS and PBL; Teach and facilitate a class engaged in this PBL project.

Black Belt
(NQF8 12 credits): Demonstrate the ability to Monitor and evaluate social and emotional learning and cognitive development of learners engaged in a PBL project. Adapt and change their teaching and facilitation in response to emerging learners' development.

3.2   Communication via WhatsApp

The programme aims to create an E³ village using a WhatsApp channel where teachers from different provinces can check-in, share live media of ongoing implementation, share best practice and receive support.

The vision is that teachers will be active and engaged, sharing their learning experiences and inspiring their colleagues on a national scale.

This is the start of the E³ professional learning community, which will also be linked to our website and media to share learning and augment existing M&E processes, as well as help support the skills development of participating teachers.
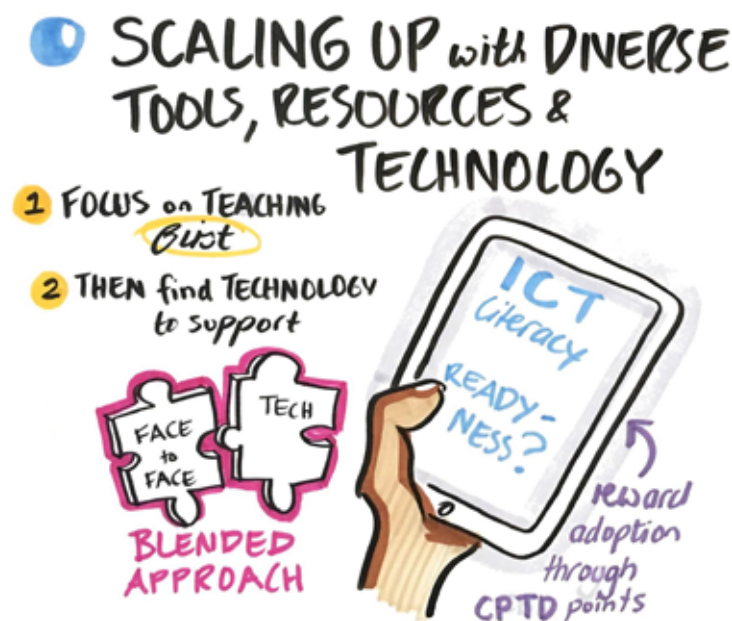
4.   School visits

- There are two types of visits to school – 'Celebrate and Support' visits and Monitoring and Evaluation (M&E) visits. The visits are very different in terms of function.
- Annual school visits are planned to a sample of E³ schools with the purpose of celebrating success and offering developmental support.
- The impact of the pilot is being measured by a professional monitoring and evaluation team.
- Their processes measure the mindset and competency of teachers and learners, as well as the development of schools and surrounding stakeholder communities towards the goals of E³.
- This formal monitoring and evaluation process rigorously engages with key stakeholders and conducts classroom observations to inform the teacher development model.

5.   Coaches

In response to an outcry for more teacher support after the 2019 M&E results, it was decided to appoint co-facilitators to assist provincial master trainers to train teachers as well as coaches to visit and support schools during the implementation in Term 3. Their functions are unpacked below:

Coaches		
Area	Objectives	E³ Tasks to enable
Planning	To meet the DCESes and be assigned co-training sites with the DCESes	Provide coaches with a letter of introduction to schools from the DG.

Facilitate their meetings with the DCESes in order to establish the protocols per province. |
	To engage with Principals and SMTs to set expectations.	Ascertain with the DCESes as to how the coaches should liaise in terms of the best strategy to engage with principals.
	To create a space for dialogue with the teachers to plan how to implement the PBL project in the classroom in terms of logistics and mindset.	Provide the Project Planner as a guide to PBL in the classroom.
Observation	To observe every teacher in their mentee group.	Provide a reflection and feedback template with space for additional insights from coaches.
Support	To ensure SMT support (informing, information gathering, etc).	Provide a list probing questions.
	To identify challenges and brainstorm solutions with teachers after observation visits.	Provide an observation template with space for additional insights from coaches.
	To listen to, acknowledge and document learner stories in terms of the overall goals.	On the observation template, there will be a space for feedback on learner engagement, competency decelopment and stories. (Verbally, voice notes, reports, etc.)
	To utilise WhatsApp group communication with their teachers as part of the support process (once a week).	Remind coaches to get phone numbers and create a WhatsApp group and "meet" them on a group once-a-week to track project progress, facilitation issues, challenges, etc.
	To initiate PLCs and create a sustainable plan for PLCs (also in order to achieve SACE points).	VVOB to assist in training of coaches. Assist the coaches to plan for meetings, ensure 4 solid interventions which are action research based which deliver results and documented as specified by SACE so that they can upload 10 points.
	To train how to facilitate a PLC.	Included in VVOB training.
Reporting	To E³ (verbal, videos, voice notes, written reports).	Set the expectations for what reports are required in a document in the training.
	To provide Website uploads.	Orientate them to the E³ website and show them the protocols as to how to upload their stories, feedback, etc.
	To participate in Coaches' WhatsApp group.	E³ to set up a Coaches' WhatsApp group.
Reflection	To conduct a reflection process at the end of term 3 with their teachers during the last PLC.	Provide a framework for reflection guided by input from the M&E team.
	To attend an E³ reflection session with E³.	Provide a framework for reflection guided by input from the M&E team.

6.   Parent Empowerment

Parents form an intrinsic part of the eco-system which supports schools. E³ recognises the need to empower parents to understand their children and the schools they attend better. Not only will more informed parenting improve learner results, but also offer much needed support to teachers and schools.

A Parents' Academy is currently being run as an Action Research project in the Free State. Parents attend monthly lectures and workshops relevant to parenting ; not only do they immediately feel part of the school ecosystem, but they themselves are appreciating the importance of lifelong learning and as such they are becoming socially relatable role models to their children. The results of this research will guide E³ on the way forward.

7.   How to mobilise districts, circuits and schools

All stakeholders in education need to share responsibility in spreading the E³ message.

Subject advisors, school management (SMT) and teachers should receive training. It is of utmost importance that we:
- raise awareness;
- distribute knowledge;
- foster a conversation, and
- establish a culture that will encourage and effect a mindset change among decision makers, educationalists, managers, government officials – and of course teachers!

8.   The role of the District Teacher Development Centres (DTDCs)

The role of the DTDC is encapsulated in the Integrated Strategic Planning Framework for Teacher Education and Development (ISPFTED)

> *"District Teacher Development Centres (DTDCs) are physical sites located in districts and manageably accessible to teachers working in surrounding schools. They will serve as local support sites for teachers, as sites from which curriculum support staff can operate, as sites where teachers can access shared resources, as sites of delivery for continuing professional development courses and as meeting points for teacher professional learning communities." (ISPFTED,2011).*

The Integrated Strategic Planning Framework on Teacher Education and Development in South Africa (2011-2025) established the DTDCs.

The plan states that the centres which were set up to be training hubs in the districts, are meant to co-ordinate teacher development programmes and provide reports on all training activities conducted in the province. The DTDCs should consolidate the training plans from the different units in the district into one District Teacher Development Plan and coordinate the implementation of all teacher development programmes.

In the line with the teacher development role of the DTDC's it is hoped that they can play a key role in developing and supporting E³ teachers and schools and that ultimately learners will benefit from sustained, coordinated effort to ensure that they are educated, employable and entrepreneurial.

How can you play a role?

ADDENDA

ADDENDUM 1

WHY THIS NEW INTERVENTION?

The time has come for South African learners to develop the thinking skills and mindsets to ensure success in a changing world. The DBE is adamant that learners need a new way of thinking and teachers a new way of teaching to ensure that after school, 100% of learners are employed, study further or start their own businesses.

The new **E³** programme will help learners develop the mindset, skills and practical experience to achieve this, and to have fun while doing so. The executive summary of the newly-approved policy explains the new intervention:

(Please note that references to EiS refer to E³)

Executive Summary

This document forms the core of the blueprint for the national implementation of Entrepreneurship, Social Entrepreneurship and higher order employability skills as core principles into the National School Curriculum.

The purpose is to dramatically increase the employability of all learners, so that they might find their way successfully into, and contribute to, the creation of an inclusive economy.

70% of all South Africans employed in the formal sector are employed in a business or organisation under 50-people in size[1]. This percentage increases to close to 90% if we include the informal sector and non-profit organisations. Small business therefore remains the backbone of current and future employment in South Africa.

The growth of small businesses depends upon the creation of more entrepreneurs. However, South Africa has one of the lowest levels of recorded entrepreneurship on the African continent [2]. If as a nation we can work together to improve the levels of entrepreneurship and social entrepreneurship, the opportunity exists for a dramatic increase in employment levels and consequent reduction in poverty.

Our target is to see one hundred percent of all school-leavers employable, studying further, or equipped to start their own businesses in the future.

Youth unemployment in the country stands at an all-time high[3] particularly between the ages of 14 and 24, it is essential therefore that we better prepare school leavers with the knowledge, skills, attitudes, and action abilities to more meaningfully access and participate in the economy.

This concept document has been formulated by the DBE task team established for this purpose, working in close collaboration with the Enabling Entrepreneurship Technical Task Team (EETTT) of the Human Resource Development Council, under the auspices of the Deputy President. It is centered on the most practical, effectual methodologies that can be systematically embedded in the National Curriculum to address issues of youth employability.

The most obvious way to address South African unemployment is to a) grow the existing small business sector to become an even greater employer of youth, b) produce more employable learners from the school system at all ages with a mindset of solution generation and action implementation which corresponds with greater employability, and c) encourage South Africans to become job creators instead of job seekers. Such a mindset depends upon the creation of an Entrepreneurial culture from as early an age as possible.

This blueprint is based directly on recommendations approved by the Deputy President and the Human Resource Development Council, on 2 April 2014, as well as the Council of Education Ministers and all other key education structures in the preceding month.

The Council of Education Ministers, as well as HEDCOM before that, requested for a detailed blueprint to be drawn up as a discussion document around the implementation of the recommendations.
This is the purpose of this document.

The EETTT formulated four Key Recommendations, which were approved by the Deputy President and key cabinet ministers in the HRDC SA on 2 April 2014:

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[1] Source: Minister of Finance, Budget Speech 2012
[2] GEM report 2014 (Global Entrepreneurship Monitor)
[3] World Economic Forum 2015 youth unemployment survey: South Africa has currently the third highest youth unemployment in the world between ages 14 and 24

Executive Summary

1. **Collaborate with the Foundational Learning Task Team**
2. **Introduce Mandatory Entrepreneurship Education**
3. **New teacher's education is required for new and existing teachers**
4. **Actively encourage businesses to engage with local educational institutions**

The focus on Entrepreneurship Education is to develop innovative, independent learners who will become highly competent employers and employees, and to do this through developing these learners as citizens who have a mindset geared towards actively engaging with and contributing to socio-economic problems surrounding them and their communities.

In other words, the stimulation of empathy alongside a problem-solving orientation will foster a realistic, and sustainable way to unleash the potential of our youth, in the process developing a new social entrepreneurial and entrepreneurial class, alongside a new generation of more employable school leavers.

It is important to stress that the purpose in adding entrepreneurship and social entrepreneurship to the curriculum is not only to develop entrepreneurs, but also to equip all learners in the best possible ways for the realities of the working world, thereby greatly increasing their employability.

Entrepreneurship education by its very nature involves action-led, practical learning that develops creativity, logical skills and practical problem solving. Not only are these skills invaluable to an entrepreneur, they belong to the category of higher order employability skills.

It is the intention of this initiative to reach over a twenty-year period an estimated 25 million South Africans, with a new more self-reliant and solution oriented mindset. By this time, almost half of the country will have had exposure to an approach which will unleash the skills required to build the economic engine of this country, to build an entrepreneurial nation that will simultaneously reduce poverty and unemployment, but place South Africa in a worthy position in our world family.

All recommendations are realistically placed within a step-by-step timeframe over a 16-year period, to coincide with the National Development Plan and its targets for 2030. Targets will also align with the objectives of the New Growth Path Plan.

We commence with those recommendations that are easiest, most cost-efficient and practical to implement first. There are opportunities at our disposal to start with effective, and meaningful changes, without any major financial or administrative disruptions and this is the approach the team has taken.

This initiative is not necessarily about strengthening the curriculum, but strengthening the implementation of the curriculum to develop this entrepreneurship and employability mindset.

This blueprint document starts with the context and background to the recommendations. The detailed implementation steps are covered in Sections 17 and 18 of the document.

It is important to note that this document is still a discussion document for consultation purposes and will be amended accordingly.

In conclusion, since studies have shown that high-impact entrepreneurship along with social entrepreneurship is a powerful engine for job creation, the creation of a more entrepreneurial culture in South Africa – beginning with the implementation of entrepreneurial education from an early age can therefore be an effective poverty-fighting tool and hence one of the major long term solutions to our country's needs.

ADDENDUM 2

STATUS OF SOUTH AFRICAN EDUCATION

Let us take a long, hard look at the state of education in South Africa today and the rate of un-employment as a starting point.

2.1   PIRLS 2016: Our learners cannot read meaningfully

Nic Spaull, Senior Researcher in the Economic Department at Stellenbosch University and analyst of education trends in South Africa, is outspoken as he comments on the shocking results in the 2016 PIRLS Report, which is implemented by the Centre for Evaluation and Assessment (CEA) run by Professor Sarah Howie:

"78% of South African Grade 4 children cannot read for meaning in any language. I think this was the most striking thing for me – that we had previously underestimated the number of South African children that couldn't read for meaning. Previously we thought the number was 58% (using pre-PIRLS 2011 Intermediate Benchmark) but it turns out that it is 78% (PIRLS Literacy Low International Benchmark). Basically, we were using the wrong benchmark in the past. This is the first time that the easier PIRLS test (which used to be called pre-PIRLS, and is now called PIRLS Literacy) was put on the PIRLS scale."

> **78%**
> of South African Grade 4 children cannot read for meaning in any language

Some view the PIRLS report as being "unscientific" with questions being raised like: *Were the tests of similar difficulty when translated into the indigenous languages?*

All things considered however, it is clear that South African learners and learners internationally need to read with meaning.

