**A New Paradigm for Learning Based on the UN's Sustainability Development Goals (and why the traditional systematic Approach to Education is failing the World)**

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**Abstract**

This article gives my opinion, with personal examples, of why I believe the current academic and vocational learning systems are failing so badly to meet the needs of the modern world. It offers a completely new paradigm of learning based on five fundamental areas: (1) Make the highest aim of learning to make the world a more sustainable, beautiful and enjoyable place for everyone by identifying all learning and assessment opportunities against the United Nation’s Sustainability Development Goals. (2) Student-led partnerships predominantly using professional networking sites to enable each student to build their own mentoring and professional ‘though-life learning’ networks as appropriate to their needs. (3) Blending of all learning opportunities in all environments, industries, communities and internationally into one holistic curriculum. (4) Opening-up entry to more learners at and above level 3 (Year 12) by more innovative entry assessments. (5) Allowing students to ‘Pick and Mix’ qualifications so that they can get a mix of subjects and disciplines they, or their employers, want THEM to study in their vocational qualifications and degrees.

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Introduction

This paper gives my thoughts on the future delivery of education, not just in the United Kingdom, but all around the world. Why do I feel I have the authority, experience and expertise to write such a piece? It is because I come from a background where I twice had the ‘God’s Eye View’ of the very broad requirements and I was in position to change things to improve the effective support and delivery to improve the eventual outcomes at a national or global level.

The first time I was in such a position was when I was the principal advisor for all learning delivery in the Royal Navy and the second time, was when I was an operational planner, and later, the Executive Officer for the biggest service delivery agency in NATO. To give an idea of this latter role: my agency encompassed about 11,500 civilian and military personnel based at 22 major sites in 13 different countries with an equivalent operating budget of about €1.5Bn. I was responsible for the da-to-day co-ordination of all the communications associated with the services delivered by the Agency. Every morning I attended the brief on NATO’s communication’s ‘issues of the day’ and these often related to supporting one of the numerous UN mandates we were delivering at that time. That is why I now tend to hold a global view of things at the strategic level.

From those dizzy heights, and for the last eleven years, I have been ‘just’ a lecturer and Programme Leader in a college of Further Education, teaching all the engineering academic subjects from GCSE to second-year degree level. When I joined the college, I had the naive belief that I would be free to ‘give back’ to today’s youth at every level of learning - to inspire them to dedicate their learning to suit the jobs of tomorrow and make the world a better place for everyone – how wrong I would be!

Soon after joining my college (which by most metrics has remained one of the best in the UK), I started to see many of the serious failings of the educational system at every level. I have always believed that everyone must be given the opportunity to learn appropriate to their own desires, opportunities and environments - to personalise and self-enhance their own learning using all the wonderful resources, tools and assessment techniques which are increasingly available to everyone on-line. However, I have now come to realise that the traditional systematic approach to learning, and its associated ‘quality assurance’ systems, has become the greatest suppressor of human potential on the planet.

What is still missed by the educational establishment is that most relevant learning and assessment opportunities now lie OUTSIDE the lecture theatre or classroom in the real world, with the result that these opportunities remain unidentified and unexploited by the educators. Over the years, the resultant failings in education have been forcibly and eloquently expressed by people like Sir Ken Robinson in his famous Ted Talks, particularly ‘Do Schools Kill Creativity’ [1] and ‘Changing the Education Paradigms [2]’, but no-one seems to be offering any solutions to these problems.

This perception of failure has only increased under the banner of ‘raising standards’ and was recently confirmed by the Minister for Skills, Ann Milton MP, when she was reported to have said [3] in a newspaper article:

*“University graduates are immature, irresponsible and cannot communicate effectively when they enter the workplace”*, the skills minister has suggested as she urged more people to do apprenticeships instead.

She told how business leaders are “*always moaning about people who came out of university*”, saying that “*their degree was not relevant to the workplace*” and so it can take 18 months to two years to get them “*up to speed*”.

Businesses have said for a long time “*it’s all very well you churning out these graduates but we need skills - a degree isn’t necessarily transferable into the workplace*.”

