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While Global Education dramatically fails, excellent solutions are waiting for acceptance

World Development Report 2018 is traditional-education's final oversight.

by
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Global education has still serious, critical and increasing problems related to learning, enrolment, quality, equity, relevance and financing, which for the past two years has been presented and verified by the UNESCO Global Education Monitoring Report (2015), the World Education Conference (2015) and The International Commission on Financing Global Education Opportunity (2016). None of them has been able to present or suggest any new or viable solutions to the education problems, basically because they all are promoting and holding on to a failing, ineffective and obsolete education delivery system and ignoring, or are unwilling to accept that modern technology has developed new ways to efficiently and sustainably solve the education problems and provide excellent learning and education for all, everywhere.

Expectations were, therefore, very high that the WORLD DEVELOPMENT REPORT 2018 – LEARNING TO REALIZE EDUCATION'S PROMISE - WDR 2018 – would come up with new proposals for a constructive transformation of education and learning to better respond to the needs of modern society, trade and industry in both the industrial and the developing world. At the initiation of the work on the report - in mid-2016 -, The World Bank invited Salman Khan to present his view on modern learning as it has been established in the Khan Academy; "*providing free, world-class education for anyone, anywhere"*. This is one of the most successful learning institutions now enrolling about 100 million students in 190 countries, using modern learning technology. In his presentation – Salman Khan – explains how new learning technology can provide "mastery learning" instead of the traditional "learning to pass a test" for all students and how this will revolutionize education and set a new standard for learning.

Despite this, WDR 2018 follows the traditional path of its predecessors and fails to present and discuss any of the many excellent possibilities for education development that modern technology presents. It picks up an old theme, which two previous UNESCO Commissions – the 'Faure Report', 1972, "Learning to be" and the 'Delors Report', 1996, "Learning: The Treasure Within" – comprehensively dealt with and made proposals for how to introduce in global modern education. With massive new statistics, the WDR 2018 shows that learning still is dismal in our schools but fails to present any new and viable ideas how to tackle the giant global learning problems. It suggests only, in conclusion, three vague and insignificant strategies for improve learning: *First, assess learning to make it a serious goal; Second, act on evidence to make schools work for learning; Third, align actors to make the entire system work*

for learning. In a world desperately looking for practical and viable solutions to the education development problems, WDR 2018 is a massive let-down for global education.

UNESCO's recently published World Education Monitoring Report 2017/18 brings up the question: how and to what degree all involved in education development work can be held responsible and accountable for their proposals. In that respect, the WDR 2018, shows that the traditional education establishment[1] (TEE in this paper), which leads and controls global education research, development, and most education institutions and organizations in the world is lacking in both responsibility and accountability, as it only supports and works for a continuation and retention of a failing, ineffective and obsolete traditional, education delivery system and ignores or refuses to recognize both the fundamental flaws of that system and the possibility to substitute the same with a learning system built on the use of modern technology.

The only viable and sustainable solution of the education problem would require and cause; that more than half of the present number of teachers in the world would loose their jobs; that all teacher-training institutions can be closed and that all present education research can be cancelled. A trade union catastrophe, naturally, but it is absolutely necessary and unavoidable that global education follows the same development pattern that all other institutions and enterprises in the world previously have been forced to go through, often with enormous and painful changes and conversions. For each teacher – well educated and sought after on job market - that is resettled, there maybe hundreds of young people in the world will get a full and god education instead of nothing. Isn't this really worth thousands times the price!

This paper deals both with the problems/issues and the possibilities/opportunities for the successful education development that WDR 2018 missed. It starts with a presentation of the fundamental education problems that are built into the traditional education delivery system, for which UNESCO already has presented and recommended solutions and it ends up with presenting A New Global Learning System, which build on these recommendations.