2.2 PIRLS 2016: Our learners are badly bullied at schools

As shocking, and especially relevant for this training session, is the amount of bullying taking place at schools:

"Apart from the horrifically low levels of reading achievement, South Africa also has the highest incidence of bullying among all 50 countries that participated in the study. 42% of Gr4 students indicated that they were bullied weekly (p.226 in the report), compared to 15% in the US and England."

Why would bullying feature in training learners for entrepreneurship and 21st century skills?

Apart from obvious reasons, i.e. the DBE recognizes that school bullies could become violent adults, it is well-researched that learners cannot learn effectively and productively if they are afraid, particularly in acquiring language skills. The affective filter is a screen that is influenced by "emotional variables that can prevent learning". According to Krashen, this filter is set off by anxiety, fear, stress, and a lack of self-confidence and motivation. (Krashen's Hypotheses https://sites.educ.alberta.ca)

2.3 Our matrics are beginning to deal with critical thinking but communication in English of these skills is a challenge

Dr Gillian Godsell from the Wits School of Governance gave an interesting talk at GIBS in 2014 in which she highlighted the need for "Serious Social Investing". She applauds the CAPS for moving away from rote learning but adds that although critical thinking skills and higher order learning are developing amongst learners, (but not necessarily their teachers!) their ability to articulate these newfound skills is hampered by an inability to read and speak English proficiently (cf. PIRLS Report):

"But, there is a dark side. The critical thinking embedded in today's matric examination must be expressed in English. And while we have upped the demands to analyse and think critically, we have failed dismally in giving our children the language tools in which to answer these critical questions. Time and again, tutors working at matric level tell me: when a question is explained to a learner, the learner says "Oh, is that what they want to know? Oh, I know that." And indeed, they do know it. But they can't say it, and they don't even recognise that that is what is being asked for."

2.4 Our youth are not displaying an entrepreneurial intention

It is reassuring that the CAPS does engage some higher order thinking skills and that the curriculum is promoting independent and critical thinking, problem-solving skills and a collaborative approach, yet learners do not have the confidence or informed decision-making skills to consider entrepreneurship, either pre- or post-university, as a possible intention.

What are we doing wrong? We lag behind the "entrepreneurial intention" needed to start small businesses in a country where unemployment remains high. Mike Herrington believes that the Education Ministry is letting schools down.

SA'S EDUCATION SYSTEM KILLING OFF ENTREPRENEURSHIP

REPORT REVEALS SOUTH AFRICANS' 'ENTREPRENEURIAL INTENTION' LAGS WAY BEHIND AFRICAN PEERS

29 MAY 2017 - 05:40 MIKE HERRINGTON

For a country that has produced companies such as Bidvest, African Rainbow Minerals and Discovery, it's hard to imagine entrepreneurship in SA is falling behind its African counterparts.

Yet this seems to be the case. The latest South African Global Entrepreneurship Monitor (GEM) report found that only 10.1% of South Africans of working age intend starting their own business in the next three years, compared to 41.6% in the other African countries that were surveyed.

Even more disconcerting is that this rate of "entrepreneurial intention" has been declining in SA over the past few years. In 2013 it stood at 15.4%, while in 2010, it was 19.6%.

This is a deeply troubling statistic in a country that desperately needs a vibrant small business sector to reignite its economy. Research in many other developing countries has shown that small- and medium-sized enterprises can have a significant effect on reducing unemployment and driving growth.

But in SA, a declining number of people believe they are capable of becoming entre-preneurs. In 2015, the GEM found that 45.4% of working-age adults believed they had the knowledge and skill to start their own firms. In 2016, that fell to 37.9%. In the other African economies surveyed, it is 58.6%.

Thus: although the unemployment statistics are improving slowly (see the graphs below) a drive towards building an entrepreneurial awareness within schools is a national priority and, the sooner learners can start, the better. Linear development towards creating an entrepreneurial intention amongst learners will take too long. The DBE has to devise a programme in which learners leapfrog into the future.

SOUTH AFRICA UNEMPLOYMENT RATE

SOURCE: TRADINGECONOMICS.COM | STATISTICS SOUTH AFRICA

SOUTH AFRICA UNEMPLOYMENT RATE

SOURCE: TRADINGECONOMICS.COM | STATISTICS SOUTH AFRICA

2.4.1 Why is entrepreneurship education important?

Entrepreneurship education:

a) develops enterprising attitudes and mind-sets in learners and nurtures their entrepreneurial talent;

b) prepares learners for self-reliance at a time when formal wage employment opportunities in the South African labour market are scarce;

c) stimulates more young women and men to consider establishing their own businesses as a viable career option of choice rather than of necessity;

d) unleashes creativity and allows learners to develop business ideas;

e) allows learners to develop social business ideas, i.e. business with a social purpose that seeks to address social and environmental problems and challenges;

f) provides young men and women with the essential skills to start businesses and develop new products and services that in turn will create new jobs. If the entrepreneurs prosper, the communities in which they operate will also prosper.

2.4.2 Why entrepreneurship is important for communities:

Entrepreneurial success builds pride in communities because of a need for:

a) personal satisfaction

b) achievement orientation

c) recognition of achievement

d) expression of leadership ability

e) self-motivation

f) profits

g) making a difference

h) creating employment.

Entrepreneurship development can be expressed as improvement in the quality of life, or, put in another way, the provision of life skills, for an individual or community. Entrepreneurship education is similar to citizenship education and an exercise in nation-building – it provides people with the personal skills to take action and make changes to improve community life.

A healthy business sector will contribute to a more even distribution of income throughout the population. In this regard, some of the strongest arguments for entrepreneurship education have a social orientation. Underlying social entrepreneurship is a deep concern for the well-being of others. Empathy anchors social entrepreneurs.

One sobering fact facing those with responsibility for SME development, is the generally high failure rate of new businesses. In developed countries, approximately 50% of all new businesses fail in their first three years of existence. In developing countries, the failure rate is even higher.

When a small business fails, it is often not only a financial tragedy but also a family tragedy. The psychological problems of those people involved in the business may be as great as their financial losses.

In many instances, these failures could have been avoided by proper entrepreneurship education and training before the business was initiated.

Class system: A group of youngsters in Langa, Cape Town, relax against a wall bearing a painting of Steve Biko. A new study shows how SA's education system is failing the youth. Picture: DAILY DISPATCH

ADDENDUM 3

THE FOURTH INDUSTRIAL REVOLUTION

Globally we are on the edge of a mammoth revolution in technology and it is critical as educators that we prepare for it.   The scale of the changes will change the way we buy and sell, are transported, learn ... in fact the way we live will change drastically. The scale and complexity of the revolution will be "unlike anything humankind has experienced before."

Teachers and schools must prepare a way of responding in an integrated and all-embracing manner or else our learners will be left behind. This course is part of the response required.

This is not the first revolution to hit us. There have been three before this one:
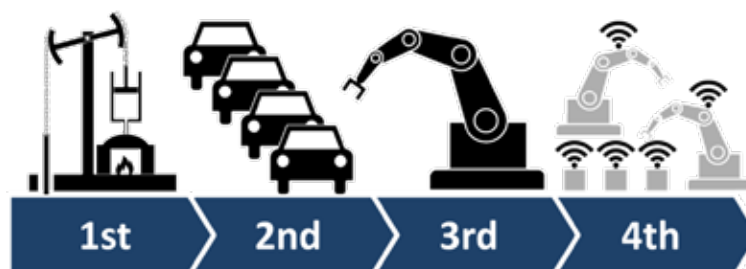
Source: Christoph Roser at AllAboutLean.com

The First Industrial Revolution is aligned with the invention of the use of water and steam power to mechanize production.

The Second Industrial Revolution is characterised by the use of electrical power to mass produce.

The Third Industrial Revolution is known as the digital age as technology and information are used to facilitate production.

The Fourth Revolution is not really industrial but digital and it started in the middle of the last century. It is only beginning to realise today. It is often referred to as the internet of things and artificial intelligence and it is characterised by a mass of technologies that is "blurring the lines of the physical, digital, and biological spheres." And, the speed of change is exponential. By the time our current learners leave school, the world as they knew it will no longer exist.

Unless learners have had some insights on these changes and how to respond, they shall be out of their depth.

Already artificial intelligence is upon us. Think of self-driving cars, drones, robots doing the work of people in some industries (i.e. virtual assistants). 3-D printing is already well-established while many schools still believe that their photocopier is their greatest digital asset!

3.1   Challenges and opportunities

For many, especially those who have been able to access technology freely, these concepts do not seem alien as they already bank, buy and sell and book flights using the internet. They have seen drones in action (albeit in movies) and have probably also been exposed to robotics and 3-D printing.

But for most South African children the world outside the safe confines of their schools and homes will be a huge challenge. We have to prepare them for responses to an unknown world. If they are able to embrace this world with confidence, the opportunities are enormous: costs, especially in transport and communication will reduce, markets will be opened globally, and the cost of buying and selling will drop. Especially for entrepreneurs, the forecast is good and thus, by implication, an ability to tap into these opportunities will encourage entrepreneurs. In turn, the unemployment rate is likely to drop – if our learners are ready for the challenge. A new mode of thinking will also ignite academic fires in learners who wish to continue their studies or hone skills needed for the job market.

It is crucial that learners develop their critical and creative thinking skills as this is where the highly paid jobs will lie:

"The largest beneficiaries of innovation tend to be the providers of intellectual and physical capital—the innovators, shareholders, and investors—which explains the rising gap in wealth between those dependent on capital versus labour."

Good schooling is non-negotiable for future prosperity: in high income countries, labour as we know it is fast disappearing:

"…the demand for highly skilled workers has increased while the demand for workers with less education and lower skills has decreased. The result is a job market with a strong demand at the high and low ends, but a hollowing out of the middle."

Continuing with their studies post-Matric is a good choice for learners who do not have a job or an entrepreneurial intent.

3.2 The impact on people

The effect on human beings and our identity is articulately expressed by Klaus Schwab, the Founder and Executive chairman of the World Economic Forum:

"I am a great enthusiast and early adopter of technology, but sometimes I wonder whether the inexorable integration of technology in our lives could diminish some of our quintessential human capacities, such as compassion and cooperation. Our relationship with our smartphones is a case in point. Constant connection may deprive us of one of life's most important assets: the time to pause, reflect, and engage in meaningful conversation.

One of the greatest individual challenges posed by new information technologies is privacy. We instinctively understand why it is so essential, yet the tracking and sharing of information about us is a crucial part of the new connectivity. Debates about fundamental issues such as the impact on our inner lives and of the loss of control over our data, will only intensify in the years ahead. Similarly, the revolutions occurring in biotechnology and AI, which are redefining what it means to be human by pushing back the current thresholds of lifespan, health, cognition, and capabilities, will compel us to redefine our moral and ethical boundaries.

3.3 Shaping the future

As awe-inspiring and overwhelming as that sounds, human beings, and our learners, if primed, will be able to manage these changes, and even exploit them for their own good. They will have to move away from linear thinking and develop strategic problem-solving skills. Most importantly, however, our learners need to have a secure sense of self and the confidence to venture into unknown territory. As it is potentially a world in which much information will be fake, critical thinking and a strong ethical sense is a given:

"In the end, it all comes down to people and values. We need to shape a future that works for all of us by putting people first and empowering them. In its most pessimistic, dehumanized form, the Fourth Industrial Revolution may indeed have the potential to "robotize" humanity and thus to deprive us of our heart and soul. But as a complement to the best parts of human nature— creativity, empathy, stewardship—it can also lift humanity into a new collective and moral consciousness based on a shared sense of destiny. It is incumbent on us all to make sure the latter prevails." (Klaus Schwab is Founder and Executive Chairman of the World Economic Forum)

How can the education system ensure that learners are equipped for this exciting future? Two strategies that should be implemented at the soonest possible opportunity are first a curriculum review (medium term) and an immediate reassessment of current teaching pedagogies. A curriculum review is not within reach immediately although we know that a repackaging of the curriculum would have to "modernise" the approach to teaching STEAM subjects, enhance communication subjects and introduce more modern subjects like intra- and entrepreneurship. So we shall focus, instead, on progressive pedagogies to fast-track learning and engaging in the near future. A deep understanding of the Experiential Learning Cycle (ELC) and an appreciation of Project-based Learning (PBL) will be our starting point. These pedagogies, once understood, will enable us to start right now.

ADDENDUM 4

KEY OUTCOMES IN TEACHING WITHIN THE NEW SPACE

Key outcomes in teaching for the Fourth Industrial Revolution include the following knowledge, skills and attitudes and values.

Knowledge	Skills	Attitudes and values
Key concepts in the STEAM subjects (Science, Technology, Engineering, Art and Mathematics.) Core concepts in more modern subjects like Entrepreneurship, Global Climate Change, Robotics etc.	4C's: Creativity, Critical Thinking, Collaboration Problem-solving Communication in English Leadership	Decision-making Flexibility Confidence Self-belief Resistance and commitment Empathy Ethics

So how should we respond to all this information? Three viewpoints give us an insight of what is needed by learners to engage successfully in a changing world.

4.1 Professor Brian Armstrong BCX chair in Digital business at the Wits Business School

Professor Armstrong urges us to recap on previous industrial revolutions to understand an important fact: predictions do not always work out. In the last fifty years, despite the advent of computers, despite the fact that people said that computers would do away with our jobs, the exact opposite has happened. People said that the advent of the steam engine would take away jobs. It didn't happen. People said that electricity would take away jobs, it didn't. The big difference, however, is that with the 4th industrial revolution the rate of change is exponential. It is happening so quickly that unless we have quick thinking skills, and the ability to change and adapt very quickly, we will be at a disadvantage.

What does the future look like? According to Professor Armstrong despite the advent of technology, human beings will still be at the top of the food chain, especially those who are leaders, who are truly creative, and those who have the ability to design in a complex manner. On the other hand, there is a good chance that computers will take over what we call knowledge work which is routine methodological work and work that is based on fact. Computers are not necessarily cheaper, but they are faster, they don't make mistakes and it is easy to upscale the amount of work done by computers.

Will man be needed in the workplace? Of course! In the near future, computers will not be able to be creative, will not be able to form relationships and will only be able to perform tasks that are highly structured. This means that we have to teach our learners to enhance their creative intelligence, to enhance their communication skills or relationship intelligence and to be prepared for unstructured dexterity.

