The Rise and Fall of Conventional Schooling

in Light of the Information Age

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* Schooling in the Information Age means Online / Wireless Schooling

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Introduction

"Man who had confined his schooling from the era of Plato with needs on earth, had entered by the last mid-twentieth century the space-

electronic age. Consequently, his psycho-social, economical, material and educational needs for a productive schooling seem to have been changed. The reason beyond these profound shifts in living priorities is that the cognitive, life concerns, as well as the behavioral fields in which man operates have extended to infinity"[1].

Yet by the beginning of the new Millennium, and with the advent of economic, social and political globalization,, and the Information and Communication Revolutions which resulted in what is currently called the Information Age and Knowledge Society, have all resulted not only in making conventional schooling obsolete geographically, but also invalid in its educational mission, goals, content, curricula, instruction, assessment, management and the quality of student graduates. Conventional educational institutions at both school and university levels are serving now at best the welfare of generations and society in the fifties of the past twentieth century.

What is observed in this regard is that people, cultures, professions, life styles, civic institutions and nation states had all throughout history, except schooling, experienced changes and / or developments for better or worse. Individuals and communities have developed their ways of living from hunting and gathering food, farming, industry, politics, and trade, to information communication2. The only factors in the history of human life which persisted for thousands of years without having significant changes are the schools and schooling systems, though considered by many very decisive factors for the development of human mind and personality.

To continue schooling with the tradition of Plato's Academy means simply that the educational systems are gearing their priorities backward to the past, preparing generations at most to memorize its

values, to duplicate its skills and to adapt to its outdated ways of living. Thus, contemporary student graduates are not qualified for utilizing the marvelous advances of the Information Age,, and in fulfilling the over demanding needs for better living,, as they are attached to memories, folklores and accomplishments of ancestors.

One source[3] summarized the above dilemma of conventional schooling in the following paragraph: "Students either spend countless hours in classrooms acquiring knowledge that isn't applied until years later (if at all), or they are tested by experience before they even have a chance to learn what they need. Wouldn't it be much better to get the knowledge when and where they need it in real time?"(as the case of on-line / wireless schooling?).

Conventional schooling paradigm is basically a teacher- teaching model. Since Plato's Academy, it delivers usually in passive settings and mostly by means of lecturing to large numbers of students, standardized content, in a discrete time and place. The lecturer also uses a "one-size-fits-all approach", since the content of the lecture remains the same for each student regardless of his or her individual needs. A new management schooling paradigm which is students and learning centered, has emerged by the beginning of the third Millennium and makes learners in the educational process active participants and "co-producers" of knowledge. Schooling has shifted to customized content based on students' needs, from limited time and place teaching and learning to anytime and anyplace delivery, and from passive lecture modes to interactive and applied learning[4].

Our current schooling and educational systems are too old, overly outdated and severely unproductive. One educator expressed deep dissatisfaction with the conventional schooling by stating: "Our current

education system is based on outdated concepts leftover from the agricultural and industrial ages". He added"In the Information Age, information - not raw materials and physical labor - is power"[5]. Time is urgently calling now for a profound reform by which schooling shifts it's paradigm from the agricultural-industrial ages in which the school was looked upon as an information warehouse to the information age paradigm where the school is seen as an information highway.

What should follow the advent of Wireless Revolution and it's off-spring the M.I.T Oxygen Project[6] or what I may call "Electronic Oxygen Education" at the beginning of the new Millennium, is the necessaryinitiation of profound reforms in educational missions, goals, academic contents, curricular designs, methods and technologies of instruction, assessment techniques and methods. It is imperative also to transform without any delay current static school and university campuses into live multi-purpose information and skill development facilities, serving students and local communities as well for twenty four hours a day. This paper aims at illuminating on how schooling has developed throughout history; and projecting alternatives that could generally prove effective in the globalization- digital information age and the era of Wireless Revolution in particular.

A Shortcut History of Schooling in Education

Schooling is an ever persistenting activity of life. No one human being can survive and manage life without some sort of informal and/or formal schooling. While this fundamental activity was performed by a nomadic roaming style from early history of mankind up to the fourth century B.C, when the first residential one classroom school was established by Plato in the name of Academy[7]. Thus, the first educational revolution of schooling had started by that date, to continue

up to the fifteen century A.C by then Johannes Gutenberg's invention of printing machine[8] at 1440.

Schooling during the extended period of more than eighteen hundred years (from Plato's Academy 387B.C to Gutenberg's printing machine, 1440), had persisted all along in nature, content, methods, human and educational services, facilities and outcomes. "School Houses" and "Dame Schools" as called generally in western education[9] ; or Kattateeb (writing classrooms) as practiced widely in Arab / Islamic countries, were mainly "one classroom" schools, hosting relatively small groups of learners, led by old - aged men or women teachers, using basically the didactic vocal, rote learning and apprenticeship methods. Curricula concentrated on stuffing students with religion, the "three Rs" or the "Basics" (reading, writing, arithmetic), philosophy and some science of the time. Student graduates were basically literate in these areas and tentatively were capable in dealing with simple ongoing life needs.

Needless to indicate here that cries often heard nowadays from parents and educators for schools to return to the "three Rs" or the "Basics", followed by repeated calls for equipping students with "learning how to learn". These loud hints are actually unfortunate reminders of our schooling failure to produce successful graduates for life and work situations as expected.

However, the case of above limited residential schooling continued up to the mid fifteen century A.C by then Johannes Gutenberg invented the first automatic printing machine at 1440. This printing machine as one writer put it[10] "can be credited not only for a revolution in the production of books, but also for fostering rapid development in the sciences, arts and religion through the transmission of texts". Another

source confirmed that "Gutenberg's invention of movable type in the mid-1400s triggered a shift from the use of the mind as storage to the mind as processor of print-based information"[11].The consequent effects of this invention on the processes and means of schooling and education were enormous.

Actually, the movable type invention of Gutenberg had marked the fifteen century as the milestone of the second revolution of schooling. Schooling which turned to be massive and open for all and a priority concern of the religious establishment and the state,, thus transforming the methodology of Plato academic in intensity, magnitude, curricula, methods, and institutions to its ultimate levels. Schooling had transformed into a private and state daily business.