The fundamental flaws of the education delivery system that the traditional education establishment refuses to deal with

The traditional education system was established more than 150 years ago under the basic condition a that there must be a long summer break as both teachers and students then were engaged in farm work, and that for each teaching hour, teachers should have one hour of preparation time. It was not until after the Second World War, with the establishment of UNESCO, that efforts were made to "modernize" the system. In order to present an illustrative and explicit picture of a "modernized" traditional education system, the Swedish Basic

[1]TEE incorporates basically all teachers' unions and all teacher-training institutions in the world. Examples of its prominent and politically extremely powerful leadership can be obtained from e.g. the WDR 2018 – Acknowledgements - and from the composition of the World Education Financing Commission - www.educationcommission.org

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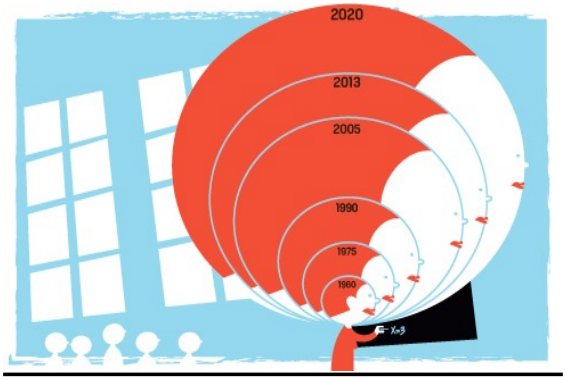
Education System is used as an example. It got its present shape in 1960 and became a global model for basic education to replace the old colonial system in developing countries.

The original long breaks and teacher' need for preparation time is still intact and in today's education delivery system, a teacher teaches 25 – 30 students about 20 hours per week during about 35 weeks per year, which means totally about 700 hours per year. That has become both teachers' teaching-capacity and students' official contact hours with a teacher. The education content is limited to what can be accommodated during that time. "Normal Operation Time" in the labor market during a year can be assumed to be about 40 hours x 45 weeks= 1800 hours per year, which means that students spend 1100 hours in mostly un-supervised time per year (for homework and assignments during school time) in addition to "ordinary" free time.

In 1960s (when I became a full-time teacher) it seemed to work out fairly well. The schools had largely homogeneous classes; schools and textbooks were the main source of knowledge; schools were a central point in students' life; and operated at the forefront of the technical, economic and social development. Teachers could still be masters of their subjects, and their work was appreciated and rewarding. There were no computers or cell phones and TV only in the evenings. There were good opportunities to get work and practice in the labor market.

But the technical-, social- and economic-development changed all that quickly, dramatically and permanently, as is shown in the picture below. (Reference to knowledge development is hardly ever presented or discussed in today's official education research or investigations - e.g. in the WDR 2018 or the about 500 research-papers it makes references to).

Knowledge-Boom (or the Education Bubble)



Grafics: Anna Spång, Dagens Samhälle, Sweden

For the past 50 years, the amount of knowledge in the world has doubled every 7 to 8 years. If the head volume of the teacher represents the amount of knowledge with 1960 as a base unit, the volume has in 2013 increased about 130 times, in 2020 increased about 260 times and in 2030 it will be about 600 times bigger.

The knowledge-boom has made students' and teachers' situation today totally different and basically hopeless. With the same teaching capacity, methods, tools and time, but with a body of knowledge to deal with about 150 times larger, the teachers' job has become practically

impossible to perform at satisfactory level. However competent, well educated and well paid, a teacher today can never do the teaching job in the amount and quality that is needed for providing an often diversified group of 25 -30 students with the individualized, high quality and comprehensive learning they need and could demand. To increase teachers' teaching-capacity to required level is impossible and schools, therefore, now deliver an education with continuously decreasing academic standard and lacking much of the content a high class, comprehensive education should contain according UNESCO investigations and proposals. Schools are no longer the main source of knowledge; students can get more and up-to-date information instantly on their iPhones, and iPads. Teachers' authority and status can be easily questioned and students often find schools and teachers lacking in up-to-date knowledge and experience. The school environment is increasingly perceived as boring, hostile and even dangerous.

The possibly most serious problem is that students now spend the 1100 hours of unsupervised "extra free time" in an environment packed with unproductive and misleading attractions and enticements. Students have rare opportunities for getting job practice, part-time jobs or internships. This may be the main cause of the considerable youth problems – alienation, gang building, criminality, unemployment etc. that the youth, their parents and communities-at-large now often struggle with. These problems, neither parents nor schools or teachers can solve; only with an extension of the guided education time and a new learning system can this be accomplished.

The fundamental and crucial education problems, which today's official education research and development programs never deal with or even want to discuss are:

1) Teachers' teaching-capacity and student/teacher contact time has become utterly inadequate;
2) The content of basic education programs have, therefore, become inadequate and outdated in relation to the demands of modern business, trade, industry and society.
3) Students are mainly left without support and guidance 60% of the "Normal Operation Time".