People who are involved in routine or knowledge work are more likely to be replaced by computers and this has been seen all over the world. This is referred to as the "hollowing" of the workforce and it is going to happen more speedily. So, what are the skills we need to know? According to Professor Armstrong, the following skills and attitudes are not negotiable:

1. **Learn how to learn**. We have to encourage our learners to be lifelong learners. School does not finish when you write matric. Learning does not end when you finish your university degree. As teachers we have to teach our learners to embrace the culture of lifelong learning and to take responsibility for their own learning.

2. **Old-fashioned virtues** of team work, collaboration, being a great communicator, persistence, commitment, a good work ethic and creativity, are more relevant than ever in the new age of learning, as are the development of reflection skills to assess the way in which they learn.

3. **Knowledge**: It is critical that the STEAM skills are enhanced because they will be required more than ever. Science, technology, art, engineering and mathematics remain central to the new era. Although these are very difficult to study for some people, these skills remain at the centre of our future world of work.

4. **Diversification** is also a critical skill. We cannot focus on one skill alone. We should be able to apply this skill in other situations as well.

5. More important than anything, however, is the **ability to stick to what we are doing**, to focus and to put our minds to whatever we want to do and to really excel. According to Malcolm Gladwell, we need to practise a skill for 10 000 hours to become the best in the world.

6. Do **meaningful work**. This could mean different things to different people, but even though we will be frustrated at times, be poorly paid, and face risks, if we see our jobs as giving our own lives meaning and purpose, we will excel, be motivated and get more job satisfaction than being in a job with an excellent salary but which doesn't give us a feeling of purpose.

7. **Understand future demand** and research jobs that are less likely to be performed by machines in the short to medium future. These are jobs that require creativity or creative intelligence, social, interpersonal or relational intelligence and jobs that require manual dexterity. Jobs in these three skills are less vulnerable in the short to middle term future. Another important skill which a robot or artificial intelligence cannot truly equal, is humanity. Be human. Everything we do demands the human touch. We will sell better if we see people as human beings. We cannot be successful unless we engage not only the minds of people, but their hearts as well. Social skills remain core skills. People make decisions based on what they feel rather than what they know.

4.2   Charles Fadl from the Centre for Curriculum Redesign (2015)
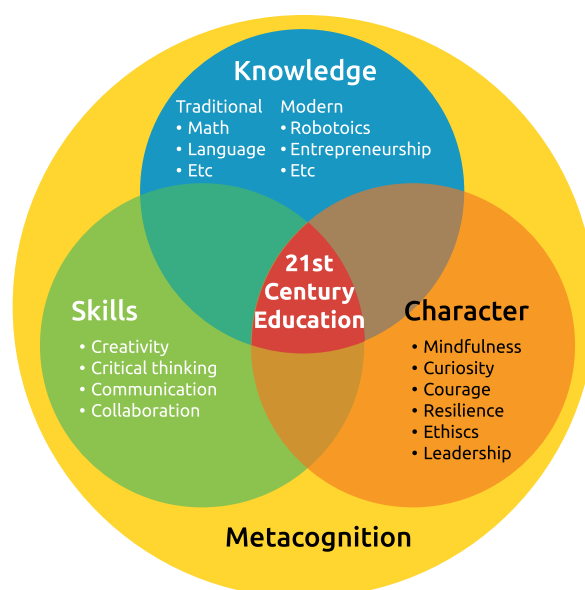
© Center for Curriculum Redesign

Fadl presented a white paper on redesigning the curriculum for a 21st century education. Much of what he says is in agreement with Professor Brian Armstrong of Wits. He just organises the information differently. In their curriculum, the Centre for Curriculum Redesign divides the groups of engagements of successful learners in the new age as follows:

1. **Knowledge:** This would be traditional knowledge, for example maths and physics, but also modern subjects like entrepreneurship and sustainability, etc.

2. **Skills** are how we apply what we know, the so-called four Cs of 21st century education: creativity, critical thinking, communication and collaboration.

3. Interestingly, "**character**" is defined by the Centre for Curriculum Redesign as how we behave and engage in the world. This is also considered crucial. Characteristics like mindfulness, caring, curiosity, bravery, the ability to lead and to display ethical values and resilience and commitment: these form the character we need in the 21st century.

4. Over and above knowledge, skills and character, we also have **meta learning,** how we reflect and adapt, and think about our thinking. Without this metacognitive reflection, we cannot really move to a new level of understanding.

4.3 Critical and developmental outcomes of the National Curriculum Statement

Why does this all sound so familiar? South African teachers will remember that in 1997 when the outcomes-based national curriculum statement was implemented, we were trained in the critical and developmental outcomes. These are more relevant than ever as the critical and developmental outcomes are a good start in preparing our learners for 21st century skills. Notice the similarities with Professor Richardson's views and Charles Fadl's Curriculum:

These are the critical outcomes that were adopted by SAQA:

1. Identify and solve problems in which responses demonstrate that responsible decisions using critical and creative thinking have been made.

2. Work effectively with others as a member of a team, group, organisation and community.

3. Organise and manage oneself and one's activities responsibly and effectively.

4. Collect, analyse, organise and critically evaluate information.

5. Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation.

6. Use science and technology effectively and critically, showing responsibility towards the environment and health of others.

7. Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

SAQA also identified five developmental outcomes which were defined as follows:

In order to contribute to the full personal development of each learner and the social and economic development of the society at large, it must be the intention underlying any programme of learning to make an individual aware of the importance of:

1. Reflecting on and exploring a variety of strategies to learn more effectively;

2. Participating as responsible citizens in the life of local, national and global communities;

3. Being culturally and aesthetically sensitive across a range of social contexts;

4. Exploring education and career opportunities;

5. Developing entrepreneurial opportunities.

How do we prepare learners for the requirements of this changing world? How do we, at the same time, deal with the issues facing South African schools and the broader society? Progressive and pedagogies like the Experiential Learning Cycle and Project-based Learning are an excellent strategy to deal with change on a mammoth scale.

ADDENDUM 5

WHO ELSE IS DOING IT?

5 years of research was conducted into different approaches in various countries around the world by the HRDC task team. These are available.

Some countries who have successful utilised PBL and Constructivist Learning in order to bring their youth prepared into to the 21st Century and all that is offers and challenges:

Singapore:

SPRING Singapore is an agency under the Ministry of Trade and Industry responsible for helping Singapore enterprises grow and building trust in Singapore products and services. One of the programmes managed by this agency has been the Young Entrepreneurs Scheme for Schools (YES! Schools). YES! Schools provides schools with grants of up to S$100,000 to put in place a comprehensive structured entrepreneurship learning programme for their students. Schools on all levels including polytechnics, institutes of technical education, junior colleges, centralised institutes and secondary schools may apply for funding by submitting project ideas, which get evaluated according to several criteria. Primary schools can also apply for funding but are less likely to receive. Projects from primary schools may be funded on a selective basis.

While YES! Schools has had some impact in entrepreneurial education in Singapore, there was limited industry exposure and inconsistency with regard to implementation. Therefore, at the start of 2013, a new programme was launched, known as ACE, which will be piloted at nine secondary schools across the country, which had either a YES! Schools programme running or another entrepreneurial programme in place.

The aim of the new programme is to combine theory with mentorship and hands-on experience. Internships will be a big part of it too. Other drivers include the value of taking risk, of trying something new, of believing in one's passion and learning to embrace failure. Every school involved will come under an 'Entrepreneur-Adopt-a-School' initiative, which attaches any number of entrepreneurs to an educational institution54.

http://www.spring.gov.sg/Entrepreneurship/FSP/Pages/young-entrepreneurs-scheme-schools.aspx#.UWJ9eBfviSo
http://sgentrepreneurs.com/2012/11/09/singapores-ace-launches-sgd15m-

Botswana

Botswana developed "Vision 2016"55, which encapsulates a long-term vision for the year 2016 when Botswana will have been independent for fifty years. In this vision, it is stated that "Batswana (the people of Botswana) will need to be educated to understand better the importance of entrepreneurial skills". To achieve this objective, "entrepreneurship and business skills will be an integral part of schooling."

To achieve this, the government, although committed to providing universal access to junior secondary education, focussed their efforts on enhancing the employability and the capacity for further training of junior secondary leavers. The goals and content of the programme were revised to emphasize the following in terms of pre-vocational preparation:
- Vocational orientation of academic subjects
- Increasing the number of practical subjects offered
- Emphasizing foundation skills applicable to work situations, such as problem solving, self-presentation, team-work and computing
- Relating the curriculum to the world of work by offering both curricular and co-curricular activities that espouse the process and organization of production and the demands of working life
- Career guidance and counselling

Infuse and integrate

The approach taken was to infuse and integrate issues such as Environmental Education, Population Family Life Education, HIV/AIDS and Entrepreneurship Education into the teaching and learning material. Although limited emphasis to the need to prepare young people for the demands of self-employment, the language used contains the so-called 'entrepreneurial char-acteristics', which consist of:

- creativity and imagination
- independence in thought and action
- ability to take the initiative
- self-confidence and optimism
- ability to accept responsibility
- social skills and persuasiveness
- ability to cope with uncertainty
- ability to evaluate and take risks
- flexibility
- determination to succeed
- ability to take decisions
- ability to solve problems
- ability to work hard

Infusion suggests that the content of entrepreneurial education (EE) is incorporated into the curriculum to permeate and alter it in a way that affects all learners. EE content is therefore spread across as many subjects as possible to provide learners with frequent EE encounters. Infusion does not require a strong connection between subjects, as in the case of integration, and the content of the main subject does not alter. For example, creative writing in an English lesson about 'Roles people play in enterprises' would represent an attempt to infuse EE into the English lesson. In infusion, the objectives of EE are thrown into the contents of different sub-jects, together with instructional materials as and when necessary.

entrepreneurship-education-program-for- schools/ Botswana: http://www.vision2016.co.bw

Norway:

Since 2004 Norway has had a strategic plan for implementing entrepreneurship into the educa-tion system on all levels, from primary school to university and college, including teacher train-ing. The plan was titled "See opportunities and make them work"57 and was prepared as a col-laboration between the Ministry of Education and Research, the Ministry of Trade and Industry and the Ministry of Local Government and Regional Development.

"The primary goal of the strategy for entrepreneurship in education and training is to strength-en the individual's ability to see and exploit opportunities in an economic, social and cultural context. Thus, the way will be paved for future entrepreneurship, innovation and reorientation throughout Norway."

The educational system needs to stimulate the necessary attitudes and behaviours in children and young people that will promote the capacity for collaboration, innovation and creativity. The aim is to develop specific personal qualities and attitudes that will increase the probability of a person seeing an opportunity and doing something about it. These qualities then for the basis for the knowledge and skills which will be acquired later to develop the new idea into a practical, growing enterprise.

To ensure successful promotion of entrepreneurship in education, there are four factors that need to be emphasised:

- Entrepreneurship as an integrated part of education and training: Entrepreneurship is defined as an objective in education, so it must be included in the instruction strategy. This is a matter of attitudes and qualities in general.

- Collaboration with the local community: Training in entrepreneurship requires a close collaboration between schools and the local business and social sector. Therefore, there needs to be a conscious effort made towards building relationships between the school and the various role players in the local community.
- Teachers' competence: Teachers are important role models. A positive attitude among young people in schools toward entrepreneurship, innovation and reorientation requires that teachers have knowledge of this. It is therefore important to focus on entrepreneurship in teacher training, and provide courses in competence development to those teachers that are already working.
- The attitudes of school-owners and school managers: School owners must follow up the focus on entrepreneurship in curricula and management documents, and build competence and insight among school managers. It is important that educational institutions are given legitimacy and motivation to work on entrepreneurship.

http://planipolis.iiep.unesco.org/upload/Norway/Norway%20See_the_opportunities_and_make_them_work_2004- 2008.pdf Norway Entrepreneurship in Education and Training – from compulsory school to higher education 2009 – 2014, Action plan http://www.regjeringen.no/upload/KD/Vedlegg/Brev/Action%20Plan%20for%20Entrepreneurship%20in%20Education%20 and%20Training%202009.pdf

USA:

Entrepreneurship education efforts exist at all levels of education across the USA. Few communities have embraced entrepreneurship education as an official and integrated part of their educational system. Only nine states have formal legislation that promotes entrepreneurship education at the K-12 level.

Entrepreneurship education programmes also, often fall outside of school districts formal curriculum, and thus this field has grown slowly. Successful programmes are in place across the USA yet only small pockets of excellence are experienced. For some examples of excellence, refer to section 0 below.

Education in the U.S.A. is the responsibility of each state and the local school boards. Thus, each state has put in place its own standards for entrepreneurial education. Starting in 2000 the Consortium for Entrepreneurship Education (CEE) organised an annual Think Tank of entrepreneurship education leadership organisations to create a unified approach to building the field of entrepreneurship education. One development was agreeing on common criteria for entrepreneurship education programmes. These standards are summarised in a brochure titled "National Standards of Practice for Entrepreneurship Education"59.

Entrepreneurial education needs to be seen as a life-long learning process. The lifelong learning process proceeds through at least five distinct stages of development. It assumes that everyone should have opportunities to learn at the beginning stages. At later stages, resources are targeted to those who choose to become entrepreneurs. Each of the following five stages may be taught with activities that are infused in other classes or as a separate course.

Stage 1 - BASICS: In primary grades, junior high and high school, students should experience various facets of business ownership. At this first stage, students learn the basics of the economy, career opportunities that result, and the need to master basic skills to be successful in a free market economy. Motivation to learn and a sense of individual opportunity are the special outcomes at this stage.

Stage 2 - COMPETENCY AWARENESS: The students learn to speak the language of business, and see problems from the business owner's point of view. This is particularly needed in career and technical education. The emphasis is on beginning competencies that may be taught as an entire entrepreneurship class or included as part of other courses related to entrepreneurship. For example, cash flow problems could be used in a math class or sales demonstrations could be part of a communications class.

Stage 3 - CREATIVE APPLICATIONS: At this stage, students explore business ideas and business planning. Although it is still only an educational experience, students gain a greater depth and breadth of knowledge than at previous stages. This stage encourages students to create a unique business idea and to carry the decision-making process through a complete

business plan. The best programmes enable students to experience the operation of a business as well. This stage may take place in advanced high school career and technical programs, two-year colleges, and at some colleges and universities. Students learn how it might be possible to become an entrepreneur and to practice the processes of business.

