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# Over 68 Years with Mathematics: My Story of Healing from Modern Superstitions and Reclaiming my Sense of Being and Well-being

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*Clarification: Since the 1970s I don't remember writing a single word whose meaning does not have connection to some experience (including my quoting stories told by others). This is in harmony with a conviction that started growing within me since I became aware of my illiterate mother's mathematics, and since I realized that her world formed a "universe" while mine claimed to be "universal". I can't think of a word that has universal meaning. Any word I use in this paper is contextual, and in most cases connected to experiences and actions. This new-found awareness led me to avoid teaching and thinking of mathematics out of context. In this paper, I start from the existential situations that I lived, and speak for myself, and invite others to tanaaqush (the closest meaning in English to tanaaqush in Arabic is: "mutually nurturing dialogue"). I am trying to make sense of my experience by saying honestly how I feel and perceive things. This opens oneself to being confronted. I write especially for young people in Arab countries, but also for youth in general: they have been victims of control, mainly through being constantly measured. In a very true sense, this paper is a statement of confessions.*

## Central Theme of the Paper

Just as we need to detoxify to remove harmful toxic substances from our bodies due to manufactured and processed foods, we need "detoxification" to remove harmful words, ideas, convictions, and perceptions from our minds due to manufactured and processed knowledge. Fasting or cleansing with organic food removes the harmful substances from our bodies toward a healthy one, in the same way that fasting and cleansing harmful toxic words and ideas from our minds leads to understanding

and reclaiming what is in harmony with well-being in relation to thinking. Detoxification of the mind from harmful substances is the central theme of this paper; it is basic to what I refer to as wisdom. Nurturing foods that go into our bodies and ideas that go into our minds will not be as effective if harmful substances and ideas remain within us. Cleansing the body and mind is crucial for healthy digestion and understanding, for our well-being<sup>1</sup>. Digestion for the body is like understanding for the mind. 2-valued logic (every statement is either true or false, everything is either A or not-A, with no third alternative) that governs our thoughts, relationships, and actions is needed in machines and in controlling people, but harmful in helping pluralistic attitudes to flourish. Bush said, “If you’re not with us, you’re against us”; no third alternative. In education, you either succeed or fail; no third alternative. In contests you either win or lose; no third alternative. You are either developed or underdeveloped. On January 20, 1949, President Truman of the United States declared that people outside the US and Western Europe were underdeveloped and that the role of the US and Western Europe is to help us develop. Four-fifths of the world’s population, and thousands of cultures and civilizations, were dumped under one category: underdeveloped, with one solution that fits all: development!

The two active “viruses” that facilitate this harmful process in relation to mind are: believing that people are not equal<sup>2</sup> in intelligence *and* following what is dictated by someone in power without knowing why—and made to feel proud of it! The difference between today’s following what is dictated by someone in power and in earlier times is the fact that in earlier times it was labelled enslavement, whereas in today’s world, we are honored by certificates, jobs, and titles. For example, in studying and teaching mathematics, I was made to believe I was more intelligent than others, and I was rewarded by degrees, jobs, and titles, simply because I followed blindly what was dictated to me by some authority. I was made to feel proud through the praise and gains—which blinded me to see that all that I was doing was following instructions from authority. In other words, I was proud to be enslaved without knowing it! To me, the two viruses combined form the greatest danger we face today because they tear apart our internal immune systems (personal and communal) and defeat us from within. I don’t believe humanity can survive if these two viruses are not confronted. My greatest worry is related to those who are driven with good intentions but infected with these viruses—as I was.

## Military Tanks and Think Tanks

We Palestinians have been living for decades under military occupation of the land, but we seem to be unaware of another occupation: that of the mind. Whereas occupation of the first kind was done via military tanks, the second took place via think tanks. I lived with “bombardments” on four fronts: military-political-economic machinery; knowledge-academic; religious dogma; and make-believe foods—all of them came from Europe and its settlements (mainly the US): the first via soldiers, politicians, and companies; the second via educational “missionaries”; the third via religious missionaries; and the fourth via food industries and corporations. Through them, I lost authenticity, self-rule, and my ability, right, and responsibility to make sense in relation to knowledge, religion, food, and community.

Put differently, my story with mathematics (and education in general) parallels my story with religion, politics, and food. They all embodied the same underlying logic: something claimed to be modern, better, and universal replaced something labelled obsolete, out of date, and local. Such replacements were referred to as progress, development, democracy, catching up, getting ahead, and civilization. I experienced occupation in all of them. I was made to believe that mathematics that came from London was universal; I was convinced that missionary Christianity was better than the local one; Israeli occupation of Palestine was labelled democratic; and I thought canned and packaged foods were best.

My healing from those occupations started with mathematics. It happened first in 1973 through my work with mathematics teachers and students in West Bank schools, then in 1976 when I realized that my illiterate mother knew and practiced mathematics in a way I was not able to do or comprehend. That was the intellectual “earthquake” in my life that shattered illusions and myths; an earthquake that shook the foundations of my academic understanding and liberated me at many levels. I felt emancipated like I never felt before or after.

The other big healing shake-up in my life was in relation to the source of a person’s worth (evaluation) when I read in 1997 Imam Ali’s statement in *Jabiz’s al-Bayaan wa al-Tabyeen*, a book written 1200 years ago (which I will discuss in more detail later). Healing in relation to religion took place through my attempts to reclaim the Palestinian Christ, which again was embedded in my mother’s

behavior and lifestyle. My healing from harmful food was instigated by my younger son Taamer and my wife Carmen, who each and together travelled their learning journeys towards well-being<sup>3</sup>. Healing from military occupation did not happen in the sense of ending it but of taking charge of our lives and managing our affairs—as best we could. It happened within the whole society twice: during the 1970s and in the first *intifada* (uprising) of 1987–91.

In my experience, the four types of occupation were, in essence, replacing something that had roots in life, community, and culture, and that embodied the spirit of regeneration, by something that was lifeless and more like plastic. In this paper, my focus is mainly on the role of words with manufactured meanings in occupying minds, and on the role of rooted words, with rich and diverse meanings, in the healing process.