The only conceivable, realistic, available and sustainable solution for these problems is to use modern technology to digitalize and individualize knowledge learning – "Learning to Know" – and restructure, reorganize and expand the learning system for effective use of time and space in order to provide all students with a modern, comprehensive and fulltime basic education.

How this can be accomplished with the use of the recommendations of two international UNESCO Commissions - *the Faure Commission* and *the Delores Commission* - is presented in next chapter.

How this precarious situation for global education has developed historically from about 1960 until now is presented in Attachment 1.

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A Model and Preliminary Design of a new

Global Learning System

"Ten times better for half the price"

Basic assumptions and criteria

In order to present a practical and concrete model, I have taken as example the Swedish "Grundskola", which is a 9-year basic education school, and transformed it into a modern, technology-based Learning System. It is assumed that the existing subjects, course content and curricula will be included, enhanced with all that a first-class, comprehensive basic education program should include according to UNESCO research and recommendations.

The content of comprehensive basic education. UNESCO's *"International Commission on Education for the Twenty-first Century"- the Delores Commission* - and its report in 1996: *"Learning: The treasure within*" are used for the design of the total content and organization of the comprehensive basic education system:

"If it is to succeed in its task, education must be organized around four fundamental types of learning, which, throughout a person's life, will in a way be the pillars of knowledge; Learning to Know, Learning to Do, Learning to Live Together, and Learning to Be".

"Learning to Be" is designed to *"enable each individual to discover, unearth and enrich his or her creative potential. This means going beyond an instrumental view of education, as a process to achieve specific aims in terms of skills, capacities, competence, etc., to one that emphasizes the development of a complete person."*

The system of knowledge learning. The **"***International Commission on the Development of Education" – the Faure Commission* - comprehensively studied "*the world of education today and tomorrow*" and found that the teaching job required can only be done by using modern technology. The technology they required was at that time not available, but today it is readily available everywhere, fully developed and tested by e.g. the Khan Academy.

The solution to the teaching problem is to digitalize and individualize all knowledge learning and replace the teacher with a knowledge computer – call it "iLearn" or "iKnow". It can, with 24/7 capacities the year around, give every student an individual, equal and comprehensive knowledge-learning of highest quality.

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The four pillars - or modules - of comprehensive basic education:

Learning to Know, Learning to Do, Learning to Be and Learning to Live Together.

Learning to Know: Interactive and individual learning in Learning Centers. At the beginning of each academic year, students will be psychologically tested and assessed to determine what type of learning program they best respond to and what type of assistance they need in their studies. The learning programs can be adjusted to fit the student's learning and intelligence type to make it possible for each student to individually master each subject.

Knowledge learning will be organized in Learning Centers, which will utilize existing school buildings, equipped with modern media technology. Students will be responsible for their own learning and learn individually and interactively, with the assistance of specially outfitted and programmed computers – call them iKnow or iLearn. During one quarter they learn all the knowledge as prescribed in the curricula for the grade. Students' learning is continuously assessed and the learning process continues until the student master the subject.

Students will spend half the time each day on individual learning with the knowledge machine, and half the time on group projects in direct relation to the learning program. Knowledge learning will take place in groups of 10 students when they are in individual learning sessions and 20 students in group-sessions. There will be one teacher per group in all sessions. During the individual learning, each student will get learning support from a student that recently has completed the same course - see further under Learning to Live Together.

The role of teachers will evolve from dispensers of information and knowledge to facilitators and enablers of learning. The teacher_will be a learning specialist who can assess the student's learning type, select suitable programs, supervise the learning assistants and monitor the learning progress. Students will be automatically assessed through the learning process.

Learning to Do: Facilitating and preparing the transition from school to work and employment. Students will spend one quarter of the academic year doing practical work. They should practice – and be exposed to - as many different areas of the job market as possible, in order to realize employment opportunities that can fit their personal interests and aptitudes. Students must learn to follow rules and regulations of work places as regards to time keeping, safety rules, teamwork, environmental and trade union issues and considerations, etc. The program will be adjusted to the student's age, grade, gender and personal considerations.

Private, state, and community employers in the area will be responsible for organizing the "Learning to Do" activities and all of them will take place outside the Learning Center environment. The "Learning to do" module can and will be designed in respect of local social, ethnic, cultural, environmental conditions.