With that background, I am currently working remotely in Covid 19 Lockdown and it is becoming ever more apparent that issues surrounding sustainability are rapidly taking centre stage worldwide. Sustainability will undoubtedly become a fundamental consideration for all businesses and investors as the world tries to build back its economy. This issue also supports important initiatives like the Climate Roadmap for FE Colleges [4] which was recently released by the Climate Commission for Higher and Further Education Students and Leaders.

For these reasons in this opinion piece, I will present a new paradigm of learning where the students chose what they want to learn, put their learning into practice in the real world and develop their mentoring and business networks using an appropriate professional networking site. I will also propose that all global learning under this paradigm should be based on the United Nations Sustainability Development Goals (SDGs). The intention is to give beneficial guidance on the overall ‘purpose’ of education and a recognisable structure to co-ordinate and develop educational outcomes and assessments in the future.

**Why I Believe the Traditional Systematic Approach to Education is failing the World**

As previously mentioned, there is continual and mounting evidence that the education system is getting things very wrong, but why is it failing so badly when the educational leadership has been putting so much effort into continually ‘improving standards’? I believe that the fundamental reason is that ‘standards’ require a high degree of ‘objectivity’ in defining what it is that should be achieved and, associated with that, is a high degree of objectivity in how each element should be taught and assessed. This objectivity and the related specification under-pinning the educational delivery, forces the system into an unwanted position of elitism (in the sense that someone is telling someone else what they need to learn), conformity, compliance, linearity, inequality, discrimination, exclusion which is highly obstructive to any change for the better. The system plays by all these rules with the overall effect that it becomes unfit to meet the rapidly changing business and individual learning needs of every student.

I will now give some personal examples of this effect. Last year for my annual teaching Observation I decided to run an experiment to confirm my belief as to why the system was highly resistant to any beneficial change. In the previous two years I had gained ‘Outstanding’ teaching assessments and had maintained a history of outstanding student feedback and accolades at every level I teach, from Level 2 (GCSE) – Level 5 (second year degree level). In addition, two of my students had won what I believe should be considered as the top student academic awards in the UK – the EAUC’s Green Gown awards for Student Research with Impact (2018 [5] and 2019 [6]).

With this background, I let it be known that for my next observation I would do what I believed should be required of learning delivery in the future. The subject for my lesson was the theory of electro-magnetic induction which I have taught many times over the last 40 years even though the lesson was part of a new unit which I had not taught before.

Under observation, as it was the first time I’d seen the class that week, I started my lesson with a look at the 5 min ‘This Week in Engineering’ video [7] (now in a different format) from engineering.com and discussed some of the latest developments. I followed this by making the class aware of a college-wide competition for the best ‘fake news’ story which I suspect was really being run for the benefit of the arts and media students. No one in that particular class decided to enter the competition, but two of my Aerospace students from another class (who I took gliding as part of their Theory of Flight unit) entered and came 2nd overall with a credible story and accompanying video about their development of a boundary layer control device around a wing using static charge.

After about 15 mins I went into the subject matter, but I related the theory to the new way the kilogram is defined using a watt-balance, which was announced only a few weeks before, and is based on the theory of electro-magnetic induction that I was teaching. I believe I might possibly have been the first teacher in the world to base the required theory on this new definition. I then showed a video on how you can build your own mass determining device (watt-balance) in your shed [8] and encouraged my students to take notes of the workings and requirements. The observation team then left, I presumed in disgust because I was not delivering the subject manner in the usual systemic way and they could not follow the connections I was attempting to make in my students’ learning!

In the last few minutes of the lesson, I split the class into smaller groups of 2-3 and asked them to draw a poster showing the components of a watt-balance and how it worked and finally stick their posters up on the walls to be judged by everyone. The best group’s poster won the ultimate prize in the college – a coloured Dick’s Star for them to stick on their mobile phones. Of course, as I anticipated, the Observation team assessed me as ‘inadequate – requires improvement’ and I was put on a painful but pointless recovery programme with the warning that I must not be so ‘unconventional’ again, especially if ever OFSTED visits!