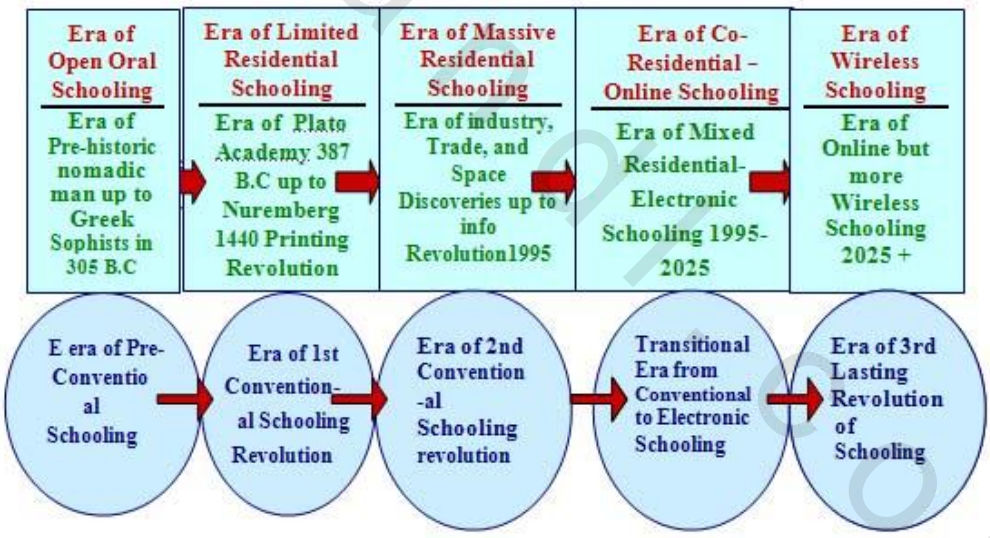

Figure 1: Eras of Schooling throughout History

The massive residential schooling persisted without apparent challenges in its ways for five hundred years, up to the end of twentieth

century where the "Super High Way", then named "the Internet" was launched,, and the on-line schooling strategies have been initiated into the business of education.

This transitional era of interweaving practice of both conventional and electronic schooling will last most likely in western education and as well in some eastern developed countries, e.g. Japan, Malaysia and South Korea for up to 2025. By then, it is expected that wireless schooling will pick up speed as a norm methodology of education for all ages: young and adults regardless of their life commitments, time and geographic conditions.

Schooling by being wireless as one source confirmed, will become free like oxygen in the air12available for all regardless of their daily time, age, place and other personal backgrounds. However, for under-developed and developing countries, the story will be different due to the many helpless and corrupted conditions they are experiencing. Wireless schooling may come into existence (if ever comes) by around 2050!

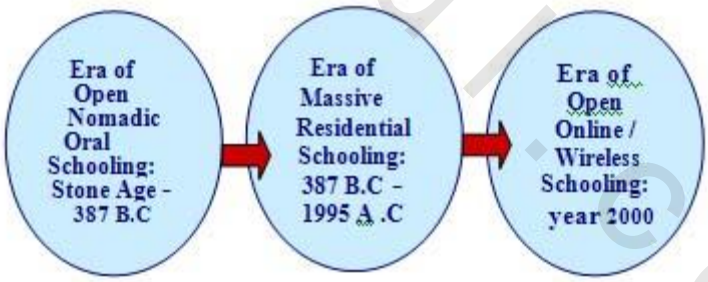

Figure 2: A Shortcut Diagram for Eras of Schooling

Figure 2 could be depicted in more specific details as appear in alternative figure 3 bellow:

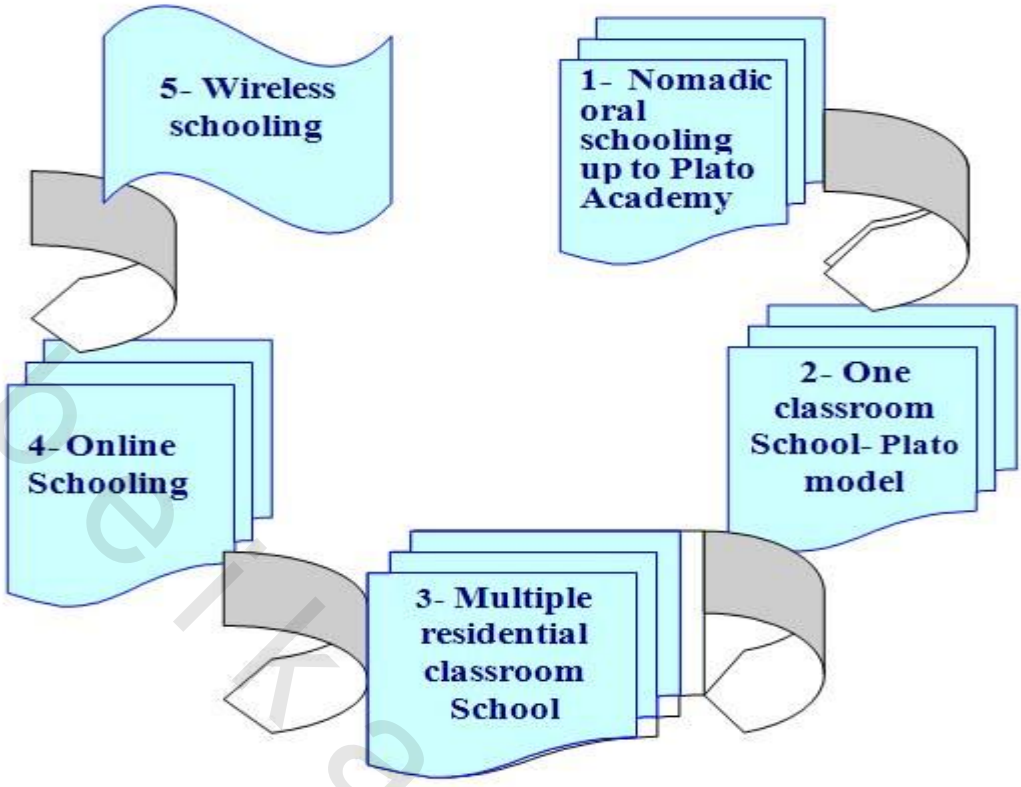

Figure 3: Alternative diagram of major developments of schooling

It should be emphasized here that the start of practicing wireless schooling as a common methodology of education will signal the actual fall of conventional schooling (that is massive residential schooling) which lasted since Plato's Academy for more than 1800 years. Thus schooling which started nomadic and individualistic for tens of thousands of years before the rise of ancient world civilizations during the 1000 B.C,, is coming back into reality through wireless technological means. It will enable students, teachers, information, materials, equipments and facilities again to roam around in time and space, and to freely inter-communicate their learning-teaching messages.

The real effective power in our contemporary age is information. The human monopoly is no longer the ability to hunt /gather food or

things for survival as prevailed in the stone age; or the availability of vast lands, more workers, and best machineries as the case of agricultural age; nor ownership of best factories and/or huge capital as in the industrial age. Rather, it is information. We strongly believe that who owns information, owns consequently the brain, the ability to think, to learn and relearn meaningful knowledge and to perform effective decisions and actions.

Toffler states in Huitt[13] that "knowledge is the central aspect of today's society" and the "most successful in the information age, whether individual, group, community, society, or nation is who has access to information and the ability to process it".

Wireless Revolution: The Ultimate Liberation of Human Potential and Schooling in the Information Age

Wireless Revolution which launched by the beginning of the third Millennium, signals the ultimate liberation of students, teachers and schooling from the constrains of time, place, standardized content and personality passiveness. It liberates current finite human thinking, ambition, and performance to limitless infinity. With the Wireless Revolution, man though physically appears under siege, he or she is psychologically free like the air, can surfs cognitively at any time any where for information via electro-magnetic waves as needs arise.