## Reviewing Education

My first experience with education (of which I am conscious) goes back to when I was 5 years old, when my parents decided to pull me out of the real garden around our house in Jerusalem and put me in kindergarten, believing that to be progress. I rebelled but lost. In my real garden, I learned a lot, including mathematics, without being taught and evaluated; it took place as an inherent biological ability in a real rich environment full of living things; full of joy and aliveness. Pulling me from what is real and putting me in what is artificial and claiming that to be progress was a main experience in my life up through the doctorate level.

Critical thinking is “thinking within context” which means rethinking (in light of experiences, observations, and reflections) what we acquire via traditions and via modern institutions. Reviewing education means to view again, not only what is visible but also, more importantly, what is invisible; to dig into foundations and the underlying logic. This is what I have been doing since 1971, which convinced me that modern education is not about learning but about winning and control. Official education (in particular, the mathematics that I studied and taught for many years) is crucial in this control. Occupation and control at the invisible level happen via words whose meanings do not stem from life but from licensed institutions and

experts, and via measurements along a vertical line, such as through grading, which is degrading. Words that embody inequality are crucial in domination; especially inequality in intelligence. This onslaught on human dignity is accepted as normal. The disease permeates all levels, including ranking universities. A professor is one who professes what has matured in one's life as a result of experiences, reflections, and making sense of it all, and is not ranked along a vertical measure. I always wondered: if Harvard is doing something that is obviously magnificent which people can see, why would it strive to be constantly Number 1?! What does that really mean?

I repeat: official education is not about learning but about control and winning. This has to stop. We cannot continue in a drugged stupor, believing that people's worth can be measured by numbers that are claimed to reflect something real. Corruption of food, drink, soil, air, sea, and relationships that we have today is not the result of ignorance but of design and planning. Until I was in my early twenties I used to eat four raw eggs every day; science<sup>4</sup> was not yet advanced enough to corrupt eggs; now I don't dare eat one such egg!

Since I was 5 years old, I was bombarded by both bombs and words. The first destroyed the world around me; the second, the world inside me. This paper, however, distinguishes between two kinds of words: those whose purpose is to control, distract, and deform; and those that are rich in meaning and are in harmony with living wisely. Words of the first kind need superstitions, and claim to have universal meanings; those of the second kind need to be reclaimed, together with meanings that are contextual and action-related.

## **The British Left Palestine but Left Their Mathematics Behind**

The mathematics textbook I studied at school (after the British left) was printed in London: Durell's "General Arithmetic for Schools". In the preface he wrote, "The character of this book has been determined by the belief that the primary object in the teaching of elementary arithmetic is to secure accuracy. In pure computation, the less a pupil has to think, the more likely is it that mistakes will be avoided." Problem on p. 373: "In a race of 100 yd., A beats B by 10 yd., and beats

C by 13 yd. By how much will B beat C in a race of 120 yd., assuming that A, B, C all run at constant speeds throughout?” The textbook had a chapter on “Shares and Stocks”. Problems I had to solve included: “(1) A man invests 450 pounds in Indian 2% stock at 69. Find, to the nearest penny, how much stock he buys and the income from it. (2) London Brick 8% (1 pound) shares stand at 36s., and Rio Tinto 5% shares stand at 4. Which investment gives the larger yield?” I got full marks on all tests and the teacher praised me in front of the class. I still don’t know the meaning of shares or stocks in an experiential sense; I have never even owned any. What I really learned were tricks to get the answer the teacher expected; I learned mechanical skills with no understanding – and that was labelled “knowledge” and I was labelled “intelligent”! My understanding was an illusion, my knowledge was ideological, and my intelligence was corrupted. I learned that to be successful I needed tricks to fool (unconsciously) not only my teacher but also myself. Praising me for being an intelligent student blinded me from seeing reality. I was praised by people who were deceived as I was while studying. How could I, at age 14, doubt a well-designed textbook printed in London, with a “great” empire behind it! Some may say the textbook I am referring to is old, and things today are much better. In fact, things have become worse. In UNESCO’s Newsletter Oct-Dec 2002, John Daniel (Assistant Director-General for Education) called for “McDonaldization” of education. He wrote, “The Massachusetts Institute of Technology has shown the way by making its own web materials available free. Let’s hope this heralds a worldwide movement to commoditize education for the common good.” As Durell (above) said, “the less a pupil has to think, the more likely is it that mistakes will be avoided.” E-learning is a modern version of treating learning as something ready-made that a person hands down to another.

The British left Palestine but left several things behind which were worse than military occupation, because non-military occupations (of minds, foods, living languages, source of one’s worth, biological abilities, sustainable patterns in living, and mediums of learning and community action that embody the spirit of regeneration) are invisible and make us perceive them as progress. One thing they left behind was mathematics. Luckily, some of our teachers brought their passions to teaching. When, for example, the subject of fractions came up, our mathematics teacher (Yousef Khouri) digressed to tell us in some

detail the inspiring story of why ancient Egyptians invented them. Due to flooding of the Nile, tax officials had to figure out the fraction (in terms of land and time) that was used by peasants; i.e., the invention was connected to justice. We also had as principal Khalil Abu Rayya who was fond of astronomy and created pictures in our imaginations about the universe, such as how mathematics was used to figure out the circumference of the earth in the library of Alexandria. From both, I learned unconsciously (and it appeared later in my work) that mathematics is not lifeless activity consisting of solving technical problems, proving uninteresting theorems, and spreading 2-valued logic, but a means to make sense and see interconnectedness in life. That was what attracted me to study and teach mathematics.

In addition to mathematics, the British left behind the idea of the nation-state (where borders of all kinds were installed in our lands and our minds); the flush toilet which flushes away our precious water and usable excrement; official education which flushes away what is valuable in our civilization and knowledges; banks and trucks which tear apart economic-social fabric; and rigid institutions that replaced social formations that were closer to sustainable patterns of living. We are still paying a high price for what they left behind. However, while we see the harm of military occupation, most people don't see the harm done by other kinds of occupation. I was 30 years old when I started seeing them, especially at the intellectual-perceptual-social level. Ignoring biological abilities (learning and healing), and killing immune systems (concerning our sense of self worth, for example) had devastating effects on us. (It is worth recalling Macaulay's strategy (1835) for Britain to rule India (which was applied in Palestine): despise local cultures; claim English culture is superior; show readiness to "help" people become civilized!).