My main point that I am trying to make now is that in general the ‘academic’ underpinnings of any course be it Arts, Humanities, Sports, Social Service or STEM based, is now freely available to anyone on this planet with an internet connection – all the students need is the right motivations and signposting to advance their knowledge and skills. In my own case, I have had a lifetime’s interest in five predominant areas: physics (particularly quantum mechanics and relativity), engineering, cosmology, history and philosophy (see my personal thanks to various people who have helped me understand these subjects on-line at the end of this paper). Consequently, over the last decade I have freely learnt enough just from the internet to create my own philosophy of life (which I call ‘Problacism’ and is based on Bayesian Reasoning) which I live by. The Covid-19 Lockdown has also made it increasingly apparent that all the course content required for any subject (except perhaps practical skills development and assessment – about which more later) is rapidly becoming freely or cheaply available to anyone on this planet with an internet connection. How can the colleges and universities compete with this, whilst maintaining their relevance and still charge for their courses in this rapidly changing learning environment?

My contention is that, to stay in business, the colleges and universities must allow the students to enhance their own learning in whatever way each student desires and encourage them to push their learning and assessment as much as possible into the real world. My own experience, however, is that in many ways ‘the system’ seems to be trying to concentrate learning ever more into the learning establishments themselves. I was hopeful that the new OFSTED Educational Inspection Framework [9] would give more freedom for the students to follow their own desired learning pathway outside the classroom, but a cursory glance proves that this is not so – in fact it seems to me to be inflicting an even more concentrated ‘inward looking’ system on us all. It is a bit like checking the quality and value for money of the stable door after the horse has bolted!

I am not saying, however, that there is no need for some objectivity even for purely educational programmes. The priority in any subject is that my students should all Pass against the metric of the subject and I always use the appropriate guidance to help design courses and indicate acceptable levels for assessment and grading. Indeed, some lecturers very much need to be told what to teach and how to assess their subjects and many teachers would not be comfortable in a classroom where they may be expected to deliver and assess individual students according to their students’ individual needs. What I am saying is, I feel that we do many of our students a serious disservice if we do not allow them their freedoms to develop their own learning pathways appropriate to their own interests and environments. I am not alone in this belief – I have known several wonderful and dedicated teachers who have left the profession or taken early retirement because they are of the same inclinations as myself and feel their professional expertise and judgement is not recognised or encouraged by the system anymore.

Of course, there will always be a need for high objectivity and rigid performance assessment criteria in all task related learning. However, the vocational programmes I currently teach are typically 70-80% academic or educational and only about 20-30% vocational-task oriented. My concern is that in general the educational content and assessment requirements on the academic side of my courses are too rigidly specified and can often act as an unnecessary barrier to enable the optimisation of my delivery to suit my individual students’ aspirations and learning needs. In many cases too, the criteria can be unintentionally discriminatory, non-inclusive and foster in the students a very damaging belief that it is only things that will enable them to ‘Pass’ that are worth learning.

I will give a few more personal examples of my experiences to demonstrate where the over specification of the assessment criteria can act as an obstacle to wider student learning and development. Last year during a maths lesson my class moved to the question of: ‘which aeroplanes and cars were the most beautiful?’ I thought this was a great opportunity to develop with the class some sort of agreed mathematical technique to rate each student’s assessment of beauty. I then applied that technique to ‘Googled’ images of different airliners (the A350 and B787 won in the airliner category), and cars (the Ferrari 250GTO won) – but then some of the students asked if we could do it with more conventional things like paintings - and a painting by Monet won that.

I thought this was a great exercise in applying mathematical quantitative techniques to qualitative assessments and I was pleased that I had encouraged some of my students to engage in their surroundings in a new way. I decided that I would continue to do this at any given opportunity with my other classes. However, the following day I was admonished by the class’s Tutor for straying away from the specified learning criteria (again!) because a couple of students in the class complained it was ‘wasted learning’ as it was not coming up in their exam! This is another effect of the over-specification of academic learning – and further proof that students nowadays expect to be ‘spoon fed’ the answers to every assessment and exam in alignment with the specifications.

Another example: I grew to know a student who had many personal issues and appeared very introverted, but I recognised that he seemed fully engaged when I taught him and he often gave me responses in class that showed he had an above average understanding of the subject matter. Unfortunately, this student’s problems combined in such a way that he was unable to motivate himself to submit any assignments in time to fulfil all the specified assessment criteria. I therefore went out of my way to give him 1-1 classes and the required practical assessments in an effort for him to gain at least some recognition for his understanding, and skill in a valuable subject (Analogue and Digital Electronics).

