REVIEW

Perspectives in Medical Education
4. A "global" dimension to reform at Keio University

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(Received for publication on July 18, 2006)
(Accepted for publication on December 21, 2006)

Abstract. Keio University School of Medicine is awakening to the realization that it will achieve international recognition as a center of excellence in medical education and healthcare only by inculcating clinical skills and critical thinking in its medical graduates. A new "global" perspective identifies the traditional failure of Japanese medical education to provide its graduates with clinical skills training as the root cause of a number of deficiencies. These include (i) the reluctance of Japanese medical graduates to seek global experience; (ii) the absence of interest in the global healthcare marketplace for Japanese medical graduates as potential recruits; (iii) the failure to incorporate globally accepted innovations, like problem-based learning, in Japanese medical education; (iv) the failure to follow globally accepted standards of clinical practice in Japan; (v) the lack of instruction in general internal medicine in Japan; and (vi) the neglect of evidence-based medicine in Japanese healthcare practice. Keio University is embarking on an ambitious effort that commits both the will and resources necessary to reform medical education at Keio in accordance with global norms. The initiatives currently underway include (i) incorporating PBL into the curriculum to foster active learning, (ii) implementing measures to promote interactive teaching techniques among the faculty, and (iii) granting recognition to teachers through new promotion policies. Wider implementation of these initiatives across the country will enable Japanese healthcare and Japanese physicians to occupy their rightful place of respect in the global healthcare market, comparable to the widespread international recognition given to Japanese medical researchers. (Keio J Med 56 (1) : 1–13, March 2007)

Key words: Japanese medical education, problem based learning, clinical skills training, Japanese healthcare system, global health care

Introduction

The problems in Japanese medical education, and their solutions, are the focus of this ongoing series of reflective articles based on my personal observations of the state of teaching and learning in Japan. The first paper in the series dealt with the nature and consequences of the pervasive dysfunction in the Japanese system of medical education, insofar as it is exemplified by the conditions at Keio University School of Medicine in Tokyo, one of the premier medical institutions in Japan.[1] The second paper focused on a highly subjective set of recommendations for reforming the system at Keio that are both practical and realistic in their applicability.[2] The third paper provided a detailed and fact-based justification for the urgent and critical necessity for reform, in order to buttress support for the effort of the reformers, who face a very determined, but understandable, reluctance to change a system that can justifiably claim credit for the success of healthcare in Japan.[3]

It is not my purpose in this, the fourth paper in the series, to belabor, yet again, the points made in the three earlier papers with regard to the problems in the system, their solutions, or the imperatives for reform. In this paper, I intend to detail the progress that is being made in reforming medical education at Keio. Of necessity, my

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observations continue to be highly subjective and limited only to those aspects that I have had an opportunity to personally experience. Notwithstanding that caveat, the observations do have broad relevance because they are based on repetitive experience. It makes the changes I have witnessed not only meaningful, but also consequential, rather than the mere window-dressing that doomed earlier efforts at reform in Japan. It is necessary to state that fact, because the changes are not easily recognized without the experience, the interest, and the understanding necessary to look past the glaring problems that overwhelm the first-time observer.

At first glance, not much appears to have changed in the two years since my first visit: the curriculum remains stuck in a painfully boring didactic mode, teaching remains unidirectional and completely disengaged from the students' learning needs, and clinical instruction is virtually non-existent. Notwithstanding that seemingly gloomy assessment, it is undeniable that change of a very promising nature *is* underway at Keio. The progress I have witnessed exemplifies what can be achieved, even in the face of obdurate resistance, if an institution is blessed with visionary leadership. The change in approach to medical education at Keio provides a tantalizing glimpse of the potential for transformational change in the healthcare system itself. That is the central theme of this paper.

Recognizing the change in approach is also critical for another reason: to support and nurture the effort and will to change at Keio, and thereby sustain and even embolden those who seek to reform the system of medical education there. That is the subtext of this paper.

The Winds of Change

Central to the overall change in approach to medical education underway at Keio University are two interdependent changes of major significance that I have witnessed on my most recent visit to Keio University in 2005. Although they are inextricably linked, they are distinct from each other in their motivations and implementation, and the genesis of each comes from different sources. Yet, they share much in common, not the least of which is their shared link with the three annual visits I have made to Keio University School of Medicine since 2003.

The first change has to do with perspective.

It comes as no surprise that, with each successive visit, I learn more about Japan and its rich and complex culture. With that comes some faint insight into the way in which its traditions impact and constrain the educational and healthcare systems, as well as the effect Japanese culture and tradition have on the behavior patterns of students, teachers and physicians. As a result, I am beginning to understand that there is much more to the problems and their solutions than meets the eye at first glance. I have dwelt on those problems and solutions at some considerable length in earlier papers.[1–3] They are rampant, they occur at every level of education and training, and they continue to cry out for reform with a desperation that remains undiminished. They remain, in essence, unchanged from when I first described them, and their solutions are no different now than when I first recognized them. In that regard, nothing has changed.