## **Shattering Myths: "Discovering" my Illiterate Mother's Mathematics**

At the peak of my career as a mathematics teacher/ educator (mid-1970s), I realized for the first time that my illiterate mother was an "illiterate mathematician" (as Richard Noss, Institute of Education, University of London described her after a talk I gave). That

“intellectual earthquake” shattered myths I had acquired in schools and universities. Her story appeared first in my doctoral dissertation, then in Fasheh (1990, 2002). Much of what I have written, spoken about, and done, since then, was inspired by her world. In the mid-1970s, I was head supervisor of mathematics education in West Bank schools, and teaching mathematics at Birzeit and Bethlehem universities, and was recognized as a distinguished mathematics teacher and educator. When I realized (in 1976) that my mother practiced mathematics in a way that was impossible for me to understand and do, her world saved me from many modern superstitions and taught me humility, plurality of knowledge, equality in intelligence, that best learning happens without teaching, that knowledge is action, and that official education tears apart the inner world of people and the social fabric in communities. I realized that her world was harmonious while mine was fragmented.

The purpose of my mathematics was to produce feelings of superiority and inferiority rather than equality, justice, usefulness, and living in harmony with nature. My realization of my mother’s mathematics healed me from the claim that mathematics requires higher intelligence than making a dress, writing a poem, farming a field, raising a child, sailing a boat, playing a drum, making a nutritious meal, or creating a happy home. Cutting a rectangular piece of cloth into pieces and forming a new whole that fits the body of the woman who brought the cloth is what she did for 50 years and was beyond my ability to comprehend. Whereas I studied and taught geometry that consisted of straight lines, triangles, circles, parabolas, etc., my mother made thousands of dresses that fit numerous women, each with her own geometry! Whereas I had to deal with problems and theorems about identical geometric figures, she made thousands of dresses no two of which were identical. She never needed 2-valued logic or the geometric set; all she needed was a measuring tape and a real woman. Whereas my mathematics is dogmatically precise, hers was flexibly precise; whereas my knowledge claims to be universal, hers formed a harmonious universe rooted in life and community. As an academic, I was very much like a merchant and a parrot: I brought readymade words and parroted them to students at a high price. The more such words were connected to the market, control, and power, the higher their price was.

My mind was so colonized that, when I realized my mother’s mathematics, the first thing I thought of was how to teach her what



I know and to find a sort of synthesis between my mathematics and hers. Soon, however, I realized that would have been like putting real flowers with plastic flowers in one vase. In so doing, the plastic flowers would outlive the real ones (just like my mathematics outlived my mother's). Real flowers wilt and die, plastic flowers go on looking the same over time and place; they go on standing straight looking powerful and eternal – just like my mathematics. I lived in the same place under four completely different political systems (British, Jordanian, Israeli, and Palestinian); the mathematics curriculum stayed aloof, it changed only in some insignificant symbols (Fasheh, 1997). If one gets a BA in mathematics in a Palestinian university, s/he is entitled to apply to any university in the world; it is the same worldwide—so shallow, meaningless, and fundamentalist. Just like plastic flowers, my mathematics had no taste, no smell, and did not move with the wind. A million plastic flowers put together for a hundred years can't produce a single plastic flower, whereas one seed of a real flower, after it withers and dies, can generate a million flowers. It is the spirit of regeneration that makes the difference between what is real and alive on the one hand, and what is make-believe on the other. In relation to medium, source of one's worth, and methodology, school mathematics is "frozen"; no matter what happens, it stays the same. We had modern mathematics dumped on us claiming it was different but it remained the same in relation to the aspects I mentioned above.

In short, my mathematics won over my illiterate mother's mathematics by dogma and not because it was superior; it won because of its connection to power wherein control, winning, and greed are governing values. My mathematics created within me feelings of superiority and a sense of pride that rested on falsehoods (such as the ones I mentioned earlier). In this sense, I find that even the word "indigenous" does not describe my mother's knowledge; it would be more accurate to say that her knowledge started from existential situations with attentiveness to details, including what women wanted. Some women brought the German magazine *Burda* and pointed to dresses in it that they wanted my mother to make for them.

One extremely important thing I learned from her was a meaning of identity greater than the identity of the logical principle of identity: the identity between her and what she understood—which is missing in "understanding" as used in universities, since experience is not essential. Without experience we cannot make interpretations.

Without experiencing the world of my mother, I would not have been able to make the interpretations I am making in this paper. Equating knowledge (in the sense of knowing professional terms, technical information, skills, and theories) with understanding (in the sense of identity between the person and what s/he understands) is a serious shortcoming in dominant education. We can certainly extricate and gain insights into nature/reality and into truths about them through manipulative experiments, but that is like squeezing out confessions by torturing someone—both are useful for those in power who want to dominate. What I am advocating here can be labeled a “return”, a return to self that begins with a turning inward. The “insights” I got in relation to my understanding of mathematics did not result from experiments (a darling in modern thinking) but from experiencing and observing my mother’s world. What is interesting is the fact that her understanding was a combination of experience, observation, and experimentation. In contrast, none of these were present in my studying of mathematics; it was mainly symbolic-technical knowledge. We need, however, to realize that we do not understand everything in life through experience. I need more than experience, for example, to understand the harm in foods I eat. But knowing the harm does not necessarily mean it is reflected in behavior. Understanding the harm should mean that knowledge becomes part of my behavior. What was significant in observing my mother’s world was the fact that I did not interfere, which is contrary to the usual purpose of observation: to know, judge, and change what one observes. Although, as I mentioned earlier, I observed and my first reaction was to interfere and try to connect the two kinds of mathematics, I soon realized that my obligation in her case was to preserve the situation the way it was and that my interference to change it would have been an act of violence. In this sense, anyone who gets knowledge (via universities, training programs, etc.) in order to change society is acting violently. Until the 1970s, I worked with the belief that my job was to transmit the knowledge I got to students and bring them to my level. However, the times I felt I was best as a teacher were when I did not have a subject matter that I was required to teach. This happened in various settings since 1971: mathematics and science clubs in schools; the “Mathematics in the Other Direction” course; Tamer Institute for Community Education; Arab Education Forum; working with women in Shufaat Refugee Camp, and with young men and women

in Dheisheh Refugee Camp, and currently with various other groups. When people ask, “What did you teach people in Dheisheh?” I say, “Nothing; that’s why they learned a lot, in freedom, personally and communally.” The most I gave them was not to feel less in the face of high-sounding titles and arrogant attitudes. Anyone who comes with the intention to help you change, I would recommend you ask him to leave or you yourself leave. Any help that is not reciprocal is demeaning.