Learning to Be: Preparation for Free Time Activities and non-knowledge-based learning. This module deals with learning of skills, which are non-knowledge-based and as such needs more human teaching and coaching. It has a distinct objective and is separated from

employment and working life issues as presented under the "Learning to Do" module. It incorporates all cultural (art, theater, music, song, etc.), social (clubs, hobbies, etc.), and free-time (sports, athletics, etc.) activities that are available in the community where the student lives.

The students will be presented with, can try out and learn about all these different areas and then select one or several that they want to be engaged in according to their interests and aptitudes. These activities will be organized by appropriate private and public organizations within the community and are located outside the Learning Center environment. The "Learning to Be" module can and will be designed in consideration of local social, ethnic, cultural, environmental, etc. conditions.

Learning to Live Together: Introduction to social living and citizenship. The UNESCO formulation "Learning to Live Together" has been in our model been shortened to SUPPORT. The students will learn and experience what it means to live in a community or society and what responsibilities they have in supporting common programs and maintain common properties. Students will learn to work together and give service and support to the common programs of the community, e.g., health, old age, retirement and education programs.

The most important support work will be as a learning assistant. A student, who recently has taken the Learning to Know module and now follows the SUPPORT module, will support another student that takes the Learning to Know module for the first time. Students will thus attend the Learning to Know course twice; first as a student, and then as a learning assistant supporting a first-time student, which will greatly contribute to both students' learning. This part of the SUPPORT module will be organized by the Learning Centers.

The SUPPORT module program will initially enroll most of the students as learning assistants, but in higher grades students will also work and support the community's different welfare, maintenance and development programs.

A new organization and yearly plan

The education program will be restructured to fit all needs, at the same time as the effectiveness of education is greatly increased and the cost is reduced.

The four modules, Learning to Know = KNOW, Learning to Do = DO, Learning to Be = BE, and Learning to Live Together = SUPPORT will be allocated one quarter per year in time and organized as a rolling scheme during the year. Then we can utilize school facilities the year around. Students in the same grade are divided into four groups. Every student group takes one learning module in a rotating schedule from grade to grade. Each of the nine grades of basic education will look like this:

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LEARNING TO:

STUDENT GROUP	YEARLY QUARTERS			
	I	II	III	IV
1	KNOW	DO	SUPPORT	BE
2	BE	KNOW	DO	SUPPORT
3	SUPPORT	BE	KNOW	DO
4	DO	SUPPORT	BE	KNOW

Cost of a Global Learning System vs. Traditional Education.

A direct cost comparison between the costs of traditional schools and estimated costs of a new Global Learning System in the Swedish school system is presented in Attachment 2. This can be made in the same manner for any country or community, which has collected statistical enrollment and cost data. The cost for knowledge learning will approximately be cut in half.

Benefits of a Global Learning System.

The quality of education:

1 The students will be in charge and responsible for their learning. All learning will be individual and attuned to each student's personal background, knowledge and experience. The students will get learning support 100% of the society's "Normal Operation Time"

2. All students learn until they fully master the portion of the subject or course they are studying. No grading is needed as achievements are continuously and automatically tested and recorded.

3. The throughput in the system will be 100% and dropouts will be 0%.

4. Every school can have the same top-quality comprehensive education program, irrespective of where they are located - in a city or in the countryside, from the North to the South Pole. A remote village with 5 students can have the same top standard as an Ivory League facility.

5. The school efficiency as regards to quality, content, depth and speed of learning, and cost can be estimated to be about twenty times higher than in the traditional schools.

6. Developing countries will get a shortcut in education development and an opportunity for a speedier catch up with the more developed and industrialized countries.

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Teacher related issues:

1. All the present teacher-related problems will disappear. The role of teachers will evolve from dispensers of information and knowledge to facilitators and enablers of learning. The teachers will become professional learning specialists whose tasks will be to determine the students' learning type, select suitable programs, supervise the learning assistants and generally supervise the students' development.
2. Teacher training programs completely revised and very much shortened. Ultimately, all teachers will be recruited from persons with subject knowledge, commitment and 5 – 10 years work experience.

Economy:

1. Estimates show that the recurrent cost per student in the new Learning system can be halved - -50% - as compared the traditional education system. See Attachment 1.
2. New investments in buildings will not be needed. See attachment 1.

Financing and development aid transfer to needing countries.

1. Viable, attractive and well-designed projects of technical nature can be presented for financing from both the private market and the development aid donors. This new type of project will bring back old and bring in new investors into the education sector.