Stage 4 - STARTUP: After adults have gained job experience and/or further education, many need special assistance in putting a business idea together. Community education programmes are widely available in the career and technical programmes, community-based assistance pro-grammes, community colleges, 4-year colleges and universities to provide startup help. The U.S. Small Business Administration sponsors many of these training programmes.

Stage 5 - GROWTH: As firms mature, business challenges remain. Often business owners do not seek help until it is almost too late. A series of continuing seminars or support groups can help the entrepreneur recognize potential problems and deal with them in time.

The strong support for entrepreneurship education is justified in that entrepreneurship educa-tion is not just about teaching someone to run a business; it is also about encouraging creative thinking and promoting a strong sense of self-worth and accountability.

Furthermore, the CEE listed the following core outcomes created via entrepreneurship education:
• The ability to recognize opportunities in one's life;
• The ability to pursue such opportunities by generating new ideas and marshalling needed resources;
• The ability to create and operate a new venture; and
• The ability to think in a creative and critical manner

Examples of entrepreneurial education excellence:
• AllBrainTerrainProject http://www.allterrainbrain.org/
• NFTE(NetworkforTeachingEntrepreneurship) http://www.nfte.com/
• CEERoadmapforEntrepreneurialEducation http://www.entre-ed.org/roadmap/

http://www.entre-ed.org/_what/stds-prac-brochure.pdf Entrepreneurship Everywhere: The Case for Entrepreneurship Education by the Consortium for Entrepreneurship Education http://www.entre-ed.org/_entre/whitepaperfinal.pdf

All Brain Terrain Project http://www.allterrainbrain.org/

NFTE (Network for Teaching Entrepreneurship) http://www.nfte.com/

CEE Roadmap for Entrepreneurial Education http://www.entre-ed.org/roadmap/

Kenya:

http://www.ilo.org/public/english/region/eurpro/moscow/areas/kab.htm

Kenya: www.knowaboutbusiness.org

Kenya uses the Know About Business (KAB) programme, produced by the International Labour Organisation (ILO), initially developed and piloted in Kenya in the late 1980's and early 1990s. Since then, the programme has been developed, tested and adapted into 20 languages and im-plemented in over 50 countries around the world.

The programme's aim is to prepare youth for the transition from school to work by imparting entrepreneurial knowledge and skills that will prepare them to work productively in enterprises; to prepare students to start their own businesses in the future; establish an entrepreneurial and enterprising mind-set and attitude that can be applied in all aspects of one's life, including per-sonal and professional arenas.

The specific objectives of the KAB initiative are:
• Developing positive attitudes towards sustainable enterprises and self-employment among the population, by targeting youth and stakeholders for enterprise development

- Creating awareness about entrepreneurship as a career option for young people
- Providing knowledge and practice of the desirable attributes of, and specific challenges in starting and operating a sustainable enterprise
- Facilitating the school to work transition, resulting in a better understanding of the functions and operations of sustainable enterprises

Denmark

http://www.ffe-ye.dk/media/232417/introduction_to_from_abc_to_phd_2012.pdf

The Danish government sees the education system as a tool to stimulate the ability of students to innovate, see opportunities and convert ideas into value, in other words to be "entrepreneurial". To ensure this happens, the Partnership for Education in Entrepreneurship was established as a joint effort of four ministries. The four ministries involved are the Ministry of Science, Innovation and Higher Education, Ministry of Culture, Ministry of Children and Education and the Ministry of Business and Growth.

The Danish Foundation for Entrepreneurship - Young Enterprise (FFE-YE) was established in 2010 with the objective of ensuring that more students on every education level are introduced to - and participate in - entrepreneurship education, thus ensuring the integration of entrepreneurship in the Danish education system. The FFE-YE covers all education levels to ensure the progression of entrepreneurship education from primary school education to higher education, i.e. more than one million students and their educators.

The focus of the FFE-YE is to increase the number of competent pupils and students in Denmark who hopefully end up starting their own business or choose to help already established businesses to develop, and discover the potential in innovative projects.

The most recent mapping carried out by the FFE-YE shows that 10 percent of all pupils and students in Denmark received entrepreneurship education in the school year 2010/2011

63 pupils who participated in entrepreneurship education are happier about school, have higher ambitions for their further education and career, and feel they can contribute to society.

ADDENDUM 6

SACE CPTD POINTS

By attending this course, you are eligible to receive SACE CPTD Points, as this 3-day workshop fits into the category, Type 1 – self-initiated workshop. Although the DBE and the Provincial Departments of Education are integral to the training, the training will be led by three NGO lead trainers and thus, the following excerpt from the SACE Points Schedule appropriately explains that you will earn 15 SACE CPTD points, if you attend the workshop and reflect on each day in your PDP:

TYPE 1 – SELF-INITIATED

p. 8 and 9 of SACE Points Schedule

Attending Educational Conferences / Workshop Sessions / Breakfast or Dinner Sessions (Note! You will earn points every time you participate in a different workshop, conference, or breakfast/dinner session.

2 full days and more (15 points)

(evidence of participation and reflections in the PDP is required)

e.g. day one from 09h00 to 17h00, day two from 08h30 to 16h30, day three 08h30 to at least 13h00

Please remember that, as the activity is self-initiated, you yourself are responsible for uploading your points. Keep the invitation to the workshop and your 4 days of reflection in your PDP as evidence of this activity.

Here are some points that could be part of your 4 daily reflection exercises:

➢ Goals of the project?
➢ What new information am I acquiring?
➢ How am I dealing with challenges?
➢ What am I learning about myself?
➢ How will I do things differently as a result of this new learning?
➢ How will this learning impact the learners in my class?
➢ How has my mind-set changed?

This course will be endorsed by SACE in the near future after which it will divert to a Type 3 course.

ADDENDUM 7

Scented Candle Herb Plants – Learn About Using Plants in Candles

Do you enjoy the fragrance of air fresheners or commercially manufactured scented candles, but worry the chemicals in these products may be affecting your health and that of your loved ones? The good news is you can have these flower fresh scents and preserve your well-being. Making homemade scented candles can be a fun and easy DIY project. You can choose safe and natural waxes, like *beeswax* or *soy wax*, for your candle. Herb plants from your own garden can provide the fragrance. You can also create beautiful works of art by using plants in candles for their decorative value.

Use dried herbs for candles
When using herbs for candle making, start by thoroughly drying the plant material to prevent mildew. To scent a candle, herb plants can be finely chopped or crushed to help release their fragrance. Some candle makers prefer to steep the chopped herbs in the hot wax for a period of time to allow the fragrance to be incorporated into the wax. The wax is then strained before making the candle.

An alternate method is to add the chopped herbs to the candle as it is poured. The powdery herbs add a design element to the candle, especially if the herbal mix contains colorful flower petals. Adding sprigs of leaves and small flower stems around the edge of the candle while it's being poured is another decorative way for using plants in candles. This method works best for wide, clear candle jars. Keeping these larger pieces far away from the wick will prevent them from catching fire or sparking.

Best Herbs for Candle Making
By now, you may be wondering what herbs are best for candles? Aromatic herbs, like those used in aromatherapy, are popular as are herbs that evoke emotion. Flowers bring a gentle fragrance inside the home and many types of leaves can be used to decorate the outside of the candle.

Consider the following candle herb plants:

Lavender – One of the most popular choices of dried herbs for candles, lavender elicits calmness and reduces anxiety. Use crushed dried lavender to scent candles and dry flower buds for decoration.

Mint – Use homemade peppermint scented candles for a holiday table centre-piece or give them as Christmas gifts.
Burn *spearmint* scented candles year round for that clean, fresh minty fragrance.

Rosemary – Like lavender, rosemary can be used for both fragrance and as a design element in candles. Rosemary can be grown in a container or in the garden as a perennial shrub. Harvest the leaves before the plant blooms for the richest aroma.

Chamomile – With its daisy-like flower, chamomile imparts both aroma and decorative value to candle making. Harvest chamomile flowers midday when they are fully open, but after the dew has dried.

Lemon Verbena – This lemon-scented perennial shrub is so aromatic it releases a fresh citrus scent every time its leaves are touched. Harvest and dry lemon verbena leaves individually on screens. Dried leaves can be stored in zippered bags. Burning your homemade scented candles will release their herbal aroma and are a wonderful alternative to chemical air fresheners. To preserve their fragrance longer, try storing your herbal candles in an airtight container.

ADDENDUM 8

How to Make an Eco-Friendly Solid Homemade Dish Soap Bar

Author Kris Bordessa

Prep Time 15 minutes
Cook Time 45 minutes
Curing time 14 days

*Servings 5 bowls

Changing up the way you wash dishes by using a solid dish soap bar can substantially reduce the number of plastic bottles you use.

Ingredients
4.45 ounces (131.602ml) caustic soda , (*sodium hydroxide*)
9.96 ounces (0.2945 litre) water
14 ounces beef tallow
14 ounces coconut oil
1-2 tablespoons essential oil lavender or citrus are great

Instructions
·   Measure the water into a non-reactive heatproof container.
·   Carefully pour the lye into the water. (Never pour water into lye.) Stir carefully. ·
·   Combining the water and lye will create a chemical reaction and the water will become VERY hot.

·   Set the lye mixture aside. While the lye cools, heat coconut oil and tallow to about 90 to 100°F. The tallow will take longer to melt than the coconut oil. If you achieve the desired temperature before it's completely melted, just turn off the heat and let the mixture sit for a few minutes. The residual heat will melt the tallow all the way.

MELTING OILS IN A POT
Pour the lye solution into the warm coconut oil and stir by hand briefly. (Note: The lye and oils should both be about 100°F when you combine them; you may need to allow the lye mixture to cool a bit.)

     Use an immersion blender to bring the soap to trace.

MAKING SOAP
Incorporate essential oils.
Pour soap into shallow bowls and allow to cure for 2 weeks before using.
Pouring homemade dish soap into a bowl
Using this solid dish soap
Wet sponge and rub onto soap until suds form.
Use sudsy sponge so thoroughly wash dirty dishes.

Soap bubbles on a wooden utensil

Recipe Notes
·   Always wear safety goggles and long sleeves when making soap.
·   Never pour water into lye (pour lye into water).
·   Using lavender, orange, or lemon essential oils gives this homemade cleaner a light
         fragrance.

To make a vegan soap block
Follow the instructions above using the following measurements:
28 ounces (828,059ml) coconut oil
11.15 ounces (3,25ml) water
4.98 ounces (118ml) lye

Liquid dish soap does a fine job of cleaning dishes, but I cringe every time I have to buy a plastic bottle full of soap. I had an epiphany about homemade dish soap several months ago, and I've been experimenting. If — like me — you're trying to cut back on single-use plastic, this solid dish soap might be just the solution you've been looking for.

ADDENDUM 9

Transform Recycled Jars into Pretty Decor, Candle Holders, or Gift Packaging

Stop! Don't send that glass jar to the recycle bin quite yet. Decorating glass jars and bottles is a great way to upcycle materials. Instead, doll them up, pop in a tea light, and add a bit of shine to your home. Use these "project-made" candle holders to brighten the household.

These decorative jars are great for holiday decor and packaging food gifts, too. Or make eight short jars with one taller one to use the set as a menorah. This dotting technique is super forgiving and very easy for kids to do.

Fill a decorated jar with some of this delicious homemade *creme de cacao* for a gift.
Painting jars and bottles

You can use the little jars of 3-D paint for this project. Those are probably easier for kids to use. Or you can use a small paint brush dipped in glass paint. Dip the paintbrush in enough paint that there's a bit of excess on the tip of the brush. Carefully dab the end of the brush onto the jar or bottle, transferring a dot of paint. In either case, it's a good idea to have a scrap of paper to practice on first. Once you get the dotting technique down, start stippling your decorative jars and bottles!

It will be easier to see the area on which you're working if you roll up a piece of white paper and insert it in the jar.

DIY candle holders
To make DIY candle holders, start with glass jars. (This isn't a good way to use plastic bottles as the plastic can burn and it will smell nasty if it gets too warm.) Choose jars that have an opening large enough for a votive candle (*votive Candles require a Votive Candle Holder to maximize the burn time. The Votive Candle Holder will help pool the wax and allow you to get the full burn time*) or tea light to fit. A jar taller than the candle will work wonderfully, or find a jar that is just tall enough that the wick will align with the top of the jar. The jar you see here with a lit candle is an upcycled cosmetic jar that one of my guests left behind. It has a frosted glass surface.

Pretty gift packaging
If you make homemade gifts, why not take it a step further and DIY the gift packaging? Fill decorative jars and bottles with homemade *kahlua* or *creme de cacao*. Fill a small jar with homemade taco seasoning. Or fill a larger decorated jar with pancake mix.

Make a *menorah*
This is a fun project for several family members to make together for Hanukkah. Select eight short glass jars and one taller glass jar. Choose just three or four colors of paint. That way, these DIY candle holders will look great together no matter how many people contribute their original designs.

Ingredients
- recycled jars or bottles glass or plastic
- paint see notes
- white paper
- Instructions
- Soak jars in warm soapy water to remove labels; dry.

Slip a rolled up piece of white paper inside the jar. This will make it easier to see what you're working on.

Add a simple shape – such as a flower, circle, or star – with one color using dots of paint.

Repeat the shape in several places on the jar. Another easy way to start is with a line around or across the jar.

Outline the shapes in a different colour with more dots. Continue adding dots, either outlining the original shape or creating new patterns until the entire jar is covered. You may need to take a break to allow the paint to dry as you move around the jar.

Once complete, put a votive candle or tea light in each jar or fill with food gift.

Recipe Notes
Tip: By sticking with just three or four colors, your DIY candle holders will look great together no matter how many family members contribute their original designs. This is especially good if you're making a menorah that will be displayed together.

You can use the little jars of 3-D paint for this project. Those are probably easier for kids to use. Or you can use a small paint brush dipped in glass paint. Dip the paintbrush in enough paint that there's a bit of excess on the tip of the brush. Carefully dab the end of the brush onto the jar or bottle, transferring a dot of paint.

It's a good idea to use a scrap of paper to practice on first.

Allow enough time for dots to dry in between sections to avoid accidentally smearing the pain.