## **Intuitive Mind, Rational Mind, and Equality of Intelligence**

I learned many things from my mother: first and foremost, I learned from her the beauty of not being right and the freedom I felt as a result. I learned that her intuitive mind was more valuable than my rational mind in the sense that my mind can be replaced while hers cannot; it cannot be created by institutions and scientific ways. Her mind is almost sacred, mine is more like a commodity, a spare part that can be replaced by tens of people through a job advertisement in newspapers. I learned that a main task of my mind is to expose the illusions in much of what I had acquired in the institutional world as well as invite others who, like me, have been drugged by dominant ideologies, to rethink much of what they had acquired. “Equality of intelligence” belongs to the intuitive mind, which is usually buried under modern categories. Nurturing the intuitive mind is what I hope we will stress—as mathematics teachers and educators—in our Portland gathering.

Just think. With very few exceptions, every Arab child (regardless of skin color, gender, religion, or social and economic background) by the age of 2 or 3 speaks Arabic fluently, without textbooks, pedagogy, or evaluation! This is true with any other language; children learn the language at home and in the neighborhood at an early age. All they need is a real, rich, lively, interactive environment. *This fact shatters three myths: the myth of inequality, the myth that learning needs teaching, and the myth that children need to move from the simple to the complex and from one grade to another.* As Palestinians, we don’t have political-social-economic-legal equality; however, we can live and practice

equality in intelligence wherever we are. What is significant about this equality is that we don't demand it; we just practice it. The only obstacle is if we are drugged by inequality. Imagine what would happen if we start treating children in accordance with the faith that they are equal in intelligence and able to learn without teaching! How wonderful, liberating, and energizing that would be! It could be our gift to children around the world who suffer from the myth of inequality, used as the basis for racism<sup>5</sup> and subduing people.

A fundamental challenge that we face in the world today is how to free ourselves from modern myths such as the ones mentioned above. The progress of Western civilization has been at the level of tools, not life. Hardly any aspect in life has improved in essence. Linking technological advancement with human progress deforms us<sup>6</sup>. It was very hard for teachers to accept my saying: "there is no child who is illogical". Schools plant seeds of inequality and powerlessness in children's minds. A basic task of experts is to make the past look backward and out of date. What I mean by "equality in intelligence" is that intelligence is a non-commensurable quality of humans (we can look at it as "mindprints", just like fingerprints, qualities of humans that cannot be compared along vertical scales). It is hard for many to accept what I am saying simply because we have been drugged to perceive modern myths as progress and scientific. Sitting on our behinds for 12 years looking at meaningless words and symbols (on boards, papers, screens), with no action and no context, and calling that learning, has caused much harm. Myths existed in other civilizations but the modern one is the first to measure intelligence, one's worthiness, and a country's development using numbers—and to claim that such measures reflect reality.

## **The Flush Toilet as an Embodiment of Modernity**

Western civilization is the first to refer to itself as modern. Civilizations prior to the European one were given names (such as Indian), not adjectives. By calling it modern it was automatically given a universal status, making prior civilizations termed traditional, old and obsolete. Those who refuse such dichotomy were accused of

wanting to stay behind. The mind can easily be deceived by equating invention of tools with human progress. If we compare what we have gained and what we lost from sciences, the losses are much greater. I will use the flush toilet to illustrate. No doubt, it is a great scientific invention but devoid of wisdom. It flushes away precious and scarce water, excrement that should go back to the soil and pollutes the environment. We lose all that in order for the toilet to look clean! It is absurd, and in a place like Palestine, criminal. The flush toilet is not in harmony with the cycle of life and the spirit of regeneration. For those who ask about alternatives, I say there are many, but kept out of awareness because until now companies didn't make money from them. I first experienced a latrine toilet for ten days in Gustavo Esteva's home in Oaxaca, Mexico in 2001 (I didn't use water, there was no odor, and nutrients that were taken from the soil go back to it. It is called a "dry latrine"). Laziness and obsession with looks make us admire the flush toilet but remain blind to its disastrous consequences. This is similar to what modern education does: it flushes away useful rooted knowledge and sustainable lifestyles, and it flushes away wisdom as a guide to thought and action. The flush toilet is an excellent example in showing the difference between science and wisdom, and that science without wisdom is like a blind driver; he can go very fast but disaster awaits at the end. The role of mathematics here is similar to how girls in 7th grade (at Shufaat Refugee Camp schools where there were 4,000 students) used mathematics to figure out how much water is used daily. If each student used the toilet once, it meant about 40,000 liters of water were used daily by the 4,000 students!

## **Wisdom: The Core Idea in a Vision that Embodies Healing and Nurturing**

A serious imbalance in life started when wisdom was locked in and the mind was put on the throne: the mind can "sail" very fast without a compass, and the compass of the mind is wisdom. Without wisdom as a companion, the mind can create tremendous dangers and crises such as the ones we live today. We harm nature (perhaps beyond ability to heal); we pollute human beings (body, mind, soul, and perception);

we tear apart social-spiritual fabric (requiring huge communal effort to be re-woven). An important aspect of wisdom is asking about consequences of what we intend to do and to refrain from doing it if it harms the 7th generation (as American Indians' wisdom expresses it). We need to do this in relation to teaching mathematics. Another crucial aspect of wisdom is being open to be confronted, the opposite of being arrogant which seems to be part of elite fields and institutions. In 1997, I established the Arab Education Forum at Harvard's Center for Middle Eastern Studies and directed it for 10 years. A main concern of mine was to reclaim wisdom in life, and learning in particular. I explored the idea in various ways and settings, including how mathematics and Arabic can help in this regard.

For more than 40 years, a main concern of mine has been the role of dominant words and beliefs in contributing to corruptions, problems, and crises that we live with today and, at the same time, searching for and reclaiming words that can heal us from modern myths.