What has changed, however, is the perspective with which I am able to view those problems. Repetitive exposure to the Japanese medical education system has enabled me to develop a somewhat more subtle understanding of the context in which those problems occur, together with the undercurrents in Japanese tradition and society that lie at their root. This still very rudimentary cultural maturation on my part has helped me appreciate that a more refined perspective is necessary to understand the factors that maintain and sustain the status quo. This *change in perspective* is the first of the changes I will describe. Although there is no concrete outcome to report as yet as a consequence of this change, it is both of great importance and of great significance. It is of great importance because developing the right perspective is the key to developing insight, the crucial "rate-limiting step" to devising and implementing solutions to any problem. It is of great significance because its source (who I will identify) is critical for the evolution of reform at Keio and a key determinant of the future of that effort.

The second change of consequence that I have been able to recognize with the benefit of repetitive exposure is a serial evolution in attitudes towards teaching at Keio University School of Medicine. I can now see tangible progress in the arduous task of transforming the attitude towards medical education in general, and teaching in particular, at Keio. In some ways, this *change in attitude* excites me even more than the afore-mentioned change in perspective. There is tangible and measurable evidence of progress here, unlike the more abstract, though no less consequential, change in perspective that is enabling it. The change in attitude is reflected in several concrete steps being implemented in Keio. Viewed in isolation, each step seems small in the context of the magnitude and multiplicity of the problems. In order to truly appreciate the collective impact of those changes, however, it is essential to view them as part of a bigger picture, rather than in isolation. In other words, as the old saying goes, one must not "fail to see the forest for the trees".

The saying is appropriate in another related context, as well. I must confess that, on previous visits, I have been so overwhelmed myself by the magnitude and multiplicity of the individual components of the dysfunction (the "trees") that I stand guilty of having fallen into the trap

of failing to see the problem of medical education at Keio as a single "whole" (the "forest"). It is not until my most recent visit that I have found the correct perspective to see that "forest". It has enabled me to integrate the disparate components of the dysfunction that afflicts both Japanese health care and medical education into a single "whole".

Both changes — one in perspective, and the other in attitude — are important to the change in approach to medical education that Keio. Without one, it is difficult, even impossible, to grasp the significance of the other.

A Refreshing Change in Perspective

Changing a Clinician-Educator's "Focal" Perspective of Problems in Medical Education at Keio …:

In the first paper in this series, written after my first encounter with the system as it existed at Keio, I described my perspective, as a clinician-educator, of the problem of medical education in Japan.[1] I identified one glaring deficiency as a key factor in the wide prevalence of the dysfunction in medical education at Keio University specifically, and in Japanese healthcare more generally: generalists are extinct as an academic species at Keio University. It means that there is no one on the faculty who can teach medicine from the perspective of the generalist. As a result, clinical training is non-existent, and the critical thinking and clinical skills that are the hallmark of the "well rounded" physician are nowhere in evidence at Keio (and other academic institutions in Japan.)

Others have commented on the overwhelming dominance of specialists and the virtual absence of generalists in academia in Japan.[4,5] This is a central factor in the failure of medical education in Japan to prepare its graduates for the challenges of primary care practice. The specialist faculty set the wrong example for trainees with their narrow focus on the practice of medicine, which consists of highly selective and specialized interventions targeted to solving single problems without integrating multiple problems into a single whole. Consequently, learning for students becomes reduced to a tedious process of memorizing esoteric details that are of interest only to specialists. Moreover, the specialist's single-minded focus on a favorite disease can sometimes fail to recognize the larger, human context of disease processes. All of these factors contribute to the Japanese medical education system's singular inability to meet the needs of the vast majority of its graduates who end up providing primary care to the public, without any instruction or experience in doing so.

Nothing has changed with respect to those observations (and conclusions) regarding the practice of medicine in Japanese academic centers, the way in which that is reflected in the methods of instruction, or its downstream impact on healthcare. However, I am aware that the points made in the foregoing paragraphs, while accurate, do not reflect the full picture. They are circumscribed by the limited perspective of a teacher unable to see past the dysfunctional state of both teaching and learning in Japan. That focal, educator-centric mindset has undergone a tectonic shift thanks to a discussion with Professor Ikeda, Dean-elect at Keio University School of Medicine and successor to Dean Kitajima.

I recall how surprised I was when Professor Ikeda, in referring to the "Blueprint for Reform" in my second report,[2] thanked me for helping "to show how to make Keio University competitive in the global health market".

I was taken aback when I heard this. As a clinician educator, I saw myself in a very limited role, which was to observe and critique the teaching of medical students at Keio University, and suggest ways to make it better. I had no delusions of participating in a grandiose exercise of "global" dimensions.

When I tried to disclaim any such intention to Professor Ikeda, he would have none of it. Very gently, but quite firmly, he explained to me his vision of Keio University graduates being eagerly sought as candidates for training in American medical centers. He used the word "globalization" in connection with his desire to see Keio University receive international recognition as a quality institution for both healthcare and medical training. He was very courteous and charming, in the best Japanese tradition, but I recall being struck by his quiet passion, even if I did not recognize its wellspring, nor relate it to my own efforts. After forty minutes of a very satisfying dialogue, he took leave of me and I was left to ruminate over his vision, without much success, I must confess, in understanding the problem in the global context, as he did.