A Kid Can Run A Business

Happens all the time. And here's something that may be a shocker for you – your kid can probably run a business too. Now you may be saying, "Look, Mike. My kids are busy with school and sports. They're well taken care of, buddy. I'm not gonna burden them with the task of running a business in addition to everything else. As long as my kid gets into Cal Tech." Uh huh.

Well, think for a minute about the kinds of habits and skills one would have to cultivate in order to run a business. Take problem-solving skills, for example. Good businesses are birthed from good ideas – innovative ways to solve a problem in the market, whether that's providing refreshing drinks for thirsty travellers along Route 56, cleaning yards for busy two-income families or Smart Phone Demystification Services for empty-nesters. Business owners also have to plan, manage and monetize their time. They have to develop strategies and build relationships to help them get the best sources for their products and provide the best chance of generating positive word of mouth publicity. Business owners must maintain a sense of accountability. They have to produce quality goods and services consistently. No excuses. In order to sell, you need to communicate a certain level of confidence in yourself and your product. So we have problem-solving, planning and management, strategic thinking, relationship management, accountability, communication skills, self-confidence. A kid with that skill set can write her own ticket in life.

HERE ARE A FEW BUSINESS IDEAS FOR YOUNG ENTREPRENEURS:

1 Computer Repair Service
If you've got a young tech genius in your midst, a small computer repair service is simple as pie. Way back in 2010, 81% of households already had either a laptop, desktop or handheld computer. I can only imagine it is way higher now. So if your child seems to have a knack for all things tech, she may consider repairing computers for extra income. There's flexibility in providing computer repair services these days. You can help her to expand her business by adding a computer shop that refurbishes used computers for resell online. Have her work remotely to provide people with help troubleshooting computer problems. Or even go old school with it and make house calls.

2 Handmade Gifts

Young people with a creative streak and an eye for pretty little things can earn extra money making homemade gifts. What's a homemade gift? Just about anything qualifies. Quilts, tutus for the puppy, fresh-baked cookies, jarred vegan soup mixes, soaps. Handmade gifts are a great way to earn money during the holidays. Know what goes well with handmade gifts? Check out the book Creating Really Awesome Free Things, which when your kid sells them... won't be free.

3 Gift Wrapping Services

You know, some people simply have no gift wrapping talent. Then there are those who can wrap gifts so beautifully you hesitate to even tear the paper to get to the actual gift. In case you haven't noticed, gift wrapping is a marketable skill, nearly indispensable during the holiday season. We're not just talking foil paper and curly ribbons. Think about hand-painted wrapping paper or gift wrapping that expresses the purpose and theme of the gift itself.

4 Investments and Passive Income

Sometimes a savings bond just isn't cutting it. In those cases, if you can teach your kids the value of passive income, by all means, do so. Real estate in particular is one area wherein many parents have already invested their own money and time. Add the kids to the mix by cashing in their bonds and offering them equity in the property. Teach them how to manage the books, collect rent and order repairs. Prepare them for a future in ownership.

5 Pet Sitting Services

A constant concern for pet owners who travel for business or who are planning a vacation is having a person or organization on-hand to care for their pet while they are away. Kids are great with animals and can, for short periods of time, serve as a fantastic and loving caretaker for pets by providing regular walking, feeding and grooming services right from the travellers home. If you want to get really serious, check out books on pet sitting businesses.

6 Social Marketing

The world of internet marketing is about knowing what's hot and telling people about it. Who is better suited to do both than a young entrepreneur? Kids are social media mavens. They engage one another. They inspire older people. Get them behind a cause or product and they will naturally create content that extols the virtues of whatever project grabs them. Like a fish in water. Not only can they draw others to their cause, but they can show others how to get the same results by properly using social media and internet marketing. Both businesses can generate consistent income. Or baby-sitting for friends and family

7 Car Washing/related acts

We love our cars, don't we? We need them, rely on them so we pamper them. We wash them. We clean them. I've even seen (and patronized) car spas. The hand car wash is a service that will never fade away.

8 Cookie Monster

People LOVE cookies. And not just cookies, but cupcakes, zucchini bread, pound cakes and just about anything home-baked. When used as an income source, cookies and baked goods are easy to make, easy to transport and pretty easy to sell. Kids can learn to find the best quality ingredients at the cheapest price and come up with ways to streamline the production process so the business requires minimal time investment. Get a handful of good cookie recipes, some cute, inexpensive packaging (think cellophane, sandwich baggies and ribbons) and start churning out delicious treats that will help line your pockets.

9 Device Set Up

If you've ever accompanied a small kid to the Apple store, you have probably witnessed the magic of watching a small child intuitively master a sophisticated gadget while you sit trying to figure out how you landed on the ESPN page… and how to get off. It's almost as if they're born with product manuals already downloaded into their little heads. And that, my friends, is a marketable skill. If you know a kid who seems to be a master at setting things up and getting devices to work, they could easily earn extra money by offering such a service to busy professionals, empty-nesters and other folks who may be tech-challenged.

10 Fill a Need

The key to business is to find a need, fill it and monetize the service. Offer yard-cleaning services to people who don't have the time or desire to do work outdoors, or online consulting services to help first-time eBay users navigate the auction site with confidence. Offer to do the dishes for a busy single mom who is working full time and going to school full time. If you can meet a need, you can earn an income.

11 Jewellery Design

Kids who have an eye for fashion or a love for creative endeavours can find jewellery making a rewarding and profitable business. It doesn't have to be complex pieces with semi-precious stones. Wooden beads, painted glass and hemp bracelets are hot sellers. Designed pieces may be sold online or at local trade shows and church bazaars.

12 Artistry
In addition to jewellery and handcrafted soaps, young artists can sell a variety of creative pieces, from canvassed art work to hand-designed greeting cards. And don't limit thinking to B2C goods and services. Think B2B as well. Logo design, brochure layouts and web design are all great ways for young people to leverage their creativity.

13 Personnel Service
What if all the neighbourhood kids were grouped according to ability and will? The mastermind behind such an organization could earn a pretty penny scouting and contracting out various small jobs. The neighbourhood kids earn money doing quick jobs without having to go out and search for the work and the organizer earns a piece of the action.

14 Greeting Cards
Leverage the talents of several young people by letting them produce and sell hand-made greeting cards. Greeting cards generally employ several creative and technical skills – poetry, prose, visual art and layout. Whether one kid does it all or several kids work together to deliver the goods, a greeting card business in these days of e-cards, text and emails will be especially valuable around the holidays.

15 Poop Handler
Yes, you read that right. Families with pets will often have poop in their yards. A smart kid with a Pooper Scooper and a compost heap can help turn messy yards into hard-earned cash by servicing pet owners with yard cleaning services.

16 Corner Store
Whether it's a lemonade stand, fresh flowers, baked goods or snacks, the traditional 'lemonade stand business model' is proven to produce extra income so long as the products being vended are good enough to generate repeat business.
There's plenty of versatility and you can actually find pre-made lemonade stands online and at the local toy store.

17 Gift Baskets
Assembling and designing gift baskets are a great way for kids to express their creative side while sharpening their ability to identify what the market wants and finding innovative ways to provide. The contents of a gift basket are as varied as the people who order them. Whether a child sells pre-made baskets or accepts orders for custom baskets, the business comes with natural busy seasons (Easter, Mother's Day, Christmas) that coincide with school breaks. Bonus!

18 Upcycling
Teach kids social entrepreneurship by letting them either repurpose found items or sell them to someone like an artist or other re-purposing professional (computer repair, upholstery shop, antique shop) who can reuse or refurbish them. Another idea is to start a neighbourhood recycling centre that can be run on the weekends from a local park or right from the family garage.

19 Out with the Old

One thing about kids is they tend to grow quickly. Monetize that growth by selling off all used clothes, old bikes, toys and electronics that are no longer in use. Consider taking clothes to a consignment shop and selling old toys, electronics, furniture, etc. on craigslist. org or using online auction sites. As long as kids are growing and trends come and go, they will always have inventory to sell.

20 Use the Allowance as Seed Money

In teaching kids to develop an entrepreneurial mind-set, you can start by helping them to think of their allowance as seed money. All businesses need startup capital. Making it a habit to save some, spend some and invest some of their money is a great way to get them thinking of different ways to grow their income – whether through buying and selling on EBay, investing in high-yield stock or using the money to buy inventory and supplies for business endeavors.

21 Become an Online Personality

These days, we receive a significant portion of our daily information by blog. For kids who are social savvy and good communicators, maintaining a blog is a way to publish information, express individuality and even earn money by selling blog-related products and endorsing products that appeal to the blog's readership.
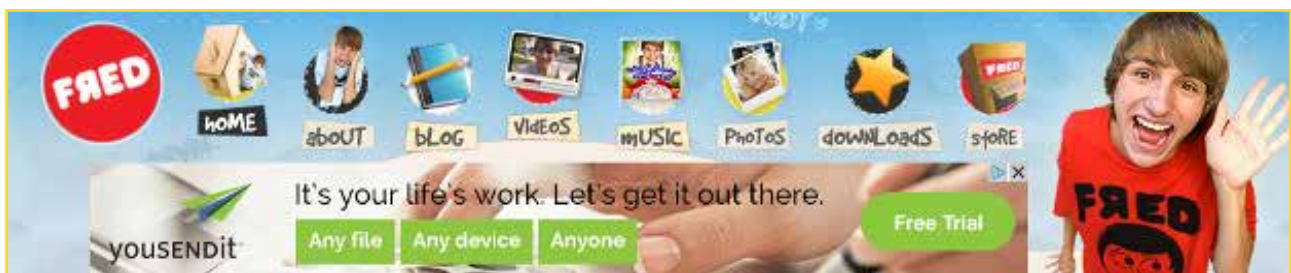
22 Writing Coach

IM speak has taken over the world. It's good to be fluent in both American Standard English and text-talk. Throw in a little slang (the Urban Dictionary folks were all over that one) and you've got a winner. Kids who have advanced written communication skills can provide guidance to peers to help them conquer those academic papers without the use of text-talk. If you don't know what IM is... you need a writing coach. (It means Instant Message).

23 Party Animal

Or planner, or clown, or musician, or juggler, or entertainer – whatever floats your boat. Older kids remember what it was like to be a younger kid and are usually in tune enough to still know what makes little kids laugh. Party planning and entertainment is a huge responsibility, but for the right imaginative kid, parties amount to fun work. Going into the party entertainment business can help teach kids accountability, market research, planning and time management plus earn them a nice fee for their services.

24 Candy Man
A quick trip to a discount wholesale club can turn any kid into a walking Sweet Shoppe. Let your kids test out there entrepreneurial legs by allowing them to sell snack-sized candies to their peers between classes or during recess at school. Be careful though. Some schools are very strict about such "enterprises." Be sure to check first.

25 Photography
For kids who love to be behind the camera, photography may be a great way to earn some extra money. Budding photographers can license their work online by setting up accounts with iStock, Getty Images, Flickr, Dreamstime and other photo-sharing platforms. Or, they can make prints of pictures and use them on greeting cards, posters or note cards along with an engaging story, poem or other bit of prose to go along with the image.

26 Pimp my Ride
In this case, a "ride" is probably going to be a skateboard, pair of rollerblades or dirt bike, but the [niche] market still exists. A child with artistic abilities can leverage that imagination in a number of ways. Marketing and charging a fee for providing everything from doodles to full-blown inked illustrations on skateboards, skates and other personal property.

27 Doggie Treats
If a kid doesn't want to go the traditional chocolate chip cookie route, have him consider a doggie treat business. There are plenty of recipes available right online for dog bones, doggie cookies and other treats, along with the supplies needed to make a doggie treat business profitable and professional.

28 Non-profit Work
Part of the beauty of childhood is its idealism. When you're young, you are fully convinced you can take on the whole world. Teach your child to tap into that fire by encouraging her to get involved in a cause that she is passionate about. Most non-profits are run based on donations. Kids can learn fund raising resource allocation by working closely with a nonprofit... or even by starting their own.

29 Problem Solving
For every problem there is a solution waiting to be found. The ability to identify problems and provide solutions to those problems is the core of marketability, whether in the job market or as an entrepreneur. Work with your kids to develop the habit of identifying problems. Together you can brainstorm ideas to find the best way to solve a problem. Once a solution is identified, figure out ways that solution can meet other needs and voids in a range of different markets. Good solutions are entrepreneurial opportunities.

30 Online Store
With a web presence and a Paypal account, just about anyone can open an online store. Kids can find easy ways to set up websites and use social media to market comic books, clothes, pet toys, doggie treats, or whatever else can be bought and sold.

31 How-To Videos
How-To videos are fun to watch and usually pretty engaging. When a child has a particular talent, hobby or passion, it's actually fun for them to show others how to do it. Build a website that focuses on a particular activity and provide the how-to video for free to subscribers who opt-in to mailing lists. By promoting similar quality products (affiliate products), kids can earn extra income by talking about and doing what they love and probably would spend their time doing anyway for free.

32 Garage Sales
We talked earlier about found items. There are probably enough items around the house that aren't being used to have regularly-scheduled weekend garage sales. Kids don't have to go far and they can acquire their inventory from deals they find at the local thrift store or even at other garage sales. As the kid gets the knack of running garage sales, he or she can extend their garage sale service to neighbors in the area and take a percentage of the total sales.

33 Invent Something
Whether it's a retractable stick to turn off the bedroom light at night after reading, or a contraption that keeps Lucky in the bathtub when it's time for his weekly bath, kids are masters of invention. They imagine and re-imagine all kinds of household items. Help them to cultivate that creativity. Later, when they stumble onto something good, it may be time to look at patenting, mass producing and selling the invention.

34 Out of the Mouths of Babes
Despite their relative inexperience with life, kids have a way of getting to the meat of an issue and offering their spin of simple wisdom that can both inspire and enrich life. Help them to turn their marvelous insights into cash by starting line of products – coffee mugs, t-shirts, note cards, etc. – that contain inspirational quotes.

35 The Art Collector
Kids can collect art work from siblings, friends, cousins and even a few pieces they created themselves. Frame every piece and sell them locally at art shows, festivals, open air markets, garage sales and even online. Pay the original artist for their hard work and they will be inspired to produce more great work to sell.

36 Clothing Swap
Have a well-connected teen rally the teen community and start a clothing swap where group members can come to exchange clothes with other members of the group. Charge a membership fee or a service fee per swapping session.