The first time I was confronted and forced to rethink and heal from dominant harmful viruses was, as I said before, when I realized my mother's mathematics. Thus, when I hear phrases such as "marginalized people" and "empowerment of women", I say: look, it was my illiterate mother who empowered *me* (with a doctorate from Harvard) rather than the other way round! In addition, she didn't blindly follow instructions but embodied what Gandhi referred to as self-rule. In this sense, I was marginalized from life and needed the shelter of some institution. What is needed today is awakening, not development; protection, not progress; healing, not advancement; sharpening meanings, not parroting professional and academic categories. I want to stress again that a most important aspect of learning is confronting one's beliefs, convictions, habits, while doubting experts and professionals. Dialogue within a *muthanna* relationship (which I will soon explain) has been in my experience the best way to understand and confront the self. My mother (with whom I had the longest *muthanna*) taught me without words that it is not possible to understand myself and assimilate that understanding from my own perspective alone; I need a "you" in a *muthanna* relationship to do that. My relationships with my wife and younger son were *muthannas* that helped me confront myths in more than one field.

## Healing from Feeling Proud to be Enslaved and from Enslaving Others

Believing people are equal in intelligence can be a remedy for many ills: social, political, and psychological at personal and communal levels. However, a serious question is raised here: why is it then so easy to deceive the mind? I was increasingly convinced that the explanation lies in three factors: absence of wisdom; use of words whose meanings do not stem from life and do not form images in imaginations (termed plastic words by Poerksen (1995)); and our salaries which depend on our willingness to be deceived. It is very possible that a teacher teaches for 20 years a subject he never uses in life, and doesn't have a personal reason for teaching it! It is a most worrying modern aspect. (I hope we will discuss this issue in MES8).

A person who follows a path outside what is permissible by academic authorities (which could be connected to political-economic powers) will be punished, which may take the form of belittling what he does, and may lead to expulsion, claiming (s)he is not scholarly enough (Cornel West, Ward Churchill, and Eileen del Rios are examples of what I am talking about here). There is no justification for not having room in educational centers to learn in freedom. For the past seven years I have been trying to convince at least one Palestinian university to allow 10 students who want to learn in accordance with the spirit of the House of Wisdom in Baghdad; I haven't succeeded yet, but will go on trying.

## Rooted Words as Medium to Heal from Modern Myths and Superstitions

Where can we look for hope when a large portion of people in the world feels proud to be enslaved? Luckily, we don't need verbal empires to deal with academic empires. A thousand years ago, *An-Naffari* in Baghdad wrote, "The wider the vision, the fewer the words needed to express it." The vision I suggest is "equality in intelligence"<sup>7</sup> using 2 words associated with mathematics—equality and intelligence—in a way that is harmonious with dignity and well-being. Believing in

inequality infects minds and relationships and justifies ills such as injustice. In contrast, believing in equality of intelligence can help in outwitting engines of domination. One can use stories as a means for healing, but since this requires a full paper to be devoted to it, I will only elaborate on three words. My hope in healing from modern myths lies in these three words that became flushed away in history, and rarely, if ever, are used anymore: *mujaawarah*, *yuhseen*, and *muth-anna*. I will elaborate on how the three words can contribute to what I am talking about here.

## Mujaawarah

*Mujaawarah* refers to any group of people who freely decide to meet regularly and start from the existential situation where they happen to be, with no internal or external authority, in their quest to learn, understand, and act. A basic aspect in *mujaawarah* is both personal and communal freedom to learn and act—in harmony with wellbeing and wisdom. This was true about great centers of learning throughout history: the libraries of Alexandria, Gundeshapur, and Cordoba, and House of Wisdom in Baghdad. *Mujaawarah* cannot be used as a model as each *mujaawarah* grows in accordance with its inner dynamics, and interaction with its surroundings. I used it first during the 1970s (without using the word) starting with the voluntary work movement in the West Bank and “mathematics and science clubs”. Then I used it at Tamer Institute for Community Education (which I established during the first Palestinian *intifada*), and then with the Arab Education Forum (which I established within Harvard’s Center for Middle Eastern Studies). I use it today with various groups and settings.

I want to elaborate on “neighborhood committees” that sprang up spontaneously during the first *intifada* as manifestation of *mujaawarah*. I will focus on how Israel reacted. Whereas Israel did not mind our holding conferences condemning closure of educational institutions and demanding their re-opening, it was harsh on neighborhood committees. It took me a while to figure out why communal farming and learning are more dangerous than international conferences. The only explanation that made sense to me was the medium. Whereas licensed individuals and organizations formed the medium of conferences, the medium in neighborhood committees consisted



of people who thought and acted in freedom, with attentiveness to surroundings and to what they could do with what they have. I wrote an article entitled “Freedom of Thought and Expression or Freeing Thought and Expression?” The deeper freedom is one that frees our thinking and expression from dominant discourse.

*Mujaawarahs* that took the form of “mathematics and science clubs” in schools were the medium of learning mathematics and science. They started towards the end of 1973, where every student who wished to be in them, came with a question he wanted to explore. They met every Thursday and flourished until the Israeli military officer of education banned them in 1976. There was no curriculum and no evaluation; every person is both a student and a teacher. Personally and communally they learned about mathematics in freedom and in context.

A third example of *mujaawarah* worth mentioning is the courtyard around *Aqsa* Mosque in Jerusalem which was for 1400 years (until British occupation of Palestine in 1917) a commons, a place where people from all backgrounds, religions, and denominations met and conversed freely, and where children played together. It is worth mentioning here a story told by Wasif Jouhariyyah, a Palestinian who lived in Jerusalem under the Ottoman rule and then under British occupation, who wrote his memoirs under both periods. He mentions that one of the first regulations the British imposed in Jerusalem was in relation to entering the Mosque’s yard. They assigned days for Muslims, others for Christians, and still others for Jews—claiming they wanted to be sure that all parties got their rights! The spirit of *mujaawarah* (which characterized gatherings in the yard before British occupation) was replaced by *muhaawarah* (debate). That seemingly innocent rule contributed to sectarianism and divide and rule—very typical of the British.