As Don[14] predicted 1996 the fall of government due to the "Mobile Revolution" that dismantled the geographical borders on which governmental political identity is based, Wireless Revolution which freed knowledge from the confinements of books, classroom walls, and time schedules has also nullified the legal physical and operational existence of conventional schooling. As a result, students and teachers no longer need to limit themselves to school narrow boundaries.

Instead, they can now stretch their learning, teaching, and personal/professional growth world wide in what we may call " the world wide school", the "world school" or "the school of the universe". Schooling which will give up soon its current static conventional modes, will convert at the same time to be a "universal service with universal access"[15].

Microprocessor info-sensory chip which constitutes the working mechanism of wireless communication, will soon indulge itself in every aspect of life, in every machinery, in every equipment and tool of human activity. In health for example, there will be wireless chips when implanted under skin or put on skin, feedback information concerning body conditions, nutrition needs or necessary medications will be flowing on the personal or micro computer or on some other monitoring devices. Even in medical industry, there will be info- sensory chips which will report the qualitative and quantitative precision of the elements constituting each medicine. Other chips will decide whether medicines are authentic or other wise.

In machineries, industries and factories,, there will be wireless chips which will operate tools, equipments and machines instead of humans, and send data to monitors of technicians and/or managers concerning ongoing operational states, where and what should be done and the degree of urgency to do so.

For cars, planes, ships, and railroad transportations,, there will be wireless info-chips which will operate these vehicles without apparent interference of humans, surveil the machine and driving operation conditions, make elementary or software corrections, and send feedbacks to technicians and drivers for necessary actions.

In homes,, the smart house model of Bill Gates where every equipment and task are wireless, will be a normal practice in the West and some other developed countries within twenty years from now(2007).

For human-to-human relations and co-existence,, compatibility of communications and affective choices for joint work, traveling, studying, friendship, love, marriage or neighborhood will be guided by smart wireless chips based on stored criterion data. Thus, many routine and strategic problems of human relations and endeavors will be relatively eliminated for the benefit of more civic conducts such as: caring and mindful appreciation, commitment, cooperation, sharing, and involvement, intimate relationships and personal as well professional successes.

In agriculture,, earth fitness for specific plants, green-house plantations, growth needs of plants, irrigation, climate states and conditions, crop maturity, suitable times for cropping, best ways for cropping, healthy conditions of storage warehouses, and products' validity for human consumption could be specified, guided, regulated, management and quality controlled by micro processing info-sensory chips.

For safety matters of cars, buildings, streets, public centers, equipment systems and the like, will be managed totally in the future by wireless info-chips. Based on programmed data, these tiny "smart creatures" will be able to transmit audio/visual alert signals of types, places, sounds, photos, and probably the best actions by which the emergent dangers could be encountered.

In public administration services,, nearly all people needs and duties, responsibilities of public civil servants, interactions, documents,

and payments will be performed wirelessly without the need of direct personal contacts. In the near future, more public and private employees will be accomplishing their jobs from homes or any other place on earth. There will be no need for them to work in one formal place and unified time as usual now. The current central governmental and private locations of businesses and services will be transformed into programming, leading, guiding, and quality control units, administered by few top qualified professionals and highly prepared tech specialists.

Concerning public and private schooling,, learning, teaching. administering, guiding, counseling, motivating, assessing, and documenting will be performed wirelessly as online education is gradually tapering down within next twenty years. Teaching and learning will be happening at any place in all times. Teachers and learners will perform their verbal and written interactions while sensory chips transmitting instantly their audio/visual messages to any concerned parties across the globe.

It is even expected that these chips will be able to transform written texts into verbal and vice versa. In the very near future, there will be "smart machines" to which you can talk or present a written text while receiving/typing the verbal or written messages and sending them digitally to any specified email, internet site, information center, info-relay station or school system (This notion has started partly to realize in M.I.T Project by devices: Handy 21 (H21s) and Enviro 21 (E21s) [16],, as the Author found after proposing the idea).

Teachers and learners will be also performing fluid roles through which teachers may convert to learners and learners may be

academically tutors of their peers, while others will be teachers of their teachers especially in matters of information technologies.

Schools will be transformed into community centers where real life problems are discussed and solved; interpersonal relations, values and skills are maintained and developed, and future local and worldwide issues are predicted and strategic alternative solutions are projected. These community school centers will hold also offices of a steering committee of high tech cadre and highly qualified educators plus a wireless info-relay station to keep learning-teaching tasks going.

Learning and teaching tasks will no longer passive, discrete, and bound with static books, time and place.They will be instead eternal (available twenty four hours a day), inclusive, active, fluid, dynamic, developmental, research and problem-solving oriented, collaborative, critical as well creative thinking based, and customized in educational content17.

Wireless communications and schooling will be in the coming few years the tool and way of life for learning-teaching communities. One source has confirmed: In coming years, "wireless (hand machines) will vanish entirely from view, as communication chips are embedded in a host of everyday objects. With such chips and the networks that link them together, communications revolution could yet prove to be the most potent wireless of them all. The wireless is about making digital information about anything available anywhere at almost no cost. No longer tied down by wires and cables. More information about more things will get to the place where it is most valuable. Wireless brings countless benefits. Devices and objects can be monitored or controlled at a distance. Huge amounts of data that were once impossible or too expensive to collect will become the backbone of entirely new services.

Wireless communications should boost productivity just as information technology has"[18].

Wireless as well it's predecessor online courses and schooling will prove especially beneficial to students who need[19]:

- Availability of additional or advanced academic courses which are not offered in public or conventional schools.
- retake courses for graduation;
- Availability of options to courses currently offered in public or conventional schools.
- Access to courses because of physical disabilities.
- Access to efficient human and material services without costly duplication of materials and human resources.
- Achievement of quality control by adopting standards for quality online/wireless teaching and courses.
- Maintaining accountability by means of yearly reports on course content alignment with mandated academic standards, methods of monitoring student and teacher performance, approval of courses by content specialists prior to use, teacher evaluations and survey results, number of students served, courses offered and student success rates.
- Access to credible education since more Online / wireless schools reporting nearly 90 percent successful completion rates, offering a wider range of courses not previously available to many students, and practicing a high degree of collaboration and sharing among them in course offerings.

In the practical side, wireless operating equipments are uncosty and easy to install. A sample of which is briefed in the following[20]:

"Computer

This is the basic equipment, but probably you may need to pick up a new desktop or notebook PC with the latest technology to handle today's software and multimedia needs.

High-Speed Internet Access

Fast and affordable, high-speed Internet access keeps your phone line open to take incoming calls. Plus, multiple family members can be online at once.

Wireless Routers

A router acts as the gateway between your high-speed Internet broadband modem and your home network. Just add a wireless router to access your high-speed Internet connection .

A Wireless PC Card

When you have an older desktop or notebook, an inexpensive PC card may be needed.

Multimedia Networking

Bring all your favorite multimedia out of your PC and into your home without creating a cobweb of cables.