It was not until much later, and after much thought, when I was back in the US, that I began to develop a nebulous concept of Professor Ikeda's "globalizing" vision for Keio University. It has taken me several months to flesh out the whole concept, at least as it has emerged in my understanding.

The core concept that Professor Ikeda described to me was that the challenge facing Japanese medical education goes beyond the obvious one that faces Keio University School of Medicine, which is to produce a well-rounded physician. As laudable as that may be, it is dwarfed by a larger challenge which faces the healthcare system itself and makes reform of medical education so critical, as I have argued elsewhere.[3] For opening my eyes to that single fact alone, I owe Professor Ikeda a debt of gratitude. In that sense, the third paper of this series, in which I have articulated the case for reform of medical education,[3] is integral to understanding Professor Ikeda's concept of "globalization". It can even be considered an essential preamble to this paper. However, the focus in

that paper was solely on justifying *why* medical education needs to change in Japan. The essence of the argument was that the healthcare system in Japan would be ruined without reform of healthcare practice, and that in turn depended critically on reform of medical education.

Professor Ikeda's concept, to my mind, goes much further than simply defining the challenge of reform, or justifying it from the standpoint of the healthcare system. What makes it so important is that it ties together several seemingly disparate components that go to make up the dysfunctional state of both the Japanese healthcare system as a whole, and the medical education system in particular. In that sense, it goes further than simply placing the responsibility for that dysfunction squarely at the feet of the medical education system. It provides a unifying theme, as well as a roadmap, for reform of both medical education and healthcare in Japan.

I do not know if what follows in the next few paragraphs is exactly what Professor Ikeda had in mind when he enunciated his vision to me. I cannot believe that it is much different, however. He is an eloquent proponent of his concept of "globalization" of education at Keio, and I believe that I have been able to capture the essence of that concept in reasonably accurate detail. The report I submitted to Keio, describing my sense of his vision has been seen by him and, I presume, approved as being a reasonable approximation of it, so I will assume it to be so.

…To a 'Global' Understanding of the Dysfunctional State of Healthcare in Japan:

The concept of "globalization" can be broken down into several components, which mirror the components of the dysfunction that affects health care (and medical education) in Japan. Viewed individually from a focused, "educator-centric" perspective, they appear to be disjointed pieces of a puzzle, only loosely connected with one another. Some of these components have been described in earlier reports, both by me[1,2] and by others,[7] and it is not my intention to reiterate those yet again. However, with the benefit of a better understanding, courtesy of Professor Ikeda's perspective, more of those components are revealed, and their collective ramifications take on a far more pervasive character. By recognizing their interconnected nature, they can be seen to come together like pieces in a jigsaw puzzle, and a single integrated solution takes shape.

1. Understanding Why The Japanese Medical Graduate Does Not Seek Global Experience: I have been struck by the curious absence of Japanese medical graduates in residency training programs in the US.[1] The fact that Japanese graduates do not seek training in US residency programs in any significant numbers is surprising in the context of the size of Japan and the number of doctors it graduates every year. It is even more surprising when one considers how large and advanced the Japanese healthcare system is. Yet, Japan does not rank in the top twenty countries of origin of international medical graduates in the US, in striking contrast to the abundance of trainees from many other countries in Asia.[8] The significance of that statistic is brought into stark relief by the fact that the "top-twenty" list is rounded off by countries like Colombia and Lebanon (each with approximately 3000 graduates in the US). For Japan to have fewer of its graduates in training in the US than countries like Lebanon or Columbia boggles the mind![8]

From the focused viewpoint of the clinician-educator, it is easy to rationalize the absence of Japanese graduates in US residency programs as a straightforward "cause-and-effect" phenomenon: (i) the system of medical education and training in Japan bears little resemblance to the systems found in the West, (ii) as a result, Japanese medical graduates do not possess the wherewithal to function as residents in any system that values and demands clinical skills and critical thinking.[9–11] The reflexive conclusion would be that Japanese graduates are unable, or unwilling, to take the risk of venturing out into the threatening "outside world".

While that conclusion may be valid in and of itself, it is so in a very limited context. It does not represent the whole truth, nor does it convey the magnitude of the problem, its scope or its complexity. The contradictory and confounding nature of the forces that are responsible for it are part of a much larger picture that is accurately reflected in microcosm by my own experiences in Japan.

On the one hand, I have sensed an astonishing enthusiasm for American residency training among Japanese medical graduates. Given all the obstacles that stand in the way, it never ceases to amaze me that there appears to be such a great desire to train in America among the young people I have met at Keio. The economic and financial implications of pursuing such a dream are not small, and the linguistic barriers almost insurmountable, in some cases. And yet they dream!

On the other hand, I have also discovered a very sobering reality in my interactions with these stellar young people. The sad truth is that their enthusiasm is tempered with a very strong dose of cynicism regarding the practical consequences of electing to train in the West. They realize that time spent in residency training outside Japan will not absolve them of the need to train in Japan as well, since it is a prerequisite for securing either an academic or clinical appointment upon their return to Japan. In that sense, time spent outside Japan represents time lost in starting a career in Japan, since the system does not "recognize" it. As if that were not enough, some have even acknowledged that it could be a waste of time in another sense too: any clinical skills training they may acquire will be virtually impossible to import into Japan, since the system actively discourages it.