During the practical assessments he confirmed my belief in his abilities by building the assessed circuits, diagnosing faults, connecting the instruments and testing the circuits, all correctly and without any help. His performance was at a level above that of some of my previous students who had gained a Distinction in the unit. Unfortunately, despite my best efforts, he couldn’t motivate himself to write-up the conduct of the practical assessments and, as that was one of the ‘essential’ Pass criteria, he failed the unit without any recognition or qualification to show his talents (or my efforts).

This year, in Covid-19 Lockdown, I was required to deliver the same unit (Analogue and Digital Electronics) and this once again required the assessment of practical circuit building, testing and subsequent write-up as required for my student mentioned above. The prevailing consensus among teachers is that the delivery of practical assessments remotely in lockdown was not possible, but I was determined to give my students an opportunity to do something useful. I looked very carefully at the practical criteria and realised that I would need to be more ‘flexible’ in my interpretation to achieve them remotely. After much deliberation, I searched the internet for an FM radio kit which used discrete components, required soldering to build and could be verified as correctly assembled by a video of it working. In fact I later realised that a video at various stages of assembly would act as a good substitute for the write-up (which remember is a Pass criteria in itself) as it would require the students to demonstrate other skills than they would otherwise have needed.

I created two ‘Activity Sheets’ to go with the next two remote lessons. The first was about acquiring the FM radio kit and all the tools and equipment needed to build it. The second gave guidance on how to solder electrical circuits and some standard tips on component identification, orientation and how to correct faults without damage. Note that some of these important ‘skills’ were not part of the original assessment specification. The total cost for each student to buy the kit and all the associated building requirements was about £34. Not surprisingly, many of my students decided not to build it as it was not a compulsory activity, but I was amazed in the leaning gained by the 30% who did decide to acquire and build the kit. They all commented on how much they had enjoyed it and how much they had learnt and developed useful practical skills.

I therefore decided to send the Activity Sheets to all my students regardless of whether I was teaching them the subject or not and I was amazed at these results too. Several other students decided to acquire the tools and build the kit and, much more unexpectedly, when these students showed their working FM radios to their friends in other faculties doing unrelated courses, they also wanted to build the kit and asked for my Activity Sheets. This was a great example of the positive effects to wider learning of breaking down the course ‘stove-pipes’ and giving all individual students the opportunities to develop their own skills in real environments as they desire.

I also once arranged for my students to participate in a UNESCO funded project to help develop a digi-school in India via videoconferencing and student exchanges of data. However, I was told that this activity did not map directly to the learning outcomes that I was teaching at that time and I was told, in no uncertain terms, not to proceed with it. I believe this type of learning initiative will prevail in the future and has the potential to spread organically throughout the learners’ network and potentially globally. It was another example how modern connectivity can be used for ‘cross-pollination’ between different faculties, colleges, universities and countries with beneficial effects to all students. However, once again, because the learning outcomes did not match 100% the assessment criteria this most valuable effect was completely unrecognised and eventually prevented by the system.

In recent years I have developed and embedded several more of my own initiatives in an attempt to show the establishment how to better engage all students and enable them to learn in ways which are more appropriate to their desires in this rapidly changing world. I have a view that the fundamental objectives of ALL learning should just be to enable all students to make the world a more sustainable, more beautiful and more enjoyable place for us all. These three objectives are deliberately subjective and therefore open to wide interpretation, so they more readily encompass things like the Arts, drama, music and sport which are often relegated to secondary significance behind the economic drive for a concentration on the STEM subjects. These three overall objectives can be usefully broken down into more appropriate detail by using the 17 UN Sustainability Development Goals.

I will now discuss what I believe needs to be done to change to a more appropriate ‘student-led enhancement’ strategy.