Wireless Keyboards & Mice

Break free from the clutter and inconvenience of wires and cables on your desk. Get a wireless keyboard and mouse and organize your desk the way you want to. "

However, what is disturbing concerning wireless communications via sensory micro chips, is the high risk of privacy invasion of people's life, the work of public as well private institutions. Beside having currently spywares on our computers which invade our personal privacy each second of the day, or viruses softwares which are ruining our computer files and folders for no reason except the urge of abnormal appeals of Internet crooks to fail the life of others; There will be in the future sensory chips which are able via the electronic audio/ visual messages to synchronize with our desktops and satellite TV monitors and record every bit of information concerning the type, time, date, and duration of observing a program or a surfing moment on the Internet.

Even worse yet, if these sensory chips and spywares can have the capacity of recording our normal speech, interactions and photos in our own homes, schools and work settings, and sending them back instantly to security, ill-purpose or commercial third parties. The situation is too paradoxical. However, I am optimistic in that info-tech people who produce invading privacy chips, can also invent encountering devices by which personal privacy could be protected to a highest degree possible.

But the most important fact right now is that the wireless revolution is real and evolving rapidly in every aspect of life and schooling. Harvard University has just launched what they call the "Second Wireless Revolution"[21]: the MIT Project Oxygen. And we believe that who ever from developed, developing, or underdeveloped countries slows down in rhythm, information, skills and utilization of the givens of the wireless revolution in advancing human life generally and schooling

of generations in particular,, will be left behind the "World Civicity", suffering thus for sure from mediocrity forever.

Terminology Problems Related to Schooling in Information Age

Distanced Electronic Schooling in form of on-lane, on-line, or "oxygen wireless" faces two major problems, which are: term consistency and validity; and term technical meaning.

For the first problem: consistency and validity of terms, many terms are in use to mean mostly one thing: indirect electronic schooling. Examples of these are: electronic, virtual, digital, on-line, internet, cyber, computer, information technology based, wireless, or distant schooling. As noticed, the contemporary field of schooling is suffering from multi-confusing, redundant, and inconsistent terms. It is useful in this respect to remind that any pure and applied science is initially based on a fundamental set of academic terms which embody in turn the basic concepts of the concerned field.

It could follow then that using redundant and inconsistent terminology in any field or human endeavor indicates a state of confusion and instability in both professional's understanding and the structural system of the field. It denotes at best the case of uncertainty and/or a field-in-the formation.

To make a short-cut in building a well-established field of on-line/wireless schooling, we urgently call educators, info-technologists, electronicians and digital info- scholars to set together and come up with a unified valid set of terms that could be universally used by school and information technology communities. Professionals thus, will be able to speak one language for communicating and interacting, and

accomplishing agreed upon "edu-info-tech" missions without apparent misunderstanding or diverting to different marginal interests.

For the information technology age in which we live and school ourselves, the Author of this work tentatively recommends adopting the term "on-line schooling" for ten to fifteen years from now, after then the term "wireless schooling" will be a valid norm to intensively use.

Considering the second main problem: technical meaning of terms, it is widely noticed a backward, shortsighted and subjective misunderstanding in using terminologies related to "info- technology schooling", especially of the term "virtual schooling". Online and then wireless schooling are not "assumed reality", implicit or emergent way of schooling. Rather, they represent a new methodology of education which is compatible with the nature and demands of digital information age.

In turn, using conventional schooling in current information age could be named "virtual": that is "assumed reality",, since it is obsolete and never fits the spirit and demands of the contemporary time. Actually, "We are undergoing the most significant change ever experienced in human history"[22]. Information technology which lies in the core of such change can exert important roles in the process of educational change: by opening access for all to a wealth of information, by facilitating the process of education, and by engaging the interest and attention of learners and responding to their individual needs regardless of age, time, other personal conditions[23].

Online and wireless schoolings are real like the air we breathe though we don't see, as the light waves by which we see things, and as the satellite audio/video waves which we receive their encoding-decoding messages each second on radios and TV monitors. Online and

wireless schoolings represent the educational crux of the ongoing information age. They are here to stay and will continue with us for hundreds of thousands or probably millions of years to come.

Obstacles Facing Schooling in the Information Age

Looking at today's schooling in the context of Information Age, one could easily observe five severe dilemmas hampering transforming the paradigm of "old days schooling": analogue-bound text knowledge and basically teaching paradigm into the new one: the digital open-ended knowledge and learning paradigm. We illustrate briefly these obstacles as follows.

1- On-line / wireless schooling skills and the need for intensive training of school personnel.

This is the most fundamental problem that hinders the application and dissemination of on-line / wireless schooling in educational reality, even in the West. While this dilemma is universal, it is however, extremely acute and multiple in developing and under-developed countries more than in the well developed ones. Actually, the possibilities are so dim for these backward environments to pick up the attitudes, will, skills and the rhythm of contemporary informational technologies necessary for the practice of on-line / wireless schooling. The problems facing such countries are profound and multiple in nature to a pessimistic degree that makes achieving required info-technological changes in this respect either impossible or too hard to achieve.

A western educator observed the following[24]: "technology today offers many exciting alternative paths for improving education, but each of these alternatives is not equally good or appropriate for all countries. Rich countries have used technology to make their good education even better. If developing countries were to follow the same path, they would be choosing alternatives that, in addition to being very expensive, require high-quality teachers who are not available and cannot be made available. These experiments are, therefore, doomed to remain enclaves, catering to local elite but incapable of being scaled up to reach the number of people who are in dire need of better instruction".

Regardless of above pessimistic situation, successful teachers, learners and human services of schooling in the Information Age are necessarily in dire need of training in what is considered the working info-technological basics of education. A sample of these operational skills is proposed bellow[25]:

A- FOUNDATION Skills which include:

- Communication Skills: reading, writing, arithmetic and mathematics, speaking, listening and logic.

- Thinking Skills: thinking critically and creatively, making decisions, solving problems, visualizing things in the mind's eye, knowing how to learn, and to reason.

- Personal Qualities: individual responsibility, self-esteem, sociability, self- management, integrity, honesty, imagination, implicit cultural understandings about time, dress, courtesy, money, causality and language, adapt to change, alert to new ideas and fashions, customer

preferences, economic and political changes, ambitious, autonomous, aware of competitive pressures, cultural shifts, benevolence, can both think and do, caring, compassion, courage, courtesy, intelligence, general knowledge, plan strategically, social skills, trustworthiness, truthfulness, well educated and technically trained (post high school education), willingness to constantly upgrade skills, wisdom, worldly, moral responsibility, sound ethical and moral behavior, capacity for self-discipline, a moral and ethical sense of the values, goals, and processes of a free society; standards of personal character and ideas.

B- WORKING SKILLS which include:

- Sources skills: allocating time, money, materials, space, and staff.
- Interpersonal skills: working in teams, teaching others, serving customers, leading, Skills negotiating, and working well with people from culturally diverse backgrounds.
- Information skills: acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information.
- Systems skills: understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems.
- Technology skills: selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.

2- Transforming curricula from analogue to digital designs.