It is this conflict between dream and reality that leaves me quite dumbfounded at times. I am not sure if a cynical acceptance of reality lies at the root of the apparent unwillingness of most Japanese students to risk actually following through on their dreams for "global" training. After all, applications from Japanese graduates to US residency program still constitute no more than a mere trickle.[8] Until one senses that it is acquiring the dimensions of a tidal wave, I am constrained to conclude that the aspiration to "American" or "global" experience in most Japanese medical graduates, as remarkable as it may be, remains just that: an aspiration. No matter how strong the aspiration, it is trumped by the reality that any skills acquired as a result are of little relevance for the Japanese medical graduate.

The deep ramifications of this mindset can be discerned at every level of the Japanese system. In medical education, specifically, the example of virtually everyone in a position of responsibility in Japan demonstrates, without leaving any doubt whatsoever, where the priorities lie. The exalted position given to research skills, experience and achievement in academic circles in Japan reinforces, as nothing else can, the irrelevance of clinical expertise for academic advancement. So, it comes as no surprise that, in the minds of trainees, no value attaches to the acquisition of clinical skills, except as an intriguing (and transitory) curiosity. After all, if the system doesn't pay even lip service to the principle of clinical skills training, let alone to teaching those, why would the student value the acquisition of those skills?

In healthcare, the situation is equally dismal. Training that has no relevance to the current practice of medicine in Japan is of little value, since the development or use of clinical skills are of little consequence for the practice of medicine.[3] As a result, even those who venture abroad to gain such experience know that any clinical skills training acquired as a result constitutes little more than an inevitable but unnecessary byproduct that will be irrelevant to healthcare practice when they return.

This collective mindset reverberates through the system, setting up and sustaining a vicious cycle that assures the maintenance of the status quo. On the one hand, the education system provides no clinical skills training to its graduates, and penalizes the Japanese medical graduate who tries to acquire the clinical skills through "global" exposure. On the other, the healthcare system discourages their use, and frowns upon the practice of medicine that deviates from the "Japanese way". Together, the twin forces provide a very compelling disincentive for Japanese graduates to seek such training outside the shores of Japan.

2. Understanding Why The Global Healthcare Market Shows No Interest in the Japanese Medical Graduate: The failure of Japanese medical graduates to seek global exposure to date sets up yet another vicious cycle, this one outside Japan. The virtual absence of Japanese graduates in clinical training outside the shores of Japan guarantees that the global healthcare marketplace lacks any significant or sustained exposure to Japanese medical graduates. Without the benefit of such exposure, it comes as no surprise that there should be virtually no interest outside the shores of Japan in recognizing the Japanese medical education system as a potential pool of clinical talent. Contrast that disinterest with the widespread international recognition given to Japan as a pool of extraordinary research talent and the eagerness with which researchers from Japan are courted outside the country. The result of the disinterest is a reverberating cause-and-effect phenomenon that has all the hallmarks of a second vicious cycle guaranteeing the status quo: Japanese graduates do not seek clinical training outside Japan in significant numbers, and the global marketplace therefore has no interest in recruiting them, assuring thereby that Japanese graduates do not receive the opportunity to acquire such training!

3. Understanding Why Globally Accepted Norms of Medical Education Are Not Followed in Japan: The failure of Japanese medical graduates to seek global experience in any significant numbers has institutional consequences that go far beyond the collective insularity noted above. A lack of outside exposure guarantees that attitudes inside Japan also become highly inbred with regard to teaching and training, so that clinical educators in Japan have a very difficult time trying to incorporate internationally accepted standards for medical education into their curricula and methods of instruction.[12] Methods of medical education that are developed and shown to be effective outside Japan are rejected out of hand on the grounds that they are not "suitable" for Japanese students and conditions, without any evidence to back up that reasoning. Emblematic of this inbred thinking is the statement by one senior professor at Keio who told me politely but quite emphatically that problem-based learning was neither necessary nor appropriate for medical education in Japan because (a) Japanese students were incapable of learning on there own, and (b) it was contrary to the "Japanese way" for students to question their teachers. As far as he was concerned, it was a foregone conclusion that PBL would be a complete failure in Japan. Moreover, there was no reason to change a system that had functioned so well for decades. After all, it had trained him, and he saw nothing wrong with the way he turned out!

I saw little point in trying to convince him otherwise, since his attitude did not brook any dissent or counterargument. Instead, I invited him to attend any one of the several PBL sessions I was scheduled to conduct during my visit, in order to have his beliefs regarding PBL either validated or repudiated. I had little hope that he would take me up on that, since he was convinced be-

yond any shadow of doubt that he was correct! Needless to say, he proved me right by failing to show up at any of the sessions. His obdurate conviction exemplifies the insular mindset that constitutes the single biggest stumbling block to the implementation of new ideas and approaches to teaching in Japan.