## Yuhsen

Imam Ali’s statement, “the worth of a person is what s/he *yuhsen*” with the various meanings of *yuhsen* in Arabic (what the person does well, useful, beautiful, respectful, and giving) is what I suggest as a basis for a person’s worth. I first read the statement in 1997, when I established the Arab Education Forum within Harvard’s Center for Middle Eastern Studies. I read it in *Aljabiz*’ book “*Albayan*

*wa-Attabyeen*” (written 1200 years ago); I don’t remember any statement that had as profound an impact on me. According to it, a person’s worth is not judged by professional committees and measurements that claim to be objective and universal, but by the five meanings embedded in the word *yuhseen*. The five meanings embody plurality, humility, contextual thinking, and reflection on the interconnectedness in life. According to it, every person naturally has worth, which is incomparable with that of others’. My mother’s worth was clear, in this sense: she made clothes that fit women to their satisfaction, and what she did was beautiful, useful, giving, and respectful. In contrast, I was deprived of such a rich and wise sense of worth. My teaching of mathematics was well done, but the other attributes were not essential; it was mainly a tool of power and control. My worth was shallow and connected to licensed institutions and professionals. Whereas a person’s worth in dominant practice is given by a number, one’s worth in *yuhseen* is given through relations and through interconnectedness of five dimensions.

Most probably, the way Imam Ali arrived at his wise principle lies in the fact that he abstracted it (a mathematical ability) from what he saw in various communities and cultures that he interacted with. He constantly travelled between Arabia and Iraq, meeting people from Iran, India, and other regions. He probably saw that it didn’t make any sense to think of the worth of people in only one way; every person’s “worth” is contextual, connected to action, and in relation to the people around. Naturally, his concept of the worth of people was pluralistic. A basic human right (which is not included in the Universal Declaration) is for people to be protected from being measured along vertical lines that claim to be universal. Imam Ali’s statement provides an alternative. Unlike a vertical measurement, such as in grades, *yuhseen* embodies diverse pluralistic meanings for a person’s worth. And instead of official committees who judge students without knowing them, the reference in *yuhseen* is a combination of one’s performance in action, and one’s relation to who and what is around; that is, instead of abstract numbers, the basis in *yuhseen* consists of actions and relationships. Instead of parroting ready answers, one’s worth in *yuhseen* is related to reciprocal relationships. Instead of competition, it is harmony that is basic. Instead of focusing on technical skills, information and so on, in *yuhseen* we start with what one does with passion, nurturing and enriching it.

## Muthanna

*Muthanna* forms a good part of the grammatical structure and inner logic of Arabic (it has no synonym in any European language, except for ancient Greek). It reflects the richness that exists in every culture and, at the same time, shows the limitation of cultures. There is no culture that can encompass the totality of experience or have universal claims about life.

I first realized the logic and beauty of *muthanna* when I was invited to participate in a UNESCO conference (May, 2007) on intercultural dialogue. The concept paper UNESCO sent had this in it: “a very old philosophical debate [is] the relationship between the One and the Many”. When I read it I thought, “I don’t remember that I ever experienced being one or many; I always feel that I am made of *muthannas*”. *Muthanna* refers to a relation between two persons that becomes very important in the lives of both, and yet has a life of its own. It is neither legal nor intellectual nor economic nor social; it develops freely between the two. It is neither a couple nor dual—although the latter is usually used to refer to it. *Muthanna* does not perceive the other as non-I or as a person that is a copy of I, or a higher synthesis with I. Each person remains who s/he is, but a relation develops that becomes important to both. In this sense, it embodies a logic that is different from that of Aristotle and Hegel. It is also different from the logic of Descartes who said “I think, therefore I am.” In the logic of *muthanna*, “You are, therefore I am”—my existence depends on my relation with you. That’s why I believe that without *muthanna*, it is difficult to develop a healthy pluralistic attitude in living. This explains why a person like Samuel Huntington (1996, 2004) oscillates between conflict and integration; the limitation in his mind is due to the lack of *muthanna* in his language.

Instead of the “either... or...” logic, in *muthanna* the closest in mathematical symbolism would be  $1 + 1 = 3$ : person A, person B, and the relation (as a third creature).

In short, then, *mujawwarahs* are an alternative to controlling institutions; *yuhsen* is the alternative to degrading evaluation; and *muthanna* forms a relationship with a *you* rather than with “the other”. In addition, the dominant logic in mathematics (every statement is true or false) should give way to other perceptions. We already have in our region, some 700 years ago, a statement by *Jalaluddin Rumi*, “Beyond

right and wrong there is a field; I will meet you there". I hope that in Portland, we will meet— at least part of the time—in such a field. The three reclaimed archaic Arabic words and *Rumi's* statement are in harmony with "equality in intelligence", learning without teaching, the belief that a person's worth is incommensurable with that of others, personal and communal freedom and responsibility to learn, and the spirit of regeneration. They are crucial in liberating people from modern illusions. When a body gets sick, the healthy part rushes to start the process of healing. Without the healthy part, physicians and medicines can do little. Similarly, in order for societies to heal, we need to build on what is healthy in us. The three words and Rumi's statement form part of what is healthy in Arab culture. Revealing the beauty in Arab culture and inviting others to reveal the beauty in theirs can create a meaningful shift in our teaching of mathematics. However, there is a word of caution: what I am advocating here cannot be accomplished by force or at once. Dominant systems are entrenched deeply and for too long; we cannot fight them directly. Most of us today need to live two lives: one in the dominant world, the other in harmony with well-being and one's passion. I suggest to keep nurturing the second: use *mujaawarahs* as much as possible (rather than teams, committee, or classrooms); ask friends and children (starting with oneself): what do I/you do with passion and want to *yuhsen*? (rather than: what are you studying or doing?); and stress *muthannas* as the underlying logic in relations.

## **Mathematics, Society, and Politics: Concrete Experiences and Experiments**

In this section, I would like to mention diverse examples of personal experiences concerning the relation between mathematics and society.