School curricula are in simple direct language, documents of learning, teaching, and assessment. While the curricular content ought to represent the most valid, worthy and contemporary knowledge and activities,, and be highly responsive to individual differences regarding age,, culture,, cognitive ability,, learning style, time and pace, it should fulfill the demand of being" Universal Service with Universal Access"[26]. For curricula to live up to above premises, they should be designed and developed by a highly qualified team of specialists. A sample of them is proposed in following list[27]:

Fundamental team members, they include:

1- Information technology specialists and technicians for digital programming of curricular contents; then uploading and administering materials and online wireless sites.

2- Subject matter specialists for specifying academic knowledge of digital curricula.

3- Educational psychologists to specify: who of students will learn what of the materials, learning and assessment activities,, and curricula based on age, educational backgrounds, language, cognition and intelligence, handicaps, motivation, and achievement goals.

4- A number of concerned students and teachers for approaching ideas, consultation, and "hot house" experimentation regarding the appropriateness of digital materials, activities, and curricula.

Support team members. they include:

These members attend the meetings and workshops which are held by above core team, and provide well informed opinions and facts,

professional services, and possible alternatives which each member's domain of responsibility allows to do so.

- Students' families
- Educational philosophers.
- Historians.
- Sociologists.
- Religion counselors.
- Administrators and support services of online/wireless school centers (which will replace current conventional schooling facilities).
- Technicians of materials and softwares' mass production.
- Ministry of education officials.

3- Copyrightness.

This factor represents an acute dilemma in the fields of publishing and distribution, especially in developing and underdeveloped countries. Many ignorant mediocre persons who are anxious for reaching easy (black) money, set up their petty shops and start confiscating copyrighted books, materials, and softwares by means of photo-copying and distributing, and cashing endless lawless money. And when complaints go to courts, one clearly finds that more judges and officials are extremely corrupted,, and consequently reaches no where!

The Author of this article experienced and still, many corrupted publishers. They take a copy of any scholar work selling 100 copies or more, duplicate it and hand them to ill-minded customers who know most of the time that the process is totally illegal.. but since it costs them less money, they go over with it!

Not only publishers are corrupted in developing and underdeveloped countries,, but one may go through university professors who take literally ideas, paragraphs, pages, chapters and some times the whole book, put their names on it with no reference to the original author or even with feelings of any guilt! .

One dean of a college of education at well known Arabian university asked the Author smiling while meeting in his office more than twenty years ago: "what do you do if some one claims a research study or a book without your knowledge or permission? the Author answered " since God knows that the material is mine and as far he or she is using it for the benefit of students, job and/ or society, the matter is ok with me." In the same topic, a doctoral student (whom the Author never saw before) again from a known university, talked in an informal gathering of some people that "dr. (mentioned his name and whom also never met until this date, during one of his lectures,, attacked you personally, your works, your book: curriculum implementation, 1984 asking us forcefully to avoid reading it"! Then he added: "you know? he and others in the college as well are teaching from your works, and if you go into his office you find more than 50% of his resources are setting in front of him."

I brought up these real stories to explain how much the publishing and copyrightness domains are suffering; and how deeply the two parties (university professors and book/ software publishers) who are assumably more concerned for the issue of copyrightness, are unfortunately negligent, ill-minded and corrupted.

Needless to confirm that many global businesses and law firms and institutions28 are working for some years now on the topic of intellectual property and are issuing more of electronic copyright Acts

by which the flow of businesses and products could be regulated in the Digital Millennium. However, the problem seems unsolvable in many areas on the Globe, since some World environments are still ethically living the moralities of the primitive Stone Age.

The only way to get out of this problematic impasse is to have forceful laws, and ethical political decisions on both national and universal levels to carry out intellectual property laws, and to consider any misconducts in this regard as first degree crimes like the case of treason for which severe punishments are enacted.

4- Plagiarism.

Plagiarism is the eternal misconduct which human race persisted on committing throughout history, despite knowing it is wrong. In schooling, however teachers and administrators try to counteract cheating by students, while these students can always invent new ways to cheat again! It seem impossible to eradicate totally plagiarism out of education. Needless to caution that with the advent of online/wireless schooling, chances are more open for student to cheat, deceit and commit fraud acts in performing learning assignment and achievement assessment. Plagiarism is the "academic plaque" of education on both school and university levels. It drains out the brains' energy of student youth in committing destructive acts for the growth of their personalities, professional future, families, and society at large.

However, there are two striking opposite views concerning the legality of plagiarism in schooling: one for and the another is against. While a number of educators are in favor of plagiarism in the Information Age; arguing that since the basic learning task on the Internet involves: searching and locating information, analyze and evaluate it's validity, then apply and synthesize facts and ideas into

new form of knowledge, thenthere is no urgent need for name referencing.. the most important in the Information Age is information and how to use it for producing new knowledge.

Riegle[29] argues that "The notion (of documenting) the author of an idea is a recent phenomenon. During the Middle Ages, for example, the scribe was more likely to be recorded than the author… In an era of a rapidly expanding global knowledge base, it is more important economically to be able to plagiarize existing elegant solutions than to create your own inelegant solutions… the student who can find, analyze, and display an elegant solution to a task possesses the skills necessary to prosper in the Information Age. Whether the solution is his/her own or someone else's is irrelevant."

Though we are concerned nowadays for information in education, still we believe that the intellectual right of author should be ultimately respected and properly sited. We could change the way we dress or live, but never is right to replace original values and ethics by mediocre, harmful, unjust, or backward ones.

However, the other prevailing group of educators are opposing plagiarism and strongly advocate fighting back students' plagiarism in education. Just for a matter of reminding, we present two sets of techniques to be considered by people who are teaching in schools and universities, both online/wireless or on-ground schooling: Prevention and encountering therapy techniques.

a- Prevention techniques:

These techniques lie in the hands of teachers and professors in schools and universities. This most decisive schooling cadre for the fate generations, families, professional responsibilities, and civic

society,, ought to be highly qualified regardless of their specialties, in: subject matter, moralities and instruction (interaction, methods / techniques including information technologies and assessment).

I believe that the true factor behind students failure in schooling, in areas of underachievement, low motivation, plagiarism, absenteeism, is the teacher or the university professor. Students are mainly receivers of teaching, counseling, assessing and guiding messages, and if teachers are skilled enough in performing these tasks, most students' academic and disciplinary problems could not be observed.

Two Educators confirmed the above belief by stating[30]: "students cheat less (even when attempts to prevent them doing so are scaled down) when they see tasks as worth doing, when they admire their teachers and when they are excited about what they are learning"; and added on another hand:" students cheat because they feel alienated and ignored by lecturers, disengaged by assessment tasks and disrespected by assessment that does not “require original thought ...but rather the reiteration of well established ideas and concepts”. Where students felt the subject had been exhausted, where the assignment had been set year after year, where the lecturer did not seem to value what was being taught, students’ commitment drops and they become “open to cheating”.

Unfortunately, there are in developing and underdeveloped countries many teachers who resemble the above negligent under-qualified type like whom Educators are cautioning against. In this respect, one can easily observe many teachers and professors alike who are working basically for the monthly salary as a first priority, never students or learning; others are academically/professionally

disqualified, and still others are disgracefully morally and behaviorally corrupted.