UNESCO Research and New Technology can start the development of a new Global Learning System in 2018

We have now reached a point in education development history, when we can sustainably solve one of the biggest, remaining, global, social, economic and financial problems – Education. With the use of modern technology, a new Global Learning System can be made to be ten times more effective than the traditional one at the same time as education cost can be halved. UNESCO has for the past 50 years laid the foundation for this development.

In foreword to the UNESCO document "Re-Thinking Education" (2015), the then Director-General, Irina Bokova wrote: "In the spirit of two landmark UNESCO publications, *Learning to Be: The world of education today and tomorrow* (1972), the 'Faure Report' and *Learning: The treasure within* (1996), the 'Delors Report,' I am convinced we need to think big again today about education."

In the foreword to the World Education Monitoring Report 2017/18 she wrote: "Accountability means being able to act when something is going wrong through policy, legislation and advocacy, including through ombudspersons to protect citizen's rights."

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The new global education development can start immediately and I invite UNESCO - under the leadership of the newly elected Director General, Audrey Azoulay – to take the initiative to establish a third "**International Commission on Learning in the Digital Age**" to investigate and make recommendations for replacing the present traditional education system with a new Global Learning System, including proposals for "policy, legislation and advocacy".

I submit this document as an "Ombudsman to protect the rights" of the 264 million children and youth, unnecessarily without education, and the billions with inadequate education.

This will be the greatest breakthrough in education history
and the biggest development project in human history!

Respectfully and responsibly submitted,
Bangsaen, Thailand, January 1, 2018

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P.S. I shall be pleased to explain, justify and clarify all figures and statement in this document and assist in adjusting the figures to comply with any country's special needs and requirements.

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Attachment 1

How education developed from being promoted by progressive forces to being held back by traditional and reactionary powers.

After the Second World War a new organization, UNESCO, started to lead and coordinate global education development. With its Universal Declaration that *"education is a human right for all"(*1948) a rapid global education development started through expanding the traditional education delivery system. It was assessed and scrutinized for feasibility and efficiency and many new independent countries searched for a modernized version of the traditional school systems. In 1960, Sweden had developed a new Basic Education System, which became a kind of standard for UNESCO and later the World Bank to replace the old colonial schools in the developing world, and it will be used as a typical example of a modernized traditional education system. This education development was initially successful from an enrolment point of view, but the quality of education soon became a serious problem.

UNESCO established, therefore, the first *"International Commission on the Development of Education*" - *the Faure Commission* - to comprehensively study "*the world of education today and tomorrow*". This dealt in an objective, comprehensive and responsible way with all aspects of education as a vehicle for economic and social change. It made an in-depth analysis of the development potential of the traditional education system and found that it could never be expanded and extended to provide global quality education for all. In its final report, *"Learning to be"(*1972) the Commission suggested that "*the time has come to overhaul education, that education today is facing a critical challenge and we have to think it out afresh in its entirety*", and "*.. underlined the fact that despite doubts and differing orientations, and whatever the progress or saving might be obtained from changes in the traditional educational system, the very heavy demand for education ... can only be met if instruments derived from modern technology, with its limitless possibilities, are put to use on an adequate scale and with appropriate means."*

This came down as a bombshell for the traditional education establishment (TEE), which saw a giant threat to its survival and heatedly rejected the Commission's proposals as being utopian and totally unacceptable. "*Learning to be*" was, unfortunately, too far ahead of its time. The learning technology, which was required for improving education development, existed in 1972 only as a vague possibility. TEE branded UNESCO as being politicized and too liberal, why very influential countries like USA and UK, with very traditional education systems, left the institution. Because of this and lack of funds for development projects and research, during the 70s and 80s, UNESCO's leadership and influence on global education started to slowly diminish. Since then, TEE has ensured that there has not been an overhaul of the traditional education delivery system or a call for re-thinking education, resulting in severe consequences for education development up to now.

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A new actor, the World Bank (WB) with big money for education financing and research entered the scene in mid-70s and started gradually to take over UNESCO's role as a leader of global education development work. Its education sector staff strongly promoted the traditional education system, despite learning technology had developed rapidly in the 80s and the UNESCO recommendations seemed to be increasingly viable for solving education problems.