**The current scandals**

Of course, there are many injustices and unacceptable practices around the world, but for the delivery of education I believe there are six fundamental scandals:

1. Students are forced to study specific programmes of learning while the modern need is for students to develop and enhance their own flexible learning path by networking with business and their communities. Learning qualifications are traditionally ‘stove-piped’ so that, for instance, STEM students cannot gain modules or units in the Arts, sports, music or drama as part of their learning and vice-versa.
2. Applications for the Arts courses are declining rapidly even though the Arts subjects can play a vital role in the making the world a more beautiful and enjoyable place for us all.
3. There are hundreds of thousands, perhaps millions, of REAL learning opportunities in the communities and around the world which are currently unrecognised and therefore unused in support of any learning. My own family is involved in the gliding club, the Cornish Gig-Rowing Club, the Robey Trust [10] (steam engine restorers and operators), my village’s Twinning Association, the village’s Amateur Dramatic Club and the Shooting Club. All these clubs require support particularly in things like website design, financial records, organising events, building and asset maintenance …. However, not a single student from any school, college or university is using these opportunities to develop their own competences as part of their course.
4. The delivery of learning often prevents - sometimes even prohibits - the use of the latest on-line tools and techniques, particularly in the STEM subjects - these tools are often seen as making the task ‘too easy’!
5. There are hundreds of thousands of real people in the communities who would be only too pleased to ‘do their bit’ for the community and pass on their skills and knowledge to the younger generations, but they remain unrecognised and un-resourced.
6. Events like the global student strikes for climate change prove that there is huge, but unfulfilled demand from the students themselves to use their learning to help make the world a more sustainable place or everyone. However, educational establishments around the world have not yet recognised or utilised the UN’s SDGs as a detailed and beneficial framework to identify learning and assessment opportunities to enable students to fulfil their aspirations.

**Using the UN SDGs as a framework for all learning objectives:**

In its broadest sense, I believe the purpose of education is to bring economic growth, sustainability, beauty and enjoyment to the world - Why not use these as the ultimate guidance to stimulate creativity, critical thinking, real learning and assessment opportunities and to engender a need for actual collaboration to create real-life beneficial outcomes?

When I’m teaching the Engineering Project modules now I just tell my students that ultimately sustainability, beauty and increased enjoyment are the aims for all their projects and that I don’t care what they do as long as their ‘product’ relates in some way to the delivery of one or more of the SDGs shown at Fig 1 below [11] and is economically viable. As mentioned before, two of my students doing their projects have won the top academic awards in the UK for the last two years, but they have also created and implemented real processes in industry which have been embedded to benefit the planet [5] [6].

I believe that every single SDG below can be used as a framework for potential learning opportunities for every subject at every level (i.e. infants to degree level). Ideally curriculums and specifications would be based on these Goals, but most learning opportunities, once identified, will be suitable to add in the long-term to each subject’s Contextualisation-Context grid:



**Fig 1** – the United Nations Sustainability Development Goals [11]

**The Four Elements of the Proposed New Paradigm**

Bringing this all together, my proposed new paradigm aims to ‘grow’ our students’ learning as THEY require by using a combination of the 4 principal elements below:

1. Student-led partnerships predominantly using free but legitimate professional networking sites – to enable each student to build their own mentoring and professional ‘though-life learning’ network as appropriate to their needs.
2. Blending of all learning opportunities in all environments, industries, communities and internationally into one holistic and naturally updated curriculum.
3. Opening-up entry to more learners at and above level 3 (Year 12) by more innovative entry assessments.
4. Allowing students to ‘Pick and Mix’ qualifications so that they can get a mix of subjects and disciplines they, or their employers, want THEM to study in their vocational qualifications and degrees.

Each one of these 4 Proposals above will now be discussed in more detail as ‘bulleted below:

**Proposal 1 - Student-led enhancement of their own learning using legitimate professional networking sites**

* Allow students to build their own mentoring network comprising of volunteers, mentors, business contacts, STEM Ambassadors ……etc. LinkedIn is the predominant professional networking site so students will be able to build relevant – potentially global - networks while they are studying and afterwards. This strategy will also reinforce and build a network appropriate to encourage minority groups like ‘Women in STEM’ etc. Legitimate professional networking groups overcome the data restriction and safeguarding issues. Volunteer mentors have the advantage of being self-motivated to make a difference in society or industry and help develop young people. The STEM Ambassador (I would prefer the less discriminatory title ‘Green Ambassador’) initiative ensures they are also trained, helped by an overseeing organisation and are vetted for the role (safeguarding).
* Enable cross discipline ‘pollination’ across local schools, colleges and universities. Ideally perhaps deliver a ‘Student Trade Day’ open to the community and industries in the relevant catchment area. Possible inputs from local clubs, Meetups, University for the 3rd Age, museums etc should also be considered for the enhancement and relevance of learning objectives and assessments. For instance, I once got involved in a project to open-up a walkway along my town’s canal with benches and boards erected showing poems written by the town’s school children – what a wonderful idea for the whole community. Soon this initiative grew with questions like: can the students choreograph and do a dance on the Grand Opening? can the music be written by the students? can the students make a video? All these wonderful learning opportunities needed guidance from mentors in the community, but they had to be cancelled primarily because of the difficulty of overcoming the data protection issues.
* Increase Professional Institute accreditation and developing paths with more diverse routes to membership and Chartered status.
* We should also consider developing a formal depository for student research, projects, IP protection and Patents and recognise pathways to bring such outputs to market. This is because the whole thrust of the proposed new paradigm is to create and implement real solutions in the world with likely positive economic effects, and these solutions may need this type of protection.
* Innovative exchanges around the world via things like LinkedIn or videoconferences using the latest tools like MS Translate to encourage students to communicate in the language in which they are comfortable.

**Proposal 2 - The blending of all learning opportunities in industries, communities and the World**

For this proposal I believe the diagram at Fig 2 below is sufficient. In my own teaching practice, I have developed and maintain a database of external contacts in the community who would like the students to help them deliver or develop some initiative or product either personally or in their clubs, trusts or groups. This diagram can be used as a template to build up each student’s professional mentoring and networking sites:

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**Fig 2 -** Proposal 2 - The blending of all learning opportunities in industries, communities and the world (example for Exeter, UK catchment area)

**Proposal 3 – Open-up entry to more learners at and above level 3 (Year 1) by more innovative entry assessments:**

Every year I receive a handful of enquiries from adults who want to study at the university level, but who have not gained the required entry qualifications – sometimes they only have Level 2 (Year 11) qualifications. I normally deal with these inquiries with an initial interview to determine their backgrounds and motivations. If I am satisfied that their motivations are appropriate, I tell them to register for free on-line with the Khan Academy [12] with me as their mentor and I set them a series of video lessons. The full course typically takes about 40 hours to complete. This technique in selecting students tends to be ‘self-filtering’ as about half find that they cannot give enough time to study when they are dealing with the normal distractions of everyday life (eg their partner is away or their children are playing, or their dog’s ill…or they just realise that they don’t enjoy learning). Each week I automatically receive a report from the Khan Academy as their mentor and I can keep an effortless overview of their efforts and their achievements. I accept on course those that pass through this filter and usually they prove to be the best students on their courses.

Some of my most satisfying achievements as a programme leader have come from this initiative. For example, one was 33 years old, employed balancing car wheels in a garage. He had only four GCSE (Year 11) equivalent qualifications from his previous learning – he went on to gain a full 2:1 degree in Mechanical Engineering and is now working for a Formula-E Racing Team. Another, with a similar background from the Army went on to achieve a master’s degree in Electrical and Electronic Engineering. He invited my wife and I to his Graduation in recognition of the opportunity I had opened-up for him - he is now a Project Manager for Crossrail and studying for a Doctorate. There are about a dozen others who I have given the same opportunity to over the years and they have all succeed in achieving the higher levels of learning which traditionally would have been very much closed to them.



**Fig 3** – Opening-up entry to more learners at and above level 3 by more innovative entry assessments

**Proposal 4 – Allow ‘Pick and Mix’ qualifications so that potential students can study a mix of subjects and disciplines THEY, or their employers, want them to study.**

My proposal here is that students and sponsoring employers should be allowed to ‘pick and mix’ the specialist learning outcomes they want to do from each subject’s pathway. They should then be encouraged to propose their own learning and assessment opportunities outside the school/college/university and in their workplaces or appropriate communities and environments. A few years ago, one of my higher apprentices was in the marketing department and her employer did not want her to do any CNC machining, but that was part of her course and she couldn’t do it. In an effort to enable her to graduate, I fully developed another unit available for her to do (Engineering Marketing) which was much more appropriate to her working environment. However, the system did not allow me to offer her this unit and consequently she failed her HND. Ironically, she has recently reapproached my college asking what she needs to do to complete this qualification as she needs it to become a teacher! This was another example of how the current systemic approach to learning tends to discriminate against the students in many unintended ways.