Mathematics as a medium of emancipation: The state of the world compels us to stop teaching mathematics as if we are living in fairyland. We are living in a world (designed by Francis Bacon among others) that is subdued by science and mathematics. These fields (in their present form) are corrupting both physical and human natures. We cannot talk about pluralism in living and keep 2-valued logic on a vertical line dominating our sense of a person's worth and intelligence,

and of the level of development of one's society. Corruption of minds paves the way for corruption in other aspects. The following are two examples using mathematics in emancipation (of self and students) during the 1970s. I already mentioned "mathematics and science clubs" as a way for such emancipation. The second example took place in 1979 when I introduced a course at Birzeit University for first-year science students entitled "Mathematics in the Other Direction" which I designed as a result of working with West Bank schools for five years and building it on what was ignored in mathematics (David Henderson, Cornell University, who was a visiting scholar at Birzeit University, taught the course). The essence of the course was noticing patterns, similarities, and the logic underlying different phenomena. I will mention two incidents to clarify. In one class, while we were talking about the logic underlying different phenomena, one student asked, "Isn't the logic of 'divide and rule' the one that underlies grading in schools?" I said, "Of course. I never thought of it this way but, yes, it is." The second incident: a student who was taking the course with me in 1980 was jailed by the Israelis for two months. When released, he came to ask how I was going to handle his absence in relation to the course. He started by telling me about his experience in jail. He said something fascinating: after interrogation, he was put with other political prisoners in a big room. Inspired by the course, he went around asking what the questions were during interrogation. He found that although the questions differed from one person to another, yet there was an underlying pattern to all interrogations. He put it in writing, and distributed it just in case students got arrested, to make them aware of the logic that underlies interrogations! After he said that, I told him I never thought the course would have meaning in that context; he did not have to do anything more for the course; his knowledge was manifested in action.

Another example from the 1970s was this: I would go around and ask children questions, such as: what is a point? The most fascinating answer I got was from a 7-year old girl: "a circle without a hole"! My first thought was she did not understand my question. Then I realized her amazing dynamic imagination: when a circle gets smaller and smaller, it eventually becomes a point when the hole disappears!

To help in emancipation, I do believe that we need to avoid teaching mathematics without context, so instead of textbooks, we will have "context-books"—at least during the first 6 grades, and let children

know that the world is interconnected. The Islamic calendar is connected to the moon; watching it over a period of time, and making sense of it, would help connect various aspects: mathematics, religion, geography, astronomy, and the calendar.

Useful knowledge: In 1967, I was teaching mathematics at Birzeit College in the West Bank. I lost my job as a result of the Israel-Arab war. Schools and universities were shut down. I realized the striking difference between my knowledge and my mother's. I needed an institution to hire me; outside of them, no one needed my mathematics. In contrast, my mother's knowledge was useful under all circumstances; yet, it was neither recognized nor appreciated in academia. In general, we teach in mathematics how to solve problems we don't have, not problems we live. For instance, we don't talk about how to use mathematics to unplug ourselves from the consumption pattern in living. During the first *intifada* I worked with groups of young people. I asked them to keep a detailed record of what their families bought that month, and how much of that was not needed. Most came back with the finding that at least 70% of what they bought they could have lived without.

Plastic Words (see above): The language used today contains more "plastic" words than ever before. If we choose for example the following four widely-used words: education, development, strategy, and planning, we notice that they behave like algebraic symbols  $x$ ,  $y$ ,  $z$ , and  $w$ , in the sense that we can put them in any arrangement and they appear to make sense! Expressions include: developing strategy for educational planning; planning strategy for educational development; strategic planning for educational development; strategic development in planning for education. We can form more such expressions using the four words. When reading such expressions, many get the feeling they don't understand them because they need professionals to explain them—just like students who think they are not good in mathematics because they are not smart enough. The truth may lie in that their minds refuse to accept symbols that don't create images in the imagination.

Being lucky: Although my life as Palestinian was full of destructions, forced movements, fragmentation, and being confined within borders, I still consider myself lucky in crucial respects: I lived most of my life without a nation-state and in the pre-development age; and the teacher I learned from most was an illiterate woman. I was

lucky because these aspects provided me with a worldview not attainable via institutions and professionals. I had to constantly rethink the meanings of words; I had to be responsible for doing what was needed to be done; and I learned how to live with what was available. Those aspects gave us energy, purpose, responsibility, meaning, aliveness, and inner strengths. I also feel fortunate because Arabic is the language I grew up with. I especially realized these blessings after 1993, when the World Bank was allowed to enter our society and create illusions in our life: a make-believe state, national curriculum, national banks, and national security forces. We lost living with hope and started living with expectations, and we lost living as *abaali* (where relationships among us were the most basic) and started living as citizens identified by national numbers connected to official institutions.

Meaning of values: In 10th grade, I had a classmate (Sami Haddadeen, who still lives in Amman, Jordan). We were close friends and we oscillated between being the first and second highest grades in our class. Some semesters he would be first, and others I would be. We did not think of that as important until one day a teacher said: "Let's see who will be first this semester". We felt uncomfortable but didn't know how to respond. We were too shy to tell the teacher that his comment was poisoning our friendship. Our friendship was most valuable to us and we didn't want anything to ruin it. Finally, we thought of something. We decided that I would put his name on my exam papers and he would put my name on his. We felt that method would be the best way to protect our friendship. One day, a teacher noticed it and told us we were cheating. We said we preferred to cheat in relation to our names rather than to our friendship. We were rebelling in an innocent way against competition. Measuring a person's worth by a number is a very effective tool in controlling behavior and relationships by shattering our inner worlds and tearing apart the social fabric among us.

The Arab Education Forum (which I established at Harvard's Center for Middle Eastern Studies). During the ten years at Harvard (1997-2007) I visited 29 countries and worked with various individuals, groups, and universities. Nothing made me worry about the future of humanity as much as with what is going on in academia. We academicians form a most timid and rigid group. In addition, we are fundamentalists believing that there is a single universal undifferentiated path for learning and progress. Life is looked at as applications of

our ideas and theories. Universities as places that have resources and environments where people who do useful things in life go to deepen and enrich their understanding of what they do are rare. They stress research rather than what a person searches for in life. *Ibn Arabi* 700 years ago said “you are what you search for”. Most of the research I did in my life was related to what I was searching for, some of which was for words, mediums, and sources of strength in us that are in harmony with wisdom. We have one word *babth* in Arabic for search and research; in life, the two are intermingled.