One of the vital questions for the WB was what criteria for financing education projects should be applied. Attempts to determine the standard "the economic rate of return" for financing development projects turned out to be very difficult as far as quantifying the benefits of education. Therefore, for financing education development a "social rate of return" was agreed upon, which in practical terms meant that education development projects never needed to be subjected to strict economic scrutiny or being financially accountable, but financed out of a social necessity. This is still in effect and is one of the main reasons why education development today is lagging far behind all other sectors of the economy and all other institutions and enterprises.

Instead of using economic criteria for development, the education sector now uses a system of international comparative testing to determine the "quality of education" – PISA, TIMSS, etc. Countries take the same test and are graded in relative terms according to the results, which never reveals the absolute and fundamental problems of education. Therefore, for the past 20 years, all global education research and development work has ignored the two fundamental and critical education problems, presented previously, and used comparative testing to justify the continuance of an obsolete and inefficient education delivery system.

In 1990, The World Bank hosted and paid for the first World Education Conference in Jomtien, Thailand, where new goals and strategies for global education development were established to year 2000 and the Conference declared that the "World" had decided that the traditional education system should be continued. The World Bank promised billions of dollars in support and was, together with TEE, firmly established as leaders of global education.

The progressive portion of UNESCO was not satisfied with the outcome of the Jomtien Conference, which had totally ignored the recommendations from *"Learning to be"*. In order to search for new and progressive solutions to the education development problems UNESCO established a second *"International Commission on Education for the Twenty-first Century"* - the *Delores Commission.* The 'Delores Report' in 1996: *"Learning: The treasure within*" could have greatly contributed to the efforts of modernizing and restructuring the education system. It offered good and workable approaches and new strategies for education development and introduced new, practical and important elements for the design of comprehensive education programs. Above all, it suggested an expansion of the learning process to encompass the four "pillars" or modules of a comprehensive basic education program: "Learning to know", "Learning to do", "Learning to be", and "Learning to Live Together" and to *"enable each individual to discover, unearth and enrich his or her creative potential,.. to one that emphasizes the development of a complete person....in short learning to be*." As the traditional education

system has a much-limited capacity to accommodate anything new, the TEE managed to marginalize, ignore and disregard even this Commission's excellent work and proposals.

This was the end of the progressive period of global education development. The two mentioned UNESCO Commissions are the only ones that have studied the possibilities of a progressive education development in a creative, objective, comprehensive and responsible way. Their proposals for education organization, system and content are still the only ones that are valuable and useful when designing the future of education. It is symptomatic for the decline of education that they are never cited or referred to in today's education research outside UNESCO.

Despite the fact that the Jomtien goals were not reached according to evaluations and the state of education had worsened, the TEE organized a second World Education Conference in Dakar, Senegal and agreed upon new goals and strategies for education development up to 2015, still with no other alternative than using the traditional education system intact.

It became rapidly evident that the Dakar proposals and strategies would not be able to achieve their intended goals. The World Bank tried to find new solutions to the education problem and made an extensive global education review in 2009 – 2010. The results and findings were presented in the World Bank Education Sector Strategy 2020, "Learning for All." In order to show a new initiative, it took up an old UNESCO theme and suggested a major strategic shift from promoting Education for All (that hadn't worked for the past 20 years) to Learning for All. This strategic shift was, in principle, well motivated, but not accompanied by any proposals for changes or adjustments to the traditional education system and it has, therefore not had any positive impact on education development.

All concerned UN organizations and all world governments took part in a thorough global review of the state of education in 2012 - 2014 and UNESCO presented their findings in The 2015 EFA Global Monitoring Report (GMR). The Report states that the Dakar and UN Millennium goals for education development are *"far from reached"* and education is still in serious crises. The GMR report, which is an impressive collection of education statistics, included recommendations for a continued education development without any substantive changes in the traditional education delivery system.

The GMR recommendations were forwarded to a third World Education Forum in Incheon, Korea, (May, 2015), which set new goals and strategies for education development up to 2030. The "Incheon Declaration" presents and calls for "*a new vision for education, with bold and innovative actions"* but it does not present proposals or recommendations for changing the traditional education delivery system. On the contrary, all calculations of the *"increased financing need to reach the ambitious goals by 2030"* are based on a continued use of an outdated and inefficient education delivery system.