Under this Pick and Mix proposal, an aspiring sound and lighting engineer could perhaps, in addition to the core electrical and electronic units/modules, take a music and Arts course or perhaps a dance and drama module/unit. Perhaps an aspiring sports scientist could take relevant mechanical engineering and materials module/units - or perhaps photography. My own youngest son wants to do a degree in Mechanical Engineering, but he also is a passionate historian – why should he be prevented from including this subject in his learning pathway - who’s to say that history will not be a relevant subject for him in whatever field he is eventually employed?

I also feel compelled to mention that the current organisation for overseeing higher level learning, specifically the QAA as directed by the Office for Students, is inappropriate for the Higher Apprenticeship (HA) programmes. There are two main reasons for this: first, for HAs the ‘customer’ is the employer not the student, and secondly the assessment policies for a full-time university student – in particular ‘one submission only by the deadline’ – runs counter to the expectations placed on the learning establishments by the employers. Presumably, this policy is there to ensure ‘fair’ treatment to all (and in some part to avoid litigation issues), but the employer wants the colleges to get the highest standard of competence from all their apprentices regardless of any difficulties the students may face. They do not care how many attempts their apprentices are given and they resent the relevant college or university not giving them the opportunity to address these shortcomings as required – and I believe rightly so.

**The benefits of adopting these 4 Proposals under this new paradigm:**

I am going to bull-point the main advantages, as I see it, of adopting a strategy of student-enhancement of learning underpinning this new paradigm:

* Without significant resourcing, significantly better learning, relevant assessment, equality of access and student experience will develop for all learners.
* Without any specific targeting or expense, changes in the learning required by industry/society will be systemically and strategically updated and embedded by the overall approach.
* The effective curriculum will be led and changed by the people who need/want it. Thus, student-led enhancement would bias skills in favour of what the students, society and industry needs/wants specific to their region, interests or situations.
* Opportunities will continue to develop and expand in support of ‘through-life learning’ for all (via the selected professional networking sites) even after formal courses have been completed.
* The everlasting effect of improved and ‘demanded’ learning opportunities will continue to increase with time and will keep up with the rapid changes in technology and learning requirement.

**Some Potential Problems with this Paradigm:**

In a similar manner, I can foresee these will be the main problems in adopting this new paradigm:

* It requires many educators to be skilled in educational and training needs and assessment (ETNA) analysis and ‘sign-posting’ to mentors and learning support. This could be aided by creating a team of expertise at each college or university to conduct the ETNAs in the surrounding community and build a learning framework appropriate to the students’ subjects and catchment areas.
* There will be contractual issues to be resolved between all students and their related learning centre and consequent management, funding and resourcing problems.
* It is difficult to plan, set milestones, assess effectiveness and overall success of this paradigm in the short-term. I suggest it will take at least 5 years to see the real beneficial effects of the shift to the new paradigm, but this may be too far off to be accepted by any political party.
* The underpinnings require a cultural shift in society and much greater employer, volunteer mentor, STEM/Green Ambassador and student access to places of work, schools, colleges and environments etc.
* The embedding of the proposed new paradigm will also require a new paradigm of Educational Leadership (see below).
* Use of LinkedIn – despite the ever-improving networking capabilities of this networking site, it is unacceptable for the Public establishment to recommend a Private networking tool and there is growing public concern about Linkedin’s position in what should be a ‘free market’.

**A New Paradigm of Educational Leadership**

Nearly three decades ago I was responsible as the policy officer for all Leadership learning in the Royal Navy. This was a considerable responsibility because the quality of leadership alone can have the principal effect on the eventual success or otherwise of any operation, battle or endeavour. I was always mindful that people could literally live or die depending on the quality of the leadership to which I personally contributed.

Despite all the books and courses on this subject, I believe that Leadership can be neatly encompassed by my own definition: ‘*empowering and motivating people to fulfil your vision*’. In the Royal Navy the vision of every ship’s captain should be to make their ship the best it can possibly be in any battle, operation or endeavour. If a captain fails to achieve this Vision, then he/she is ‘dismissed his/her ship’ - and rightly so. He/she is not allowed to blame anyone in his/her ship’s company – as the leader it is their job to resolve such problems.