4. Understanding Why Globally Accepted Standards Of Clinical Practice Are Not Followed In Japan: The justification quoted in the foregoing paragraph for preserving the status quo is not an isolated opinion; I have heard it from others at Keio, too. There is no doubt in my mind that it has to be widespread in Japan to account for the resistance to reform that prevails there. As such, it has yet another ramification that further amplifies and perpetuates the twin vicious cycles described above, with an even more pernicious result.

Every system needs periodic infusions of talent and thought from outside to revitalize it and prevent attitudes from becoming inward looking, incestuous and, ultimately, sclerotic. Such periodic infusions occur only when trainees bring back to their home country new thoughts, ideas and clinical practices that are prevalent elsewhere. The Japanese healthcare system is deprived of these infusions of new thoughts, ideas and practices because Japanese medical graduates venture out of the country for clinical training so infrequently. Thus, attitudes such as the Keio professor's described above become a convenient camouflage for a deep sense of insecurity and an excuse to reject the need for all that is new or different. The result is that fundamental clinical standards that are widely accepted internationally are ignored inside Japan. Two examples of this phenomenon in Japanese healthcare that have been published in the literature are the unfamiliarity of Japanese physicians with the internationally accepted criteria for COPD and the lack of acceptance of the Diagnostic and Statistical Manual for Mental Disorders.[13,14]

5. Understanding why the Globally Accepted Role of the Generalist Is Not Recognized in Japan: There is a dismaying lack of any true commitment to the principles and practice of general internal medicine (GIM) in academic institutions across Japan.[12,15,16] I have commented at some length elsewhere on the fact that no respect or recognition is given to the general internist in academia specifically, or to primary care in Japanese healthcare more generally.[2,3] My initial shock and disbelief at discovering that this vitally important species of academic physician is extinct at Keio changed to resigned understanding when I discovered that the generalist occupies a position of such low esteem in academic circles. It ensures that the cadre of academic physicians that is considered the backbone of medical education in medical schools in other countries is sorely lacking in medical schools across Japan. As a direct consequence, the mindset that governs all discussion and instruction belongs exclusively to the super-specialist, while the primary care viewpoint is completely ignored at Keio (and at most, if not all, Japanese academic institutions, no doubt!)

With virtually no instruction in primary care practice being provided in medical schools across the country, the vast majority of Japanese medical graduates who end up providing primary care as generalists acquire virtually none of the skills that are necessary for them to perform in that role. The hardy souls who survive under that label do so with the sad acceptance of their underclass status in a highly super-specialized healthcare system. That they survive at all is noteworthy, given their underclass status in the eyes of their colleagues. That they perform as creditably as they have done, to ensure the enviable health status of Japanese citizens,[3] is nothing short of a miracle.

However, that miracle is purchased at a great "hidden" cost. Many have told me, off the record, that their training leaves them so completely unprepared for the primary care role that it is only through "on-the-job" training that they finally learn to perform in that role. The implications of those comments are frightening for the patients who are unfortunate enough to be the unknowing participants in the learning curve of such "on-the-job" training!

A lack of any meaningful instruction in general internal medicine also explains why Japanese medical graduates cannot perform a comprehensive history and physical examination, engage in critical thinking to solve clinical problems, or think in terms of integrated care.[1,9,16] In other words, they lack the unique skill of the generalist, which is to see the "forest" as much as the "trees". Moreover, with no academic role models in general internal medicine to look up to, the Japanese medical graduate sees no future in a career as a generalist, and views those who select such a career with a disdain that mirrors that with which the system views them. This is yet another example of a vicious cycle set up by a reverberating cause-and-effect phenomenon.

6. Understanding Why Globally Accepted Standards Of Evidence-Based Medicine (EBM) Are Not Followed In Japan: The final ramification of the Japanese medical graduate's failure to be a factor in the global marketplace to this point is the most ominous of all. Without a need to look outward, it is easy to ignore what is happening in the rest of the world. It is no wonder, then, that Evidence-based Medicine (EBM), as it is practiced everywhere else, is nowhere in evidence in Japan! For instance, Fukuhara *et al* write that the care of COPD in Japan diverges from published practice guidelines on several counts, including the frequent failure to consider COPD as a diagnostic entity in patients who meet criteria, the inappropriate use of computed tomography scans, particularly by specialists, and the infrequent use

of bronchodilator therapy.[13] Similarly, Ohno *et al* report that there is little agreement among Japanese clinicians regarding the standards of care for the management of rheumatoid arthritis (RA), and that drug prescription based on little or no evidence is quite common.[17] They describe the treatment of RA in Japan as being "unique" compared to Europe and the US, and conclude that this may be responsible for the relatively poor outcomes associated with RA in Japan.[17]

The lack of acceptance of EBM has obvious consequences for patient outcomes, but it also plays a significant role in Japanese physicians' "tendency to overprescribe", according to Hirose *et al*.[18] Since the system itself has no institutional safeguards compelling appropriate practice, physicians are free to use diagnostic or therapeutic interventions without regard to evidence or outcome, and with no reference to quality of care or fiscal responsibility.[18]

My own personal experience validates these observations.[3] Even more telling is the fact that, time and again, my interactions with students and residents have revealed that EBM is not used as the basis for either instruction or medical practice at Keio. In fact, several residents told me that preparing for the USMLE requires that they forget many of the things they learn for the National Boards in Japan (and vice versa!), because the information they need to know to pass the latter in many cases directly contradicts what they must know to pass the former! Of all the indictments I have heard of healthcare practice in Japan that one has to rank among the saddest and most damning of all.