37 Cleaning Service
Getting kids – especially younger kids – to clean their rooms to the satisfaction of mom and dad can be a challenge. But the process tends to go a lot faster when they have help. For a small fee, your kid may want to consider providing other families with a cleaning service that essentially assists household members with straightening up the house. They can market full cleaning services or just to stand in as an extra hand to stand shoulder-to-shoulder with the customer to assist in cleaning. Either way can be quite profitable.

It's never too early to groom a child to be an entrepreneur. The new economy is ripe with new business owners and first-time freelancers who have discovered the best way to increase their income is to fill voids in the market by leveraging hidden talents. Kids have talents as well. Whether you're bringing up a toddler or [are being brought up by] a teenager, entrepreneurship is becoming an increasingly valuable skill to have.

ADDENDUM 10

Tower Gardens
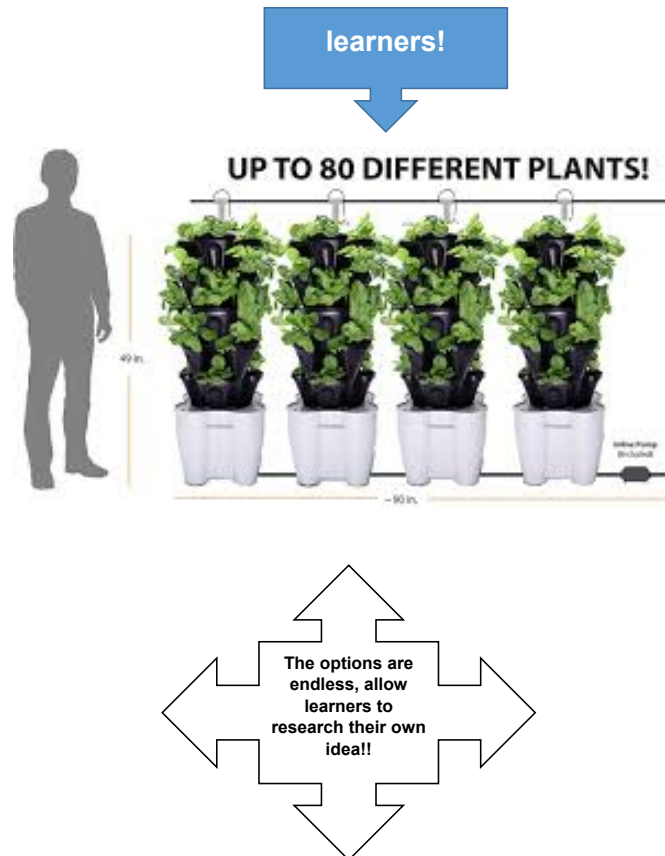
Let's do this...
HOW TO MAKE A TOWER GARDEN
An array of materials can be used when constructing a homemade garden tower, such as old planters, recycled containers, bits of fencing or scraps of PVC pipe. Anything that can create a vertical space for holding dirt and rooting plants can probably be used for building a tower garden. Additional supplies include landscape fabric or straw for retaining soil and rebar or pipe for support. Consider these simple DIY tower garden ideas to get your creative juices flowing:

Old tires – Stack them up and fill them with dirt. This very simple homemade garden tower is great for growing potatoes.

Chicken wire cylinder – Roll a length of chicken wire into a tube and secure it. Set the tube upright and stake it to the ground. Fill the tube with soil. Use straw to prevent the dirt from escaping through the chicken wire. Plant seed potatoes as you fill it or insert lettuce seedlings through the chicken wire.

Spiral wire tower – A double-walled, spiral-shaped frame is made using hardware cloth. The double-wall is filled with decorative gravel. Plants are grown in the interior of the spiral.

Flower pot tower – Choose several terra cotta or plastic flower pots of concentric sizes. Place the largest on a drip tray and fill it with potting soil. Tamp the soil in the centre of the pot, then place the next largest pot on the tamped soil. Continue the process until the smallest pot is on top. Plants are placed around the edges of each pot. Petunias and herbs make great plants for tower gardens of this type.

Staggered flower pot tower – This garden tower follows the same principle as above, except a length of rebar is used to secure pots set at an angle.

Cinder block stack – Create a unique design using the openings in the cinder block for plants. Secure the structure with a few pieces of rebar.

Pallet gardens – Stand pallets upright with the slats sitting horizontally. Landscape fabric can be nailed to the back of each pallet to retain the soil or several pallets can be connected to form a triangle or square. The space between the slats is great for growing lettuce, flowers or even patio tomatoes.

PVC towers – Drill holes in lengths of 4-inch (10 cm.) PVC pipe. Holes should be large enough to insert seedlings. Hang the tubes vertically or place them in five-gallon buckets using rocks to secure them.

HOW TO MAKE A BOTTLE TOWER GARDEN
With all the chemically-sprayed herbs that we sometimes purchase, one can help but wonder which products sold on the market are still being organically cultivated? How do we choose? The truth of the matter is, we'd be better of growing our own herbs, even our own fruits and vegetables. Sadly, not everyone has time, patience or sufficient garden space to do so.

If you're a fan of Jamie Oliver's cooking shows, you already know that he has a bunch of herbs and plants that he grows by himself, in his own kitchen and garden. Here's a crazy idea, why not try to grow them yourself? We can teach you how to create your own bottle tower garden with items you probably have lying around the house. Just as the name suggests it, this is a tower built out of recycled plastic bottles that's extra affordable to make, saves a lot of space and allows you to grow the herbs of your choice.

1. BENEFITS OF HAVING A BOTTLE TOWER GARDEN
Before we dive into the actual steps for making one of these, here are some reasons why this should be your next project:

It's a great way to recycle a bunch of old soda and water bottles.

Since the tower is built vertically, it will help you save a lot of space. This means that it's ideal for people who have small gardens or just don't want to use up too much space for growing herbs and flowers.

Aside from the seeds and soil needed to grow these plants, you most likely have every other item you need around the house, making this project not only useful but also affordable. It doesn't take a lot of time to complete, the project should be done in no time, except for the collection of the bottles.

You can always add more bottles with more soil to grow even more herbs and spices. That means that you can grow this little garden at any time.

The system works in such a way that you won't be wasting water to grow these plants and herbs (you'll discover more about that when we go over the steps).

As mentioned above, this project uses items that learners have lying around the house.

Here's a list of what you need:

·   *A generous number of 2-liter bottles, depending on how big you want your vertical garden to be. You should have at least 3-4 bottles for each tower and multiply that number depending on how many towers you want.*

·   *A sharp pair of scissors for poking holes in the plastic bottles. Could also be a nail or anything sharp and resistant.*

·   *A small incision knife or a box cutter, for cutting through plastic.*

·   *A small ruler, for a couple of measurements.*

·   *A marker, as you will need to but the bottles and poke them according to specific measurements.*

·   *Twine or wire or anything that's sturdy enough to hold the bottles into place on the support system where your garden will be placed.*

·   *Garden soil, compost or* **potting mix**.

·   **Seeds** *or seedling of several flowers, herbs or small plants that you want to grow.*

HOW IT'S MADE

·   There are 4 major steps to finishing this project, but each of them is divided into smaller ones.

·   You will need to create a base for the tower.

·   Move on to creating the actual tower levels.

·   Create the drip irrigation system and,

·   Last but not least, we will be planting the actual flowers or herbs or small vegetables that you want to grow.

STEP ONE

We begin by creating the base for the tower. The 2-liter plastic bottles you are going to use probably have their labels on them. Before you remove those labels (this is optional, but let's face it: your garden will look better if there are no soda labels showing off between your greens), make a cut below the end of that label. You need to make sure you preserve a small portion of the bottom curve inward. If you follow this instruction precisely, the bottles should later stack with ease. Remove the base of the bottle after cutting.

STEP TWO
Measure 7,62cm, or 7 to 8 cm, above the cap, on the opposite sides of the bottle (you can use a ruler and a marker to place the dots). Then, using a sharp pair of scissors, poke those 2 holes at the diameter of a BIC pen (or any other sharp object. These are the drainage holes for water.

STEP THREE
Now it's time to add the soil inside the bottle. You can opt for garden soil, **compost** or potting mix, whichever is at hand. Make sure you leave about one inch of space at the top of the bottle. Also, press the soil gently so that there are no air gaps between the layers of soil.

This is the final small step of creating the tower base. Identify the supporting structure where you want to place your bottle tower. It could be anything from a wired fence, to a wooden one or even a chain-link one.
Using twine or wire, tie the base of your tower to that structure, making sure it doesn't wobble, as we wouldn't want your soil-filled bottles to fall and make a mess.

STEP FOUR
This is the final small step of creating the tower base. Identify the supporting structure where you want to place your bottle tower. It could be anything from a wired fence, to a wooden one or even a chain-link one. Using twine or wire, tie the base of your tower to that structure, making sure it doesn't wobble, as we wouldn't want your soil-filled bottles to fall and make a mess.

STEP FIVE
Plastic bottle cut at the centre.

Now we move on to creating the tower levels. Take another plastic bottle and repeat the first step.

STEP SIX
Repeat step #3 and remember to press the soil gently as you add it inside the bottle and leave that one inch of space we talked about earlier.

STEP SEVEN
Depending on how tall you want your tower to be, repeat the steps 5 to 6, always making sure that you remove the cap after adding the soil and tying the bottle to the structure so that there are no loose ends.

Note: *You can add about 4-5 bottles stacked on top of each other to create 1 vertical tower, but that doesn't stop you from adding parallel towers. You will just have to repeat the steps from 1 to 7 if you want to create a really generous garden.*

STEP EIGHT
Now we move on to the creation of the irrigation system. Yes, you will need more plastic bottles. Take one and cut it in half. As you can tell, this bottle is shorter than the others, as it will become your watering funnel.

STEP NINE
Using a very sharp object (could be a solid pair of sharp scissors, a nail, a cutter or something similar), poke a 1 mm hole inside the cap of the watering bottle.

STEP TEN
Attach the cap of the funnel bottle. Then poke two holes in the sides. Now, place the funnel on top of the tower you previously created, making sure that it rests firmly on the soil of the supporting bottle beneath it.

STEP ELEVEN
Above the funnel, you can now place the watering bottle (the one with the hole in the cap). The order of the bottles (from top to bottom) should be watering bottle (with the hole in the cap), the funnel, tower body, tower body, tower body, tower base.

Note: *If the funnel and tower bottle don't have enough stability, you can tie them down just as you did with the soil bottles.*

STEP TWELVE
Here we begin the final phase of our DIY bottle tower: planting and growing. Using a box cutter or a very small incision knife, you will need to cut small squares into each soil bottle.

You can use a marker to draw a square on each bottle, facing forward, with each side measuring 1.5 to max 2 inches. Cut only 3 of the 4 square sides, leaving the bottom side of the square uncut.

STEP THIRTEEN
Fold down the small flap you just created and, using your finger, poke a hole into the soil. Now, place the seeds or seedlings of your choice in that small hole.

STEP FOURTEEN
You can now fill the top bottle with clean water, making sure you replenish the stock every few days.

STEP FIFTEEN
Wait patiently and the enjoy watching your vertical garden grow fresh produce for your future meals.

CONCLUSION

This simple gardening project is ideal for everyone who is either passionate about growing plants or is tired of purchasing everything from thyme to basil from the market. Don't let the 15 steps fool you: creating a vertical bottle garden is actually very simple and it can be done in a matter of hours. It takes up little garden space and you really need is a sturdy support system for all the soil bottles you want to have. Did you try this how to? How did it go? Share your experience with us by commenting below!

Small vegetable gardens are a challenge, but this tower garden can help you get the most out of your space! Make it from recycled PVC pipe and grow more than a dozen plants in a single square foot (*space available*).

It's easy to make using materials from a building supply store, or collecting from a building site, but if you know someone in the construction industry, you might be able to salvage what you need. The diameter (*thickness and size*) of pipe for this project is a bit flexible, which allows you to choose what works best for you.

A. WHAT DO YOU NEED
- PVC pipe – 6-to-8-inch diameter by 4 ft. long
- PVC pipe – 1½-to-2-inch diameter by 4 ft. long
- Cordless or electric drill
- 1-1/2 inch Hole saw for drill
- ¼ inch Drill bit
- Pencil
- Tape measure

B. FOR ASSEMBLING THE TOWER
- Potting soil
- 16 Pieces Recycled cardboard roughly 2-inch square
- 17 Seedlings of lettuce and mixed greens

C. INSTRUCTIONS
1. Mark four evenly spaced lines vertically down the large pipe. These will serve as guides for the holes you'll drill.

2. Measure 12 inches from one end and mark a line around the circumference of the pipe. For reference, mark this end of the pipe "DOWN" so you'll remember that this end should go down into the soil when assembling your salad tower.

3. Using the hole saw, drill one hole where a vertical line intersects with a horizontal line. Now drill a second hole directly opposite, again at the intersection of a vertical and horizontal line. (Mind you, these holes do not have to be perfectly aligned; just get them in the ballpark.)

4. Drill three more holes along the same vertical lines, leaving about 10 inches (25,4 cm)between holes. You now have two lines of four drilled holes.

5. Drill three holes on each of the remaining vertical lines, offsetting each new hole so that it's placed diagonally from those adjacent to it, making an alternating pattern.

6. To use in the garden: Use shovel to dig a 10-inch (25,4 cm) deep hole in the ground and bury the bottom end of the pipe almost to the first hole.

7. To use on a patio or balcony, drill several holes in the bottom of a 5-gallon (between 18 and 20 litre) bucket or large planter and fill halfway with gravel. Place the pipe on top of the gravel and add soil around the pipe, to the top of the container.

8. Drill about 30 randomly-placed *quarter-inch* holes in the 2-inch PVC.

9. Place small PVC pipe inside the larger PVC so that the top of the inner pipe is slightly higher than the outer pipe. (Add a bit of soil inside the 8-inch PVC to elevate the 2-inch pipe if necessary.) Once established, filling this inner pipe with water aids in getting moisture to the roots.

10. Fill the large pipe with potting soil up to the bottom of the lowest holes, keeping the inner pipe centred.

11. Fold a piece of cardboard into a V and set it inside the hole. Slide a seedling into each of the lowest holes, using the cardboard as a funnel of sorts. Gently push the piece of cardboard into the hole. This helps to prevent potting soil from escaping. Add more soil to reach the next set of holes. Lightly water seedlings in, to settle the soil. Continue in this manner until each hole is planted.