The Author of this work encountered throughout his thirty two years experience in higher education faculty members who are Western educated and couldn't speak or lecture in English; others who were academically very poor in their narrow specializations to the extent which urged one of them (England graduate) to come to the office before each of his lectures to get (in English) the main facts, terms, instructional steps, and possible questions and due answers; still others used to ask for bribes and personal favors in exchange of grades. While other faculty members were careless and/or unskilled in student assessment and chose to give inflated grades to cover up their instructional failures and neutralize students' dissatisfaction of their work.

A dean of student affairs at an Arab university observed some shortcomings concerning the relationship of "profs." With their students as follows[31]:

1- Keeping aloof from students, discouraging them from meeting with him at his office and discuss any topic related to his course or otherwise.

2- Talking with students "peacocky" from "ivory towers", thus pushing them to maintain a psycho-social distance away from professors.

3- Lacking opportunities for students to discuss exams and research studies and learn more from feedbacks.

4- Flunking students once or twice, building thus negative attitudes and resentments against the professor and the course.

A college of education dean talked to the Author twenty four years ago about several shortcomings found in his college faculty,, and a simple hint to him was that since those "Profs." do harm a lot more than good, you can fire them and delegate their teaching schedules as part time hours to the rest of the faculty. The answer was simply: "the system does not allow this". Another college dean in another developing country asked smiling while meeting in his office" what you think of our faculty?" the Author firmly replied: if it is my decision, at least 50% of them will not be permitted to cross the main gate of the university.

This overly dim pessimistic picture was true. But university administrators don't help too in overcoming this helpless situation. A number of them are routine oriented, professionally disqualified, and subjective. More of them don't appreciate scholars but the personal acquaintances who frequently knock their doors and "rub more their shoulders". or administrators who are simply concerned for keeping their "office chairs" regardless of the quality of "profs", students, and the educational process.

What the above discussion calls for urgently to scaling down students' plagiarism is to have teachers and professors firstly with brain, moralities and personality; and secondly with professionalism. Professional teachers and professors are expected to be highly prepared in subject matter, and skilled in instructional methods, student motivation, learning styles, interaction styles, and educational assessment. It is briefly requires professionally from them to[32]:

1- Shift their teaching-questioning paradigm from remembering simple facts to analysis, evaluation, synthesis, and producing

knowledge. Bloom's Taxonomy, Gagne's and Guilford's models33 could serve well this purpose.

2- Raise the levels and types of students' research from reporting facts and "Other People's Ideas" to discussing critically, Synthesizing and producing new ideas of their own.

3- Emphasize activities which require responses, using: Explanations, problem-solving, decision–making, and questions such as: why, How and Which is best?

4- Focus instruction, learning, activities, and questioning on the most fundamental curricular content to attract attention and motivation of students; then if time allows they could turn to important and useful ones.

5- Use heavily formative instruction, learning, and assessment. Adopt check-point stations throughout students' research and achievement to build more their performances and realize if what is accomplished is really their own.

b- Encountering therapy techniques.

University professors and school teachers can simply use specific internet softwares to uncover students' plagiarism, and hold committed ones accountable for their misconducts. They select a word, a sentence, a paragraph, a figure, a schedule, a chapter or a research report, plug it into an appropriate software, and the results will be displayed on monitors within seconds. A sample of these softwares follow[34]:

Turnitin.com/ This service, is "the world's most widely recognized and trusted resource for helping prevent Internet plagiarism." (Fee-based).

EVE2/ This plagiarism detection software checks students' papers against material on the World Wide Web for instances of plagiarism. (Fee-based)

Jplag/ Software to compare software program language syntax and program structure as well as document texts.

MOSS/ Measure of software similarities among computer programming code. (Free, but requires setting up an account)

iParadigms/ http://www.turnitin.com

Digital Integrity/ http://www.findsame.com

CaNexus/ http://www.CaNexus.com

Wordchecksystems/com: http://www.wordchecksystems.com

CopyCatch.com/ http://www.copycatch.freeserve.co.uk

6- The calamity of multiple illiteracy within world societies, especially in developing countries)

Contemporary societies in general and in developing countries especially, are suffering from three types of illiteracy: traditional (old days) illiteracy in reading, writing and arithmetic; civic illiteracy, and digital information illiteracy. Brief illustrations follow[35].

a- Traditional (old days) illiteracy.

Latest statistics shows that the total number of illiterates who can't read, write and perform normal arithmetic operations in Arab countries is seventy millions (almost 20% of whole population). Forty millions out of them are women[36]. While this pessimistic number indicates the failure of conventional schooling and educational systems to eradicate traditional (old days) illiteracy throughout the last sixty years since Arab

movements of independence, it is looked upon information technology as a safe heaven for what conventional schooling failed to achieve concerning current problem of illiteracy,, since information technology education by means of online/wireless schooling is characterized37 by:

- Providing students with Infinite quantity of information, currency, diversity, highly delivery speed, and overly low price of information.
- Democratic: open in time and place for all regardless of their color, age, sex, work, culture, educational needs, socio-economic status, handicaps, or personal merits.
- High student-information multi-sensory interaction.
- Fast delivery of on-demand student/teacher contact.
- Customized in content, delivery and schedule.

b- Civic illiteracy

Another failure sign of conventional schooling (and the nation states behind it) in developing countries is civic illiteracy: the lack of appropriate social behaviors, understanding of the concept and practice of good citizenship, democracy, and human rights. It seem that conventional schooling in developing countries can teach any "trivial" thing but never paid attention to equip learning generations with the knowledge, attitudes and skills by which they can be civic in their interpersonal relationships and life-work situations. Information technology education and it's off-spring: online/wireless schooling by their diversity in populations, information, and self- interindependent interaction styles; and openness in opinions, time, place and educational opportunities, are expected to breed in generations these civic values and skills.

c- Digital information illiteracy.

A wide gap concerning information technology literacy is existed now between developed and developing countries. Knowledge and skills of computer, the Internet and communication technologies are just examples of the basics of information technology literacy needed to be develop swiftly by generations in developing countries, in order to be able to effectively pursue their learning in current conventional as well as online/wireless schoolings.

The above urgent need for information technology literacy is expressed by Claudio de Moura as follows38:"Technological fluency may stand alongside reading and mathematics as one of the essential skills for a successful life. Word processors become the paper and pencil of the information age. Spreadsheets replace the slide rule of engineers and the calculating machines of office workers. Data bases replace cabinets full of papers. Those unable to operate these new tools are handicapped in the modern world".

Another educator has detailed the literate characteristics and skills of information technology expected from school staff and students,, in the following list39:

- "Invention . School program is dedicated to problem-solving, decision-making, exploration and the creation of new ideas. .
- Fluency. Teachers are becoming comfortable with the need to move back and forth between an array of instructional roles and strategies. .

- Support . The school provides rich and frequent ongoing support for all learners to develop thinking and information skills. .

- Navigation. Learners have the navigation skills to find their way through the new information landscape (as well as the old) with little lost time. .

- Searching . Learners apply logic. They search with appropriate syntax. They employ powerful search engine features to locate pertinent information.