Formulating a "Global" Solution to the Dysfunctional State of Medical Education and Health Care in Japan: It is not my intention to claim that the six points described above are the only components of the problem that matter. Nor do I wish to pretend that that this is the only perspective that brings them together. There may be others that are equally commendable in defining where Japanese medical education stands today. The point that Professor Ikeda made—the point that resonated so strongly with me—is fairly straightforward. It is that Japan cannot demand respect as an equal partner in the global health market if it is unable to command respect as an incubator of clinical talent that is worthy of recognition outside its shores. Only by rising to that challenge will Japanese medical education occupy its rightful place in the forefront of the globalization of medicine as a whole and of medical education in particular. Only then will Japanese health care enter the global market as a bonafide provider of comprehensive health care that meets international standards.

That is my redefined perspective, and I have Professor Ikeda's vision of globalization to thank for it. On another note, too, I am thankful to Professor Ikeda for reassuring me that the future of medical education at Keio is secure. With Dean Kitajima's tenure as Dean scheduled to end in the not-too-distant future, I was uncertain of the fate of reform when a new Dean took office. Dean Kitajima's visionary leadership, his force of will, and his team of able deputies are collectively responsible for the changes that I have witnessed at Keio (see below). However, there has been a lingering doubt in my mind as to the durability of those changes once they no longer had the same unrelenting drive and determination to sustain them.

No longer!

Now I am reassured that Dean Kitajima's legacy is safe after his departure. His signature issue of 'reform' dovetails perfectly with his successor's vision of 'globalization'. In fact, the reform agenda of Dean Kitajima and the globalization agenda of Professor Ikeda become one when they are viewed from the perspective I have just described. This is why I am confident that the changes that I have witnessed in Keio under Dean Kitajima's stewardship over the past three visits will be nurtured and allowed to expand under Dean-elect Ikeda.

The changes are still in their infancy, but the fact that they are occurring at all, and the fact that their future is assured, are why I am so excited about the future of medical education at Keio.

A Welcome Change in Attitude

My expectations after the first time I visited Keio University in 2003 were minimal—almost nonexistent, as a matter of fact. I fully expected that I would that never be invited back again, so blunt and honest was my description of the dismal state of medical education I encountered there.[1] But subsequent events have proven that there existed an honest desire to change at Keio, so that my bluntness had a transforming impact on the authorities in charge of medical education at that institution. During the course of two further annual visits over the past two years, I have been witness to evolutionary change that is not just measurable but truly consequential.

The change is nothing short of extraordinary when one considers how difficult it is to challenge, let alone upend, a well-entrenched system that is as antiquated as it is obdurate. It is particularly noteworthy, because the effort to reform the system extends to both facets of education: learning and teaching. So, just as I have not held back my criticism of the widespread dysfunction in medical education at Keio University School of Medicine, I cannot hold back my appreciation of the improvements that are being implemented there. Without a doubt, much remains to be done. It is true that, given the magnitude of the task, and the deeply entrenched opposition to reform, these changes may appear to be small, even in-

consequential. However, their collective impact is far more powerful than the mere sum of the individual parts. This is because every small change in the right direction weakens the inertia to change in critical ways that cannot be gauged. Not only that, it slowly but inexorably builds a momentum that emboldens and swells the ranks of the true believers even as it weakens and diminishes the ranks of the doubters and non-believers.

From my perspective, these changes are highly significant because they are occurring in the very three areas that constituted my biggest concerns regarding medical instruction at Keio University:[2]

1. A lack of commitment to fostering active learning techniques at Keio
2. A lack of commitment to teaching on the part of the faculty at Keio
3. A lack of commitment to encouraging and rewarding teaching and teachers at Keio

On all three fronts, I have witnessed progress that is truly consequential.

1. Keio is Making a Commitment To Fostering Active Learning Techniques By Incorporating PBL Into The Curriculum: It is a matter of great satisfaction and excitement for me that Keio University School of Medicine has now made an official commitment to introducing Problem Based Learning into the curriculum. The details have not been worked out in terms of logistics, such as the curriculum changes that will be necessary to free up time for PBL exercises. Nor is it clear where and how the material will be procured and developed for use in the PBL format. However, there can be no mistaking the commitment. In anticipation of the proposed curriculum revision, a wholesale renovation has been completed to construct rooms suitable for small group discussions, all fully equipped with the latest technology, including computer access and electronic "chalkboards" that permit direct printing of transcribed material.

I have made clear in the past my passionate belief that Problem Based Learning is the quickest and surest way of introducing several key concepts into medical student learning.[1,2] These include critical thinking, introspective learning, clinical problem solving, and integration of knowledge across organ systems and disciplines. All of these are conspicuous by their absence from learning and teaching at Keio at the present time. Yet, I will attest to the fact that medical students at Keio are ready, willing and able to grasp and apply these concepts, provided they are given the opportunity.