12. Add a few more plants in the top of the tower.

13. Water the tower slowly from the top as well as into the 2-inch pipe.

14. Harvest leafy greens as they mature.

Sustainable Development

Perhaps, you'd like to grow more produce for your family but space is limited. Maybe you're looking to add colorful floral planters to your patio but don't want to infringe on your outdoor living space. Building a tower garden is the solution. Tower gardens utilize vertical space as opposed to planting horizontally in traditional garden settings. They require some type of support structure, openings for plants and a watering/drainage system. DIY tower garden ideas are endless and creating your own unique homemade garden tower can be fun and easy. How to Make a Tower Garden An array of materials can be used when constructing a homemade garden tower, such as old planters, recycled containers, bits of fencing or scraps of PVC pipe. Anything that can create a vertical space for holding dirt and rooting plants can probably be used for building a tower garden. Additional supplies include landscape fabric or straw for retaining soil and rebar or pipe for support.

Read more at Gardening Know How: DIY Tower Garden Ideas: How To Make A Tower Garden https://www.gardeningknowhow.com/garden-how-to/projects/diy-tower-garden-ideas.htm

Old tires – Stack them up and fill them with dirt. This very simple homemade garden tower is great for growing potatoes. Chicken wire cylinder – Roll a length of chicken wire into a tube and secure it. Set the tube upright and stake it to the ground. Fill the tube with soil. Use straw to prevent the dirt from escaping through the chicken wire. Plant seed potatoes as you fill it or insert lettuce seedlings through the chicken wire. Spiral wire tower – A double-walled, spiral-shaped frame is made using hardware cloth. The double-wall is filled with decorative gravel. Plants are grown in the interior of the spiral.

Read more at Gardening Know How: DIY Tower Garden Ideas: How To Make A Tower Garden https://www.gardeningknowhow.com/garden-how-to/projects/diy-tower-garden-ideas.htm

A.   GROWING POTATOES
1.   Growing potatoes in your garden can be lots of fun**.** Read more at Gardening Know How: How To Grow Potatoes: When To Plant Potatoes   https://www.gardeningknowhow.com/edible/vegetables/potato/how-to-grow-potatoes-when-to-plant-potatoes.htm

2.   When to Plant Potatoes When growing potato plants, it is important to keep in mind that potatoes are cool weather vegetables. The best time when to plant potatoes is in early spring. Planting potatoes two to three weeks before your last frost date will produce the most satisfactory results.

3.   Read more at Gardening Know How: How To Grow Potatoes: When To Plant Potatoes https://www.gardeningknowhow.com/edible/vegetables/potato/how-to-grow-potatoes-when-to-plant-potatoes.htm

4.   Planting potatoes normally starts with a seed potato. Seed potatoes can be prepared for planting by either planting whole or cutting up the seed so that there are one or two buds or "eyes" on each piece.

5.   There are many ways used for planting potatoes:

STRAIGHT IN THE GROUND – Farming operations and large plantings of potatoes are normally planted this way. This method for growing potatoes means that seed potatoes are planted 1 inch under the soil. As the growing potato plants get larger, the soil is mounded up around the plants.

TIRES – Many gardeners have been growing potatoes in tires for years. Fill a tire with soil and plant your seed potatoes. As the growing potato plants get larger, stack additional tires on top of the original and fill those with soil.

STRAW – Growing potatoes in straw may seem unusual but it is very effective. Lay out a loose layer of straw and put the seed potatoes in the straw. When you see the growing potato plants, cover them with additional straw. Harvesting Potatoes Much like when to plant potatoes, the best time to harvest potatoes is when the weather is cool. Wait until the foliage on the plants has died back completely in the fall. Once the foliage is dead, dig the roots up. Your growing potatoes should be full sized and scattered through the soil. Once the potatoes have been dug up from the soil, allow them to air dry in a cool, dry place before storing them.

B.   HARVESTING POTATOES
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ADDENDUM 11

Diversity

WHAT IS DIVERSITY?
It's a huge world out there and it's full of weird and wonderful things. We may like to think that normality rules, but the truth is quite the opposite! In many ways this is good thing, as it keeps us interested and prevents boredom from setting in. Its wealth lies in our melting pot of cultures, customs, differences between each generation...

Our world will never cease to surprise us and we can start with the people around us. It may be the way they behave, dress, talk... The list is endless! And it's this eccentricity that brightens up our day - just check out the following snaps that are guaranteed to put a smile back on your face!

3 Words that Opened My Mind to a New Meaning of Diversity & Inclusion

Updated September 16, 2019. Cultural diversity is when population differences are well represented within a community. These include race, ethnicity, age, ability, language, nationality, socioeconomic status, gender, religion, or sexual orientation. The group is diverse if a wide variety of groups are represented.

A diverse staff, including differing genders, ages, cultures, capabilities and experiences, tends to stimulate creativity and innovation. Groups and teams benefit when they have access to different opinions. Successful organizations attract, retain and develop a broad range of employees for leadership roles.

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DIVERSITY IN A GROUP
Workplace diversity typically enables teams to use multiple perspectives to solve problems. A collaborative team, with varying backgrounds, experiences and knowledge, is usually able to find new ways of doing things to deliver innovative products and services. If you want to explore ways of promoting diversity at your small business, just ask your employees. Undoubtedly, they have a lot to share. Failure to engage your workforce and exploit diverse

opinions may cause you to miss opportunities for growth and expansion.

DIVERSITY AWARENESS
Diversity awareness, cultural sensitivity, inclusiveness and multiculturalism are buzzwords that employers use in referring to learning objectives for training that encourages employees' mutual respect based on their differences and their similarities. Use of the word "diversity" within the context of work came to be as a result of sociologist and management consultant Merlin Pope, a firm that began providing diversity training in the 1970s. Small businesses and large corporations alike have witnessed changes among their employees as a result of increasingly diverse applicant pools and the emergence of mandatory and voluntary affirmative action. Therefore, workplace training on how to develop interpersonal relationships based on mutual respect can possibly improve cohesiveness and collaboration throughout the workforce.

DIVERSITY IN THE WORKPLACE
Workplace diversity typically enables teams to use multiple perspectives to solve problems. A collaborative team, with varying backgrounds, experiences and knowledge, is usually able to find new ways of doing things to deliver innovative products and services. If you want to explore ways of promoting diversity at your small business, just ask your employees. Undoubtedly, they have a lot to share. Failure to engage your workforce and exploit diverse opinions may cause you to miss opportunities for growth and expansion.

Step 1
Know your audience. Scan your employee census to get an idea of your workforce composition and note the representation of diverse groups in your workplace. For example, determine whether you have employees that represent the four generations in today's workforce: Silent Generation, also known as Traditionalists, who are employees born 1945 and earlier; Baby Boomers, born 1946 to 1964; Generation X, born 1965 to 1980; and Generation Y or Millennials, born 1981 and later. Also, look at your workforce composition from the perspective of such diverse characteristics as race, sex, national origin, disability and veteran status.

Step 2
Convene small groups of employees or schedule training sessions by department. This enables better facilitation and exchange of ideas and feedback if you're teaching diversity within a large employer. Otherwise, for small businesses, an all-staff meeting may be sufficient for groups of 10 to 20 employees. The goal is to encourage participation from all participants by teaching manageable-size groups.

Step 3
Begin each training session with an explanation of why workplace diversity is important. Enumerate the ways cultural sensitivity and diversity awareness benefit organizations and give concrete examples. For example, if you're expanding into a global market, your company may fare well if its sales executives know how cultural differences affect business relationships. Describe scenarios about how multiple generations in the workplace foster creativity, such as Generation X and Millennial employees working collaboratively with Baby Boomer and Silent Generation employees in devising technology solutions to conventional work processes.

Step 4
Provide the foundation for diversity awareness by giving an overview of anti-discrimination laws, such as Title VII and the Americans with Disabilities Act of 1990. Explain the history of these laws and the role of the U.S. Equal Employment Opportunity Commission in enforcing them. Answer questions about Executive Order 11246, which mandates affirmative action for companies that provide goods and services to the federal government. For example, dismantle one of the major misconceptions about affirmative action: hiring quotas. Hiring quotas are unlawful; they are prohibited, according to the federal regulations for affirmative action.

Step 5
Elicit candid and honest, yet respectful feedback from employees. **Encourage two-way** discussions between the facilitator and employees, as well as employee-to-employee discussion. Entertain questions from employees and provide take-aways, such as summaries of laws that support equal opportunity in the workplace.

DIVERSITY IN THE CLASSROOM
What is diversity in the classroom?
Diversity is everything that makes people different from each other. This includes many different factors: race, ethnicity, gender, sexual orientation, socio-economic status, ability, age, religious belief, or political conviction.

Diversity can be defined as the sum of the ways that people are both alike and different. The dimensions of diversity include race, ethnicity, gender, sexual orientation, language, culture, religion, mental and physical ability, class, and immigration status. The field of education includes diverse professional job categories ranging from classroom teachers to education support professionals to higher education faculty to retired professionals. While diversity itself is not a value-laden term, the way that people react to diversity is driven by values, attitudes, beliefs, and so on. Full acceptance of diversity is a major principle of social justice.

The concept of diversity presents both extraordinary promise and daunting challenges for education employees. On the one hand, educators and students have more opportunities than ever to learn about different experiences, languages, and cultures, whether through classroom curriculum, the Internet, or a conversation with a peer or a neighbour. This learning enriches us and prepares us for life in our 21st century, global society.

On the other hand, the education community faces growing challenges related to diversity, such as the academic achievement gaps between students of diverse backgrounds; racial segregation and re-segregation in our schools; gender inequalities and sex discrimination; bullying and harassment of students who identify as gay, lesbian, bisexual or transgender; educating students with disabilities; staggering disparities in educational resources based on class or income; access to education for immigrants; respecting students of all religious backgrounds; and so forth. Institutional hurdles such as high-stakes testing and the lack of resources for "non-essential" subjects make addressing the issue of diversity even more challenging.

Here are some basic strategies for your exploration of diversity:
- Seize opportunities to learn about people of different backgrounds, cultures and experiences—whether through a book, a film, or a conversation
- Examine your own attitudes and beliefs about people who are different from you
- Foster discussion in your workplace about diversity
- Assess the diversity in your school and how students of different backgrounds are faring
- Pursue ways to create diversity awareness or to celebrate diversity in your school community.
- We hope that you will gain useful information, inspiration, and energy from this resource. Please don't hesitate to give us feedback.

ADDENDUM 12

The Power of Happiness

by Roger Martin

Roger Martin

Employees are the backbone of any organization, and as you might expect, studies show that *happy* employees are more motivated, productive and committed. While considerable research has explored the link between an organization's long-term financial success and motivated employees, much less has been said about what actually makes employees happy.

It's a deceptively simple notion: in order to have happy, satisfied and loyal customers, you must have happy, satisfied and loyal employees. We can readily conjure up images of uniformly happy employees, who are totally dedicated to their jobs and so highly productive that the firm's competitors are left trailing in its wake. **Southwest Airlines** and Canadian steelmaker **Dofasco** quickly come to mind. Southwest Chairman **Herb Kelleher** has said that he puts employees first, "because if you have happy employees, that will lead to happy customers," and with his track record, he should know. **Dofasco**'s, recently-retired CEO **John Mayberry**

jective in that the person in question can report whether or not he or she is happy, but an outside observer is not able to make that same judgement, because well-being is entirely *in the mind of the subject*.

The question of whether happy workers matter to firm performance has been asked for nearly a century. Recent work by the University of Nevada's **Tom Wright** and the University of Arizona's **Russell Cropanzano** makes the case that happy employees – defined broadly using the metrics of subjective well-being – demonstrate superior job performance – i.e., that happy employees are better employees. In addition, they suggest that happy employees are

Only slightly more optimistic findings came from a recent study by **David Sirota**, co-author of *The Enthusiastic Employee: How Companies Profit by Giving Workers What They Want*. In his study, employee job satisfaction actually starts out pretty high, but it declines significantly the longer a person works for their employer. Based on a survey of 1.2 million employees between 2001 and 2004, the study showed that employee job satisfaction (on a 100-point scale) averages out as follows:

- Employees with an average of six months with employer: 80
- Employees with one to five years working for employer: 69
- Employees with six to 10 years working for employer: 68

So it would seem that a large proportion of workers are fundamentally *unhappy* with their work life, and getting considerably less happy over time. Rather than reaping the rewards of the power of happiness, firms are suffering from employees with low levels of happiness, which is associated with being highly sensitive to perceived threats in their environment, being defensive and cautious with their co-workers, and less optimistic and confident overall. There is clearly some work to be done in generating employee happiness.

Nobody can tell a person that he or she is, or should be, happy. Happiness is an entirely subjective feeling of well-being.

has stated that "satisfied customers are a direct result of happy employees. People can make a phenomenal difference if you can tap into them." The result is a highly-committed workforce: Dofasco's annual turnover is less than one per cent.

What can organizations do to ensure happy employees? While the answer is by no means crystal clear, it is coming into focus thanks to research advances in the fields of subjective well-being and social justice. By combining findings from these two fields, we can see that it is possible for a firm to conduct itself in ways that unleash the power of happiness.

Why Happiness Matters

Happiness is a tricky concept in and of itself. University of Illinois Professor **Edward Diener**, a pioneering researcher on 'subjective well-being' (his term for happiness) points out that nobody can tell a person that he or she is, or should be, happy. Nor is there a set of circumstances that guarantees that the person experiencing them will be happy. Instead, happiness is an entirely *subjective* feeling of well-being experienced by the person, characterized by the presence of positive emotions and the absence of negative emotions. It is sub-

more sensitive to opportunities in the work environment, more outgoing and helpful to co-workers, and more optimistic and confident – all of which are positive features for the organization.

A recent study by Northwestern University's **Forum for People Performance Management and Measurement** broke ground by focusing on employees who do not have direct contact with customers. It nevertheless showed a direct relationship between how employees feel and customer attitudes, concluding that any company that wants to directly impact its bottom line can measure employee satisfaction and know that improvements to it will drive profitability.

So it's clear that happy employees *are* key to success, but are the majority of employees generally happy? Unfortunately, the answer is no. In a recent **Conference Board** survey of American workers, only *half* classified themselves as 'satisfied' with their jobs, down a worrisome 10 percentage points from a mere decade earlier. Two-fifths felt 'disconnected' from their employers; two-thirds did not feel motivated to drive their employer's goals; and one-quarter said they show up for work only 'in order to collect a pay cheque'.