In my work at Harvard, it was Roger Owen, Director of the Center, who provided the space for me to do much of what I did in the 10 years I spent there. It is rare for an academic to see the importance of working within a vision rather than with goals. Owen is rare in the sense that he lives not only the title but also the meaning of the word “professor”: professing what he believes deep within him. Providing such space should be a main role of universities.

## Final Remarks

There is no way to learn how to sail a boat other than by sailing one; it is the same with singing, swimming, cooking, driving, and climbing a tree. It is true in every aspect of life except in education where action and context are absent! Ending the tyranny of a single universal path for progress and learning is crucial to human survival; it should be looked at as one way, not the only or best. We need to reclaim part of the educational budget and use it in diverse mediums and settings.

I never tell anyone not to seek a traditional degree if one’s life depends on having one. What I am stressing here is to care about other paths which are crucial in living.

As I mentioned earlier, I say here what I feel deep inside and, at the same time, I am ready to be confronted. We can’t afford to go on living with illusions. I would label what I am writing here as “innocent”: I still look at life as interconnected, not fragmented and specialized; I still believe that people are equal in intelligence; I believe in *yuhseen*, not in smartness or excellence; and I believe in harmony, not perfection. Like a child, I cannot separate myself from my experience. My thinking, actions, understanding, and forms of expressions are intertwined and interconnected in a harmonious mix. I don’t believe



in universal meanings and solutions, but I do believe in universal interconnectedness.

Much of what I said in this paper (as I have already mentioned) is linked to the Arab culture. I would like to stress again that if a society gets sick, what is healthy in it is crucial in healing it. Words and statements that I mentioned are part of our sources of inner strength. Reclaiming them in our daily living reveals the beauty in Arab culture and invites others to reveal the beauty in theirs.

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## Notes

1. In 2006, an Iranian friend sent me the following, said by an Imam more than 1000 years ago: “O God, pull me out of the darkness of illusion and bless me with the light of understanding”. What is interesting about it is that pulling a person out of illusions should accompany being blessed with the light of understanding. It is similar to getting rid of toxic substances in food to ensure healthy assimilation and digestion and to getting rid of harmful meanings and perceptions to ensure understanding. It is also interesting because it does not differentiate between educated and non-educated, literate and illiterate, but between one who lives with illusions and one who lives with understanding—it is possible for a person to have three PhDs and still live with illusions. How true the statement is today, where we live illusions in most fields: that the food we eat nurtures; mass media tell the truth; medicines heal; and courts do justice.

2. I decided to choose the word “equal” in “equal in intelligence” to bring out a meaning (of this widely used word) that is radically different from the mathematical meaning where it is usually used in relation to some measure. I am using it in the sense that

intelligences of people are equal in the fact that they cannot be measured! Mathematics cannot be used to measure intelligence without corrupting our perception and conception of it. What I mean by “equality in intelligence” is that intelligence is a non-commensurable quality of humans. We can look at it as a “mindprint” just like fingerprint, qualities of humans that cannot be compared along vertical scales; each is uniquely complete. Thus, no one has the right or authority to judge and measure the intelligence of another; such a person should be questioned. This is also true in relation to a person’s worth in the sense that it cannot be measured along a vertical line (which unfortunately is widely done under the name “evaluation”). For a different conception of a person’s worth see the discussion above about what a person *yubsen*—which cannot be compared; the worth of every person is unique.

3. My son, who at age 9 left school for 3 years, travelled for his learning journey on his own. Eventually, his focus revolved around providing raw organic vegan and vegetarian food through a small take-away restaurant in Taos, NM, and my wife accompanied him in his journey towards well-being.

4. I am against dominant science and dominant mathematics not in relation to their content but rather in relation to the medium they use and the basis on which they make their judgments. It is the practice that licensed professional and institutions have the authority to decide what is mathematics and what is not, what is science and what is not, and whether A is more intelligent than B. What I am against is giving such authority to a person or institution. No school or university would acknowledge that what my mother was doing is mathematics. My mother used a sewing machine made in the west, an invention of science. However, self-rule was her medium and the basis of her decisions and work; she only needed to enter into free mutually respectful agreements with women who came with pieces of cloth, seeking her to make dresses for them. There was no authority outside them that they needed to get their approval. The medium she used in her learning was *mujaawarab*; the medium she used in her dealing with women was mutual understanding... My medium was textbooks, licensed authorities, etc. In the science and mathematics clubs which I encouraged students to form, the medium was

*mujaawarabs* and staring with questions each of them had and which stemmed from experiences, experiments, and living. There was no dogma of any sort, no authority to tell them what to do or not to do. What is good about science? My problem in relation to this question is what we ignore; we ignore for example to ask: what do we lose from what we gain? We know that we gain a lot by using a mobile phone or a computer but we need to contemplate about what we lose and how to avoid, or at least lessen, the loss or harm. Is it possible to do what we want to do without such loss or harm? The medium here is crucial. What I am saying is that we cannot afford to go on teaching and doing science and mathematics without relating it to context, action, and consequences.

5. At the peak of the civil rights movement in the United States (1960s), Jensen (1969) of Berkeley University published a study that asserted that black peoples are intellectually inferior! It was published in the Harvard Educational Review—a good example of collaboration of top scholars and academic institutions, using “scientific” methods... all to show that black peoples are—genetically—intellectually inferior!

6. When a situation requires knowledge of tools, however, I definitely would seek someone well-versed in modern knowledge and science. For example, if I get a problem with my appendix or need a surgery in my eye, I would seek a physician who knows how to use modern tools. But if I seek well-being, I would look somewhere else, seek a wise person for example. Remember: we have a Ministry of Health in all countries but not a Ministry of Well-being; Schools of Health but not Schools of Well-being.

7. In my interactions with people, I keep stressing—both in my words and my work—that my dream revolves around that every child in Palestine should be free from the onslaught of the most dangerous inequality: labelled inequality in intelligence. I believe in equality in intelligence not as a result of proof but as a faith that guides my actions and interactions. Otherwise, I would accept and justify harm done to children in the name of being less intelligent. Believing in such equality necessarily puts the burden on us (as parents and educators) to search for why a certain child is having difficulty in living

in harmony with life; it also compels us to reclaim a most fundamental aspect in living: a pluralistic attitude.

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