In my first two visits, I conducted a total of five different PBL sessions for students at all levels in medical school, from the second year (preclinical) to the sixth year (clinical). I even facilitated one of those in Japanese, even though I myself speak no Japanese, just to prove to myself and to the faculty at Keio that it is possible for Japanese medical students to learn independently without being spoon-fed! With my contribution being practically nothing, except for an occasional nudge when I sensed that the students were getting stalled, it was a resounding validation of the whole concept of learning that is driven by students themselves. This one observation alone refutes, without any prevarication or doubt, the opinion of the senior professor, quoted above, that Japanese students are incapable of independent learning.

Too late it dawned on me during my second visit that we could have recorded those PBL sessions for viewing by the non-believers among the faculty at a later date. On my most recent visit, however, Professor Amano videotaped both PBL cases I conducted, including one that I facilitated yet again for a group of students who spoke only in Japanese. He intends to make both of these mandatory viewing for all faculty members.

2. Keio is Making A Commitment to Changing the Mindset of its Faculty Towards Teaching: On my most recent visit, an event of great significance occurred. It was a Faculty Development Workshop that I conducted. The goal was to, in effect, "teach the teachers how to teach"! As part of that effort, I wanted to conduct a PBL session that was witnessed by the faculty, in order to demonstrate the incredible excitement and enthusiasm for learning that it generated in the students. I was convinced that if they only witnessed the joy the students evinced, the resistance of the non-believers would be undermined beyond recovery.

In the months leading up to my visit, Professor Amano and I exchanged several e-mails regarding how to deal with the one major stumbling block to success that seemed almost insurmountable: the refusal of the faculty to attend any sessions that were conducted by me. From previous experience, I was well aware that the faculty had no interest in, nor did they believe in, the "heretical" concept of student-directed learning that I was trying to convey. Despite repeated entreaties by Professor Amano, no faculty members other than those in the Department of Medical Education made the effort to attend or take advantage of any of the multiple opportunities that my visits created for them to witness PBL in action.

We finally hit upon a solution. I made a plea to Dean Kitajima to make an appearance at the Workshop so that it would leave no doubt in the minds of the faculty that the effort bore the stamp of his approval. Knowing full well how busy he was as the Dean, I expected little more than a cameo appearance from Dean Kitajima at the start of the Workshop, with him making a few supportive comments.

I should have known better!

Not only did Dean Kitajima make an appearance, he stayed for almost 2 hours (90 minutes longer than he had available on his schedule). His attendance, for which I am

very grateful, was a resounding vote of approval for the effort, and it could not have been lost on the forty-odd faculty members in attendance, most of who stayed through the entire day!

The result was a resounding success from many standpoints:

(i) ***The faculty finally witnessed Problem Based Learning in action.*** This development was of monumental significance. I had no great hope that anyone would be interested enough to attend, based on past experience. But Dean Kitajima's presence did the trick on that score. As a result, many of those who might otherwise never have attended the Workshop had the opportunity to see and experience first hand how exciting and rewarding it is for both the student and the teacher when a problem-based format is used. Even more important was the fact they got to see how skilled and enthusiastic their students could be when they were not spoon-fed. The result was a memorable first experience for most of the attendees.

When the idea of conducting a "live" PBL session in public first entered my mind, my immediate reaction was to reject it out of hand. There were several compelling reasons to do so. In the first place, to conduct a PBL in public would suppress the spontaneity and freewheeling discussion that underwrite the success of a PBL format. A second and even more powerful disincentive was my doubt over the wisdom of exposing the students to "performing" under the critical eyes of their disbelieving teachers. Having witnessed the highly paternalistic atmosphere that pervaded instruction at Keio, I worried that they might regress into tongue-tied silence in front of their own "sensei". Moreover, there could be no doubt in their minds regarding the certainty of the scorn and ridicule they would face, were they to fail. Finally, and no less worrisome for me, I had to face the unpleasant truth that a failure on their part in such a public forum would sound the death knell of efforts to convince the faculty that PBL was a viable and valuable commodity in medical education.

All of these compelling reasons notwithstanding, the one reason to do it kept nagging at me: the opportunity to show the disbelievers (like the senior professor I quoted earlier) that Japanese students are accomplished at self-directed learning, and are most effective as learners when they are allowed to question their teachers and themselves. In the end, the temptation to rebut and reject the narrow mindedness of the disbelievers overcame my reluctance. Convinced that the potential upside far exceeded the downside, I decided to put my faith in the abilities of the wonderful young people I have had the privilege of teaching at Keio.

They rewarded that faith in resounding fashion. All my anxieties were blown away within the first five minutes of the session. Not only were they not overawed by the occasion, they performed in that public forum with an aplomb that I am not sure could be exceeded by my students at Pitt! In fact, I would be surprised if the latter could even match it, when one factors in the conditions. They were confronting an audience in which there were more than a few who were not only inimical to the whole concept of PBL, but were actually waiting for them to stumble. In that context, the ability of these *first-timers* to perform without even the semblance of a stumble was nothing short of incredible.