- Prospecting: The first component of information literacy relates to the discovery of relevant information. This prospecting requires navigation skills as well as the ability to sort, sift and select pertinent and reliable data.

- Selection. Learners know how to separate the reliable from the unreliable source. They recognize propaganda, bias and distortion. .

- Questioning. Learners know how and when to employ dozens of different types of questions in the search for understanding and meaning. .

- Planning. Learners possess planning and organizational skills. They sort, sift and store findings to enhance later questioning. They make wise choices from a toolkit of research strategies and resources.

- Interpretation. Learners convert primary sources and raw data into information, and then they proceed further (beyond information) to insights. They translate, infer and apply what they have gathered to the issue at hand.

- DeepThinking.

  Learners combine deep thinking and reading with a wide ranging search for relevant information. This quest for information is but the prelude to the more important work.. solving a problem, creating a new idea, or inventing a product.

- Commitment. All curriculum documents include clear statements regarding the information literacy expectations that are developmentally appropriate for each grade level. The school community persists with the literacy goal over time."

Alternative Action Plans for Implanting Online/Wireless Schooling in Developing Countries

Introducing Online/Wireless Schooling into the educational systems of developing countries require brains, objective scientific planning, persistent tedious work, exceptional human and material resources , and before all a political will and bold decision. In the following paragraphs, we propose a stage action plan designed basically for education in developing countries, then two alternative frameworks are stated as examples of what other environments have done in this respect.

a - A Tentative Action Plan for Implanting Online/Wireless Schooling in Developing Countries. The outlines of this plan appear in four consequent stages as follows.

Stage one (5-10 years): The Foundation-Preparation Period. This stage involves two concurrent main tasks that may be implemented in one or two five year plans, dependent on the financial and educational conditions of the concerned developing country. Schooling in this stage will be mixed: residential and online as appropriate. Here,

residential schooling continues to be a common practice, online schooling is adopted as special educational option by specific schools, classes, group of students and teachers, while wireless schooling is practiced as alternative. However , the two tasks appear as follows:

1- Equipping schools and classrooms with all basic machineries, softwares and materials necessary for launching Online/Wireless Schooling.

2- Intensive training of school communities: teachers, students, administrators, and support services in the fundamental knowledges, values, methods, and skills of the effective use of information technologies in schooling.

Stage two (5-10 years): The transitional period in which schooling transforms from residential and online to wireless. This stage involves the establishment of up-to-date information centers, connected with wireless broadcasting stations which are all interactive with the laptops of teachers, students, administrators, and support services of the school and with other schools' communities. Laptops, depending on the financial conditions of the developing country, could be handed free of charge to school community members, or by low monthly payments. In this stage, residential schooling becomes educational alternative, online schooling is common and wireless schooling is special practice.

Stage three (5-10 years): The experimental period of wireless schooling. Throughout this stage which also may last to 5-10 years, depending on the psychological, behavioral, technical and physical readiness of the educational system of the concerned developing country to move towards enacting wireless schooling as a common practice by learners and teachers. Education will be liberated from school walls into infinity in time, space, diversity and information but

with constant monitoring, assessing, developing, training and retraining whenever deems necessary. Wireless schooling during this stage is practiced as a common methodology, while online will turn to be special and residential schooling as alternative elements.

Stage four: This is an opened-ended period of the field application of wireless schooling, where it becomes a common practice through laws enacted by the educational system with online schooling continues to be a special practice and the use of residential schooling will be reduced to the least minimum.

b- The Korean Action Plan for Implanting Information Technology in Schooling. This plan is presented here as illustrative framework for interested educational systems to see how information technologies could be mindfully and gradually applied in schooling. The plan consists of four stages as follow40:

"1- the Beginning Stage (1970 -1985, 15 years)

In order to prepare the nation for an information technology-based society, vocational high schools started to offer a special course on how to use electronic data processing systems (EDPS) and incorporate TV and radio

broadcasting systems and audio-visual materials in their curricula to improve the quality of education.

2- The Rolling-Out Stage (1986 -1995, 10 years)

As the national IT infrastructure was being constructed and individual PCs became popular, computer education was included as a part of the basic curriculum, and computers became important tools to strengthen the quality of education.

3- The Evolving Stage (1996-2000, 5 years)

Legal and institutional regulations were adjusted and basic infrastructure and information services for the informatization of education were constructed. As a result, the institutional, physical, and human resources necessary for educational reform were built.

4- The Expansion Stage" (2001 onward). The comprehensive and stable application of information technology education is observed here.

c- Western Action Steps for Implanting Information Technology in Schooling. Riegle41 proposes four operational steps to introduce information technologies schooling into the educational system. These appear in the following:

The first step: Purchasing or hiring computers and connecting them to the Internet. It is predicted here that by 2015, a computer may cost $10 while a textbook will cost a lot more (at least in the West).

The second step: Developing an online curriculum. This can be accomplished by using free online materials (currently available at all levels for all subjects) and by using teachers and students to find and develop online materials as part of their workload / assignments.

The third step: Modifying instructional schedules so that teachers have the time to find and develop high quality online materials. This should allow for teachers to train and find/develop online materials; and provide counseling and guidance for students who may need help.

The fourth step: Training educational personnel in information technologies to guarantee more productivity. Free training materials are available online with no cost.

The total cost of above transition steps to an Internet-based education system is expected to be almost zero cost. The transition can be gradual and voluntary so that the disruption to school personnel is minimal.

Forecasting Possibilities of Online/Wireless Schooling in Developing Countries

It is expected generally that online schooling will accelerate in practice as a common methodology of education within Developed countries throughout the next twenty years. Then wireless schooling will pick up the pace and will prevail as a general framework of schooling by the year 2025 and onward.

Developing countries on another hand are anticipated to apply online education up to 2050; by then serious efforts may start experimenting wireless schooling on a large scale. However, underdeveloped failing states who live life basically dependent on foreign aids, are facing many hardships in maintaining the needs of their conventional schooling. Thus, chances to consider one day online/wireless schooling as an educational priority are too slim indeed.

Developing countries are trying hard in many life spheres including education, to get hold of contemporary advances of World civilization. Malaysia, Korea, India, Iran, Turkey, South Africa, Brazil, and some Arabian Gulf States are just examples. However, more of other developing countries seem incapable to realize their destined goals due to failing political systems, extremely corrupted public servants, inability to set up priorities, high rates of illiteracy, man-made civil and interstate wars, much talk and propaganda with less or no actions, multiple poverty and health problems, gross devaluation of human worth, and the high waste of human and natural resources. The

educational scene in such environments looks so dim, hopeless and almost impossible to change for better.

What is pessimistic also concerning developing countries is their slow pace in adopting educational developments. It is observed in this regard that they need 10-15 years to start applying new inventions. By this lapse of time, another new concepts, theories, methods or techniques come into the educational scene; thus educational administrations and institutions in developing countries continue to suffer from a state of educational backwardness and mediocrity in schooling,, and from inability to develop required generations and society for better levels.