What Generates Happiness?

Research into subjective well-being confirms that certain readily-expected features correlate positively with happiness. For instance, physical health generates happiness – although past a basic level of healthiness, *more* health doesn't generate *more* happiness. A sense of 'physical safety of person' generates happiness – although again, more of the same doesn't generate more happiness after a certain point.

Interestingly, wealth does generate happiness, but for many, only to a limited point. In fact, the aforementioned Conference Board study found that those earning more than $50,000 per year – generally considered a comfortable living – were only slightly happier than those making *less* than $15,000 per year – essentially living in poverty by North American standards. Once a person passes the point of being able to afford 'the normal cost of

everyday life', more wealth can increasingly be accompanied by less happiness, not more. And with high levels of wealth come increased complications and worries, including concerns about losing the level of wealth one once had.

This is not particularly encouraging news for firms: pay – the simplest tool available and the one most obviously in the firm's control – won't do the trick on its own. But employers need not despair: there is instructive help to be found in the field of social justice, which studies how individuals develop their sense of identity socially, and how that identity affects their engagement in both mandatory and discretionary behaviour in whatever group to which they feel they belong. Research from this field reinforces and clarifies research from the world of subjective well-being by pointing to the crucial role of social group or 'community' in happiness and performance.

Eminent social justice scholar **Tom Tyler** of New York University has shown that individuals develop their sense of identity from feeling *pride* in their place in their relevant community and *respect* for the stature of that community. Positive pride and respect generate positive *identification* by the individual with the community. The benefit to a firm of an employee feeling a positive sense of pride from, respect for, and identification with the firm is a happy employee who will willingly go beyond

strictly set-out *mandatory* behaviours to engage in helpful *discretionary* behaviours.

The research in subjective well-being reinforces the powerful role of the individual's relationship with community, as well as the features of that community that contribute to happiness. Social justice and subjective well-being research can be amal-

The first feature that drives happiness is *one's perceived value in the eyes of the relevant community*. Perhaps 'Emily' is seen as the best programmer on her software development team, with whom she works on a daily basis on a multi-year software project. Or 'Peter' is always ranked as the top billing salesman in the plastics divi-

Individuals develop their sense of identity from feeling *pride* in their place in their relevant community and *respect* for the stature of that community.

gamated to suggest that there are three community-related drivers of happiness linked together in the reinforcing trilogy shown in **Figure One**.
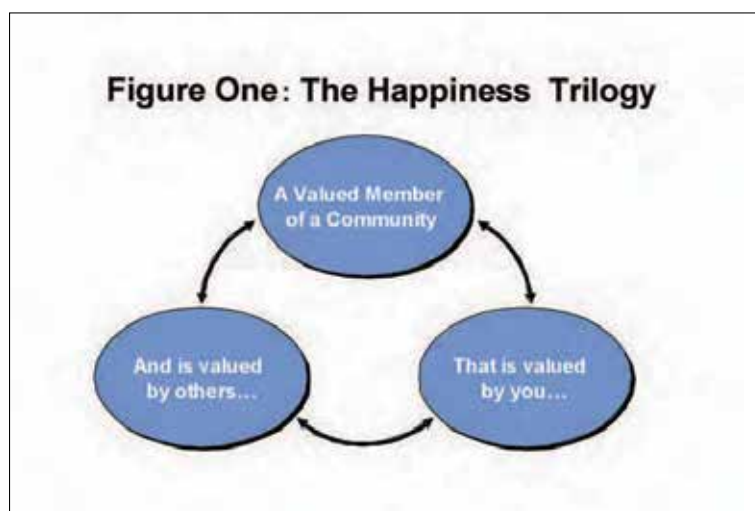
The Three Drivers of Happiness
Mother Teresa once said that one of the greatest diseases was "to be nobody to anybody." All of us strive to make our mark on the world and want to feel that our lives are worthwhile – and the work we do is a critical component of our legacy. If we believe that our work has meaning and that we are valued for what we do, this encourages us to remain involved and to seek the next level of achievement.

sion of his firm. Each derives happiness from being seen by the rest of their relevant firm community (in these examples, work-group and division, respectively) as a highly valued member. As level of value by the community increases, the feeling of happiness generated within Emily or Peter increases, other things being equal, with no upper limit – higher value means greater happiness.

The second feature of consequence is *how much one values the community in question*. **Groucho Marx** famously opined that he would 'never want to be a member of a club that would have him as a member', a turn of phrase not without the sly wisdom for which he was famous. If a person puts low value on a particular community, it lowers the happiness he or she feels from the value that community places on him or her. For example, perhaps Emily believes her software group is populated with terrible programmers with whom she wishes she didn't have to work; as a result, the fact that they value her highly won't matter much to her and won't generate much happiness. Conversely, if Peter thinks that his plastics firm is the finest in the industry, and he wouldn't want to work anywhere else, he will be doubly happy to be acknowledged as its number-one salesperson.

These two drivers of happiness are interrelated, and can either reinforce each other or undermine each other. When working in tandem, they can generate the significant happiness a person feels from

Figure One: The Happiness Trilogy

A Valued Member of a Community

And is valued by others...

That is valued by you...

being a highly-valued member of a community that they value highly. But when one or the other is not operative, it undermines the other: value by an unvalued community, as in Emily's example, undermines happiness, as does lack of value by a valued community: if, for instance, instead of

their firm, they respect their firm as being highly successful, and the business community as a whole tends to laud their firm relentlessly, at least while it is successful.

However, the happiness trilogy can quickly unravel if prominent success turns to prominent failure, as in the case of

world as a laudable firm. Instead, according to allegations, the 'return to profitability' bonuses actually encouraged senior management to illegally overstate earnings and profits to earn the bonus, creating a major accounting scandal that further lowered the opinions of outsiders.

The importance of the third element of the trilogy cannot be underestimated. Individuals who are valued members of a community that they value, but that is reviled by those outside of the community, miss out entirely on the third element of the happiness trilogy. For example, extremists of all sorts are automatically challenged with respect to their overall happiness, because even though they may be valued members of the extremist community that they value highly, their communities are viewed dubiously by the mainstream population. In an ironic way, the denial of this third element of happiness by the 'disrespectful' (to them) mainstream may actually drive them to be yet *more* extremist in their ways.

> Individuals who are valued members of a community that they value, but that is reviled by those outside of the community, miss out entirely on the third element of the happiness trilogy.

being seen as the best, Peter was known as the worst salesperson in what he views as the industry's premier plastics firm.

The third feature of happiness is equally interrelated: *the degree to which the community is valued by others outside of it*. Other things being equal, an individual will be happier to the extent that their community is valued more highly by outsiders. If Emily's software group is always held up at firm meetings as 'the firm's finest', her happiness will be positively reinforced. If Peter's plastics firm is written up in the business press as the best performer in the sector, his happiness will be positively reinforced. But if instead, Emily's software group is completely ignored outside of its own boundaries, her happiness will be negatively impacted. She will not be reinforced in her valuing of her software group (driver number two) because of the absence of outside validation (driver number three). The same would hold for Peter if his plastics firm toiled in obscurity.

An example of the 'happiness trilogy' working seamlessly to produce high levels of happiness is evident in Nobel laureates, who are held in high esteem by the field in which they excel; are strongly inclined to respect that field, having dedicated most of their lives to it; and are revered by people around the world, whether or not these people know much about the field in question.

Similarly, leaders of highly successful firms experience high levels of happiness because they are considered important by

Nortel Networks. Prior to 2001, Nortel's leaders would have been hard-pressed to see themselves as anything but highly-respected members of a firm that they respected and was held highly by those outside of it, and the business sector as a whole, since its leaders were frequently consulted on issues of public policy as well as industry-specific issues. However, since 2001, during which time the firm has cut more than 50,000 jobs and endured long periods of financial uncertainty and scandal, its happiness trilogy has systematically unravelled, affecting everyone from senior leaders to the front lines of the organization.

Implications for Business Leaders
Business leaders can use the happiness trilogy to foster a community that generates the power of productive happiness. Each element of the trilogy is critical to the outcome, as evidenced by the ages-old metaphor of the stool: each of the three drivers operates as part of an overall sys-

> A leader who aims to nurture employee happiness must develop operating systems and a culture that reinforce the role of the individual within the context of the community.

Ironically, the major accounting scandal that drove down an already-sliding level of employee happiness at Nortel was the result of a classically-misguided attempt to restore happiness through pay. Managers were offered hefty bonuses for achieving a 'return to profitability' – as if that would have restored the happiness they lost when Nortel ceased to be seen by the outside

tem; if only two are functioning, the stool will tip over. The power of happiness is unleashed by the three elements working together, and there are implications for management with respect to each element.

The first element of the trilogy – feeling like a valued member of the community – does not derive from a relationship between the firm and a class of employees

– whether it happens to be an 'exalted' class such as executive vice-presidents or a lower-level class such as customer service representatives. Value derives from, and therefore necessitates, a relationship between the firm (or a sub-part thereof) and the individual. With respect to some organizational component of the firm, the individual needs to feel valued by that community as an *individual* – valued as 'one', rather than as a generic part of the whole.

A leader who aims to nurture employee happiness must develop operating systems and a culture that reinforce the role of the individual within the context of the community. If each individual employee is unaware of what community they are a part, and how that community measures their value as a member, the firm will be incapable of being a positive force in helping the individual be happy as a member of the firm. He or she may be happy, but their happiness will derive from sources outside of the firm, and he or she will not give the firm any credit for their sense of well-being.

In order for individuals to relate to communities within a firm, there have to be communities to relate to. Leaders should view their firm as a nested set of communities, with individuals as the key components of each. Hence, the nurturing of communities – both sub-segments of the firm such as work-groups or divisions and the overall community of the firm – is a key task for business leaders. The drivers of happiness explain why social events such as staff picnics, employee fundraising initiatives, holiday parties, award banquets, and intra-firm sports tournaments are not trivial, but rather essential. They define and enhance communities, providing a vehicle for generating the value of individuals and representing an important component of their happiness.

The social justice research alluded to earlier helps describe how those communities must work in order to reinforce the second driver – the value the individual places on their community. In order to create a community that members respect and with which members identify, Prof. Tyler argues that community members must feel four things: that they are able to participate in problem resolution in their community; that authority figures in their community

demonstrate neutrality in decision-making; that authority figures in the community are trustworthy; and that as members, they are treated with dignity and respect. Business leaders need to promote these features of social justice – in the firm as a whole and its constituent communities – in order to promote the functioning of the second element of the trilogy.

Business leaders must not overlook the third element – the degree to which the firm is valued by the community outside of it. Ensuring that the firm's true accomplishments are recognized externally in a way that makes employees feel that their community is valued by the outside world, is an important component of the happiness trilogy.

Bearing this out requires careful consideration of *which outside actors* their employees value their firm being valued by. Some leaders assume that employee happiness will be most enhanced by having the capital markets applaud their firm's profit performance, but it is entirely possible that employees care more about outside observers applauding their firm for being socially responsible, or for being particularly innovative with its products and services. Understanding what outside value and praise generates the highest level of employee happiness is an important component of making certain that the

third element of the trilogy is making an optimal contribution.

Summary
Business leaders who want to benefit from the productive power of happy employees must think systematically about the three drivers of happiness. Starting from the standpoint of the individual employee, they need to make sure that systems are in place to help every employee know which community they belong to, and how they can become valued by that community. Leaders must also assist their nested communities in operating in ways that cause employees to value, and feel valued by, those communities. And finally, leaders must invest in communicating their firm's contributions to external entities in order that the firm becomes properly valued by the outside world, in ways that are meaningful to employees.

Only once they have ensured that all three elements of the trilogy are functioning smoothly will leaders have harnessed the power of happiness. In the end, if your employees are happy, chances are they will stay – physically and psychologically – with the job and with your company, leading to improved performance and service, and more loyal customers.

And if that isn't powerful, what is?   ■

BIBLIOGRAPHY

Andresen, Boud & Cohen, 2000; Kolb, 1984

Blog English, ESL and more: https://neilwhitfield.wordpress.com/

Cummins, J Brodie, K. (2013): The Power of Progfessional Learning Communities

Dr Gillian Godsell. Wits School of Governance. Talk given at Serious Social Investing 2014. GIBS

Fadel, Charles founder and Chairman Centre for Curriculum redesign www.curriculumredesign.org

Fillmore, Lily Wong; Snow, Catherine E. (2000) What Teachers Need to Know about Language

startUP&go! International Labour Organisation 2014

The South African Constitution (Act 108 of 1996)

Woolfolk, A. (1998) Educational Psychology

https://www.bie.org/blog/pbl_can_start_in_your_classroom

https://www.businesslive.co.za/bd/opinion/2017-05-29-sas-education-system-killing-off-entrepreneurship/

https://www.edutopia/org/project-based-learning-guide-importance

http://esl.fis.edu/teachers/support/cummin.htm

https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-preparing-tomorrow-workforce-for-4IR.pdf

http://fidspace.org.za/blog/wp-content/uploads/2010/11/Learning-Programmes_FAQ_Question_4.PDF (Critical and Developmental Outcomes)

http://www.ibe.unesco.org/fileadmin/user_upload/Publications/Institutional_Docs/IBE_brochure_2013_eng.pdf

https://infed.org/mobi/bell-hooks-on-education/

https://www.iol.co.za/news/politics/sa-ranked-61st-in-wef-global-competitiveness-index-11374664

http://mrkempnz.com/2018/05/top-5-skills-teachers-need-to-flourish-in-the-fourth-industrial-revolution.html

https://nicspaull.com/2017/12/05/the-unfolding-reading-crisis-the-new-prils-2016-results/

https://www.researchgate.net/publication/271937463_The_power_of_professional_learning_communities

https://tradingeconomics.com/south-africa/unemployment-rate

http://www.pivotal.it/millenials-crm/

http://pirls2016.org/pirls/summary/

https://www.psychologynoteshq.com/vygotsky-theory/

https://www.vvob.org/files/publicaties/rsa_education_white_paper_6.pdf

https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond

https://whammedia.co.za/south-african-public-schools-the-good-the-bad-the-best-part-two/

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