A sparkle in the education darkness, presenting a new and extraordinary education development possibility was the "International Conference on ICT AND POST-2015 EDUCATION" (May, 2015) organized by the People's Republic of China in Qingdao. It was

follow-on from ”Incheon”, with many of the same participants, and it showed that *”Technology offers unprecedented opportunities to reduce the long-existing learning divide”. ”*The Qingdao Declaration” presented a modern variation of what UNSCO”s “*Learning to be”* outlined in 1972, but its suggestions and recommendations could not be accommodated within the framework of the limited traditional system and have been ignored by the TEE.

After these world conferences, the “The International Commission on Financing Global Education Opportunity” was set up to reinvigorate the case for investing in traditional education. This, the most prominent Commission in education history (www.educationcommission.org) delivered its final report “The Learning Generation” to the UN Secretary-General on the 18th of September 2016. The Report states that *“education systems must develop new and creative approaches to achieving results..”,* but gives no indications of any significant change to the present education delivery system. The Commission misses completely - and in an irresponsible way - the point that the lack of financing for education is because of the grossly ineffective and obsolete education delivery system used and that efficient learning systems built on modern technology like e.g. the Kahn Academy has no problems to attract investors and financiers.

At this point in time the **World Development Report 2018** was presented as commented on at the beginning of this paper. The only merit with the report is that it finally triggered the development of the new global learning system.

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Attachment 2

Cost and classroom facilities comparison: Traditional Education vs. a new Global Learning System.

For this comparison, statistics from the Swedish Basic Education "Grundskolan" is chosen. The cost comparison can be made in the same manner for any country or community and the actual figures can easily be substituted and adjusted for appropriate estimates**.**

As a rough estimate, Sweden has a population of about 10 000 000 people and the Swedish Basic Education has 9 grades, with about 1 000 000 students and about 90 000 teachers. The number of students in basic education is 10% of the population and the number of students per teacher is then about 10:1. There is an average of 25 students per class.

Comparison of education resources and capacities in a Swedish community with a population of 10,000 people

Total number of students in 9 grades of Traditional Education (10%) = 1000
Total number in the new Global Learning System (the same) = 1000
No. of students in the KNOW module at the Learning Centers = 1000/4 = 250

Traditional Education has 25 students per classroom and 1 teacher per 10 students. The Learning Centers have 10 students per media room and 20 students per group room with one teacher in each.

Facilities and teachers required:

	Traditional Education	Learning Centers
Classroom needs	1000/25 = 40	
Media room needs		250/10/2 = 13
Group room needs		250/20/2 = 7
Old type of teachers needed	1000/10 = 100	
New type of teacher needs (+20% for vacation, etc.)		(13+7)*1.20 = 24

The total cost for traditional education is about US$ 10,000 per student and the cost distribution is approximately as follows:

Teacher salaries and expenditure = 50%
Buildings, inventories = 20%
Student learning, Library = 5%
Administration, incl. student meals, welfare, transportation and misc. = 25%

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This distribution is made for the Swedish school system and figures may vary in other education systems. The cost for students' welfare and meals will be reduced as to about half as there are only in the Learning Centers about half of the time. The cost for learning materials is calculated under the assumption that each student will have access to a new learning computer and that interactive learning programs will be produced and distributed in all knowledge-based subjects. The computer equipment cost is estimated at a high total of $1000 per unit, including standard software. Today the cost of a appropriate "super-computer" for schools is about $300; ultimately expected to decrease to $100 in global mass production.

Cost comparison between a Traditional Education system and a new Global Learning System for a community with a population of 10,000 people.

The basic cost per student and year at present is set to US$ 10,000. The Global Learning System cost is US$ 4,900 as shown in Figure 3.

	Traditional Education System	New Learning System
COST CATEGORY		
Teacher costs 50%	$ 5,000	$5,000/100*24 =$1,200
Administration+ Misc. + Students' meals + School Transportation+ Welfare, etc., 25%	$ 2,500	50% of $ 2,500 = $1,250
Buildings and Inventory, 20%	$ 2,000	20/40*2000 = $1,250
Library 5%	$ 500	Estimated @ = $1,000
Learning computers for Learning Centers replaced every year + extra media equipment and basic software		20*10*$1000/1000= $ 200
Cost per student and year	**$ 10,000**	**$ 4,900**

These approximate cost estimates will vary very much from country to country and from continent to continent. In general, they indicate that a new media- based Global Learning System can reduce the recurrent cost of basic education considerably. The cost per student for computer equipment is negligible in comparison with other costs, despite the fact that we have made a high estimate of equipment cost. The cost for teacher training will be dramatically reduced.