Another discouraging fact in regard to the progress of developing countries is the depreciation of intellectual educators and reformers of their own. Public officials either isolate these exceptional intellects by either putting them aside "on the shelf" without work, assigning them to professional responsibilities out of their areas of specializations, or forcing them to self-exile into some other foreign countries. In return, what appear appreciated in schooling arena in developing countries are those who are non-professional, who are close kin or having tribal links, who have personal-beneficial ties with officials, who pay more "under the table", and who are skilled in maneuvering and "rubbing shoulders" more.

Still another dilemma hindering the educational advancement of developing countries, which is the non-reading attitude. Educators in developing countries don't read generally. And if they do, rarely they read by brains and constructive critical thinking; rather by using eyes mostly coupled with negligence and "black attitudes". Thus, they seldom recognize new creative ideas, concepts, or methodologies

presented by their fellow reformers. And when they some times cognize, they cover upon in silence these novelties, or worse yet fight back by personal attacks even during their university lectures! Some real examples of non-reading and attitudinal ignorance are the following samples in tables 1, 2, and 3:

Table 1: Sample of Predicted Electronic developments in Human Cogition[42]

Topics	Predicted Years	Illustrations	Current Status
1- Silicon chips & brain repairs	1986	It was drafted at1984/85 that Sensory computer chips will replace dead or ruined neurons to keep the brain functioning normally.	Experiments in 2004 were performed on implanting a chip in the wrist.The road is still too long for reaching this topic.

Table 2: Sample of Predicted Electronic developments in the Process of Education[43,44]

Topics	Predicted Years	Illustrations	Current Status
1- Production & presentation of ed. Materials by computers	1986	Typing& drawing texts and diagrams by computer & use them in teaching / learning	Realized in powerpoint presentations

2- Production & presentation of ed. geographic maps & Materials by computers & satellites	1986	Using computers & satellite in - Production of ed. geographic maps & Materials, and in learning and teaching	Realized
3- Using electronic boards in learning and teaching	1986	Use of electronic boards in distance & classroom learning and teaching	Realized in form of the electronic blackboard
4- Computersr eplacing overhead projectors	1986	Using computers in audio/visual presentations in conferences & classrooms	Realized in data show machines
5- Computers in learning resource centers	1986	Individual students extensive use of personal computers in distant self-learning, research, psycho, behavioral & academic analyses	Realized by internet & online information centers
6- Close& open circle TV in education	1986	Use of Close& open circle TV in distant learning, instruction & training and in issuing achievement degrees	Realized by open schools & online sites and programs
7- Use of mobile radio in communicati ng with computers	1986	Use of mobile radio in communicating with home, school, & central computers for information	Realized by laptop& wirelesscommu nicating and schooling
8- Computers in learning	1986	Use of computers in electronic learning: individual open, independent & small	Realized by online & wireless and

		interactive groups	schooling
9- Computers in instruction	1986	Use of computers in electronic instruction: electronic boards, powerpoints, research, training, video conferencing & curriculum education	Realized by online & wireless and schooling
10- Educational clinic	1988	It was drafted at1986/87, based on medical clinic model for prescriptive, analytic, and follow up learning & teaching	Not realized Until now
11- Academic cafeterium	1988	It was drafted at1986/87, 10 years before the Internet café	Realized exactl y inform of Internet café 1995/6
12- Clinical online schooling	1988	It was drafted at1986/87, 10 years before the information high way/ Internet	Realized1996e xactly in form of online schooling

Table 3: Sample of Predicted Electronic developments in Educational Services[43]

1- General design & Planning by computers	1986	Entering required/ available data of a topic & ask for alternative Designs & Plans.	Realized recently
2- Design & planning of ed. models	1986	Entering data or sketches & ask the computers for exact ed. models	Realized recently
3- Distant photography	1986	Subjects are far away & photos are taken by a remote camera	Realized by online camera
4- Micro/ pocket computers in		Saving experiments, demonstrations, practical	Realized in laptops

learning & instruction	1986	lessons & present them at any time and place	& digital micro video camera
5- The computer as mobile digital library	1986	Use of computers & peripherals in saving hundreds of books, magazines & newspapers then present them on individuals' monitors to read at any time&place	Realized very recently
6- Electronic photography	1986	Invention of digital photographic machines	Realized very recently
7- The computer as mobile library	1986	Use of computers & peripherals in saving hundreds of books, magazines & newspapers then present them on individuals' monitors to read at any time&place	Realized very recently
8- Self-production/display motion picture machines	1986	Motion picture machines which can record subjects & replay films on micro self monitors	Realized in digital micro video camera
9- Mobile radio in communications	1986	Extensive use of mobile radio in distant daily communications	Realized in mobile telephone machines
10- Thin LCD TV monitors	1986	Thin LCD TV monitors will be available & attached for use any where on home and classroom walls	Realized very recently
11- Satellite TV broadcasting		Satellite TV broadcasting will cover any place on the Globe	Realized recently
12- International		Extensive use of International	Realized

digital communication services	1986	digital communication services at homes, cars, personal brief cases	recently
13-Compact pocket computers	1986	Compact pocket computers will be made & widely used	Realized very recently
14- Computers as storage for school documentations	1986	Use of computers as electronic communication storage for school administrative documents, teacher & students portfolios, school electronic library and bulletin boards	Realized partly in recent days

While the above predicted developments were made in the native language, no attention, needless to say response were observed. Evidently, developing countries have neither time nor interest for development!

However, for developing countries to overcome above shortcomings, to be able to reform and to introduceonline/wireless schooling into their educational syetems, and to resume their roles in the making of World civilization, are expected to:

1- Reform their political systems to have more respect for citizens, the practices of democracy and the welfares of human rights, including the rights for contemporary quality education.

2- Reform their priority system. It is expected in this regard to reconsider the importance of their priorities according to ultimate contributions to the growth of generations, community, institutions, and society. For this, developing countries should shift their current overwhelming priority of buying weaponries for billions of dollars which

never used or can use; then utilizing the saved huge sums of money for the reformation of school systems to be qualified to host online/wireless schooling and other educational innovations.

3- Reform the administrations of their educational systems by simply putting the right qualified professionals in the right positions. Personal acquaintances, bribes, tribal links, and racial or cultural discriminations should be avoided in this respect.

4- Release the use of Internet from current high charges. Providing the service locally for free, or at most for an overly low cost will be encouraging procedure for online/wireless schooling to go ahead.

5- Utilize the high tech knowledge of information technologists and the academic expertise of educators available at local universities and communities, rather than running helplessly for foreign staff whose professional knowledge, skills and attitudes proved to be under most expectations, as direct field inter-experiences had been lived by the Author.

6- Introduce the methodology of online/wireless schooling gradually into the educational system, basing on scientific field studies and objective careful preparation of teachers, students, administrators, curricula, school facilities, equipments and support services. We call here for gradual application of the concepts and practices of online/wireless schooling by starting with some courses required for some classes in some schools within a limited number of educational localities. Then each year within five years experimentation period, specific courses, classes, schools, localities are added until the full implementation of the reformed system of online/wireless schooling is realized.

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