There is much evidence to show that the failings of the systematic approach to learning have been recognised at every level for many years, but nothing has really been done by the leadership to change things for the better. I believe the fundamental reason for this is because most educational leaders have the personal ambitions for their own promotion and consequently do not want to challenge the policies or practices that are required from them from the leadership level above. The result has been that many ‘leaders’ are deliberately unresponsive to the failings of the system and continue to impose it, regardless of the multitude of damaging effects. Even worse, in recent years the leadership have off-loaded their responsibilities to the front-line teachers by making them the course leaders and shifting the blame for any failings to their front-line staff.

I suggest there is a fairly simple way of re-energising the engagement of the leadership at every level for the necessary change under the new paradigm. I propose that in the future world the professional vision of every educational leader should be: to *empower and motivate everyone to embed student-led enhancement of their learning so that the world becomes a more sustainable, beautiful and more enjoyable place’.* If anyone is in a leadership position and they are not achieving this Vision, then they too should be ‘dismissed their ship’*.* Adopting this vision at every level would free-up change in a positive and beneficial way and would encourage the leadership to be less constrained and driven by their own personal ambitions.

**Conclusions**

In October 2019, before Covid-19 was even heard of, I made a bet with one of my classes that the global economy and financial system would collapse before Christmas 2020. They now ask me how I was so sure? - I replied I had developed a God’s Eye view of the realities of the global financial and economic situation by watching all the correct indicators develop in the correct context.

In a similar vein, I am now prepared to bet that many universities and colleges will face a crisis of confidence in them from society, employers and potential students before Christmas 2022. Most of the reasons are illustrated in this paper, but to sum up: the principal reasons will be that many educational ‘leaders’ cannot see that their traditional systemic and systematic approach (and its over-arching quality assurance procedures) are in many cases forcing an inappropriate, irrelevant and unchanging curriculum on the modern World. Consequently, they have created an unintentional position of elitism, conformity, compliance, linearity, inequality, discrimination and exclusion throughout the whole fabric of academic and vocational learning.

Looking a little further into the future, I suspect the ‘elite’ universities will be able to play on their ‘elite’ status and may even increase their course fees in the next few years with increased demand. Below that level, however, the remainder will find it increasingly difficult to justify their fees and existence. Many will not survive or will become completely unsustainable unless we have a complete ‘renaissance’ in the way learning is delivered.

I believe my new paradigm offers a solution to the ‘remainder’, will prevent a collapse of the higher-level structures as we know them and attract continued and expanding educational business. There is an enormous amount of work to be done in support of the concept of student-led enhancement of their own learning and this will require deft leadership. Fundamentally, the educational establishment must help and enable all students to identify and benefit from real learning opportunities outside their traditional confines in accordance with Fig 2.

The adoption of this new paradigm will bring about a much-needed revolution in learning delivery and will undoubtedly be challenging and difficult at times – once again this will require deft leadership. This will also require a completely new mindset for learning: that it is each individual student in their own economic and environmental context that is central to all learning requirements – something the traditional systematic approach will have great difficulty in accommodating and supporting.

Finally, I suggest that the ideal student motivation for the overall success of this new paradigm should be: *You can’t get a degree until you’ve proved that you have delivered something REAL in support of the UN’s Sustainability Development Goals to make the world a more sustainable, beautiful or more enjoyable place for everyone.*

**With thanks to...**

I would like to thank Sir Ken Robinson for starting me thinking about this problem over a decade ago. I would also like to personally thank the following people for their work in unknowingly educating me on-line for free over the last few years - I believe there is no greater gift to mankind: Sean Carroll, Robert Lawrence Kuhn, Thomas Sowell, Sabine Hossenfelder, Anton Petrov, Becky Smethurst, Arvin Ash, Indy Neidell and Matt O’Dowd. There are many other wonderful people who are doing similar work in their subject areas – thanks to you too.

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**List of Figures:**

**Fig 1** – Overview of United Nations Sustainable Development Goals [11]

**Fig 2 -** Proposal 2 - The blending of all learning opportunities in industries, communities and the world (example for Exeter, UK catchment area)

**Fig 3** – Opening-up entry to more learners at and above level 3 by more innovative entry assessments