They did such a fantastic job that they surpassed even my expectations. (I might add that those are now very high indeed, given the exceptional quality of the students I have had the privilege to work with over three visits.) Without any coaxing or coaching on my part, they presented the material they had prepared (for the PBL Resolution) with a confidence and skill that made them appear to be old hands at the exercise. The result was that the faculty members in attendance were treated to a virtual *tour de force* in active learning (for the students) and restrained facilitation (for me).

(ii) ***The faculty members in attendance had an eye-opening introduction to the joys of teaching.*** After the session was over, several faculty members expressed wonderment at having witnessed such excitement and enthusiasm from their students. They also commented, with evident disbelief, that both the students and I seemed to be having a lot of fun, as if to imply that they never thought that learning (or teaching!) could ever be associated with having fun! That one reaction alone was fulfillment enough for me, because that was the very message I wanted to convey. The fact that it resonated proved to me that they got the message that active learning is the essential prerequisite for effective teaching.

(iii) ***The faculty members in attendance were introduced to concepts of active learning and interactive teaching.*** Before the PBL Resolution session, I delivered a didactic lecture that focused on the mutually interdependent concepts of "teaching to learn" and "learning to teach". Those twin concepts are central to my own core philosophy as a clinician educator, and I was honored that Dean Kitajima and Professor Amano asked me to deliver it. That sense of honor was transformed into delight when Dean Kitajima, who had earlier asked my pardon for having to leave early, actually

stayed until the very end (90 min longer than he intended), taking copious notes throughout the lecture. I have no doubt that his presence sent a very strong message to the faculty in attendance that he was serious about reforming the attitude towards teaching at Keio.

(iv) ***I was able to show the teachers how difficult it is to be a student.*** Teachers at Keio regard teaching as drudgery or worse, and view the "ignorance" of their students as an irritant. This mindset is compounded by the traditional Japanese belief in the infallibility of the teacher. The result is inevitable: teachers possess a sense of power and arrogance which dictates that the failure of a student to learn cannot be the teacher's fault, only the student's. This destructive mindset has to change for teaching to become interactive.

To jumpstart the effort to effect this change, I conducted an exercise on "The Challenges of Teaching and Learning" as part of the Workshop. The attendees were divided into small groups of about 8-10 individuals, each with a facilitator who was "trained" in the conduct of the group exercise. Each small group was in turn divided into two halves, to function in turn as either "teachers" or "students". The material to be "taught" was a simple, everyday picture taken from a news magazine.

The task of the "teachers" was simply this: they had to describe the picture in front of them, using only words, while keeping it hidden from the view of their "students". Explicit instructions were also given that all visual cues were forbidden, such as facial expressions, hand gestures or body language.

The task for the "students" was equally simple: to draw the picture as best they could from the words being used by their "teachers", without asking any questions. Then, the two subgroups exchanged their roles as "teachers" and "students", and the exercise was repeated using a different picture.

The purpose of the double exercise was to bring home a critical point to the faculty in attendance. It is fundamental to all successful instruction to appreciate that the material being taught is like a "picture" in the teacher's mind, always perfectly clear and easily seen by the teacher, but completely hidden from the view of the student. It is the duty of the teacher to draw that picture in words, with patience, forbearance and exactitude, so that it assumes a concrete shape in the mind of the student. The onus for making sure that it does sits squarely on the shoulders of the teacher, not the student!

The point became eminently clear when the "teachers" saw the results of their descriptions. The "students" drawings graphically demonstrated how difficult it was to transpose the teachers' words into an image that bore any resemblance to the original. Vague elements of the teachers' descriptions were discernable in the drawings, but each "student" appeared to grasp only some fragments of the total content, and those were not consistent across the group. It became evident to all that the difficulty lay not so much in the students' ability to draw the picture from the descriptions as it did in the way the teachers described the picture.

An even more important insight was provided by the participants themselves, without any prompting on my part. All agreed without exception that it was much more difficult being a student than a teacher! Most telling of all was the opinion that one participant voiced, and was almost universally endorsed, that I had made it very difficult on the "students" by preventing them from either asking any questions, or directing the descriptions according to their perceived needs. Had they been permitted to do so, they would have been able to draw a much more accurate picture.

That spontaneous comment delighted me more than anything, because it told me that the message had struck closer to home than any of the participants even realized. It presented me with the perfect opportunity to make the point that learning occurs only in an environment where students and teachers engage in a free exchange of thoughts and ideas. It helped me make the point that the traditional Japanese paradigm of education, in which it is virtually forbidden for a student to ask a question of the teacher, is completely counterproductive to learning.

3. Keio is Making a Commitment to Recognizing the Status of Teachers and the Importance of Teaching: It is no secret that academic centers in Japan consider research output as the only criterion to judge suitability for promotion, and place no value on teaching as an activity worthy of recognition towards academic advancement. Since there is no tangible reward for teaching at Keio, it should come as no surprise that the faculty have neither the enthusiasm nor the desire to teach.[1,2] The good news is that this may be about to change.

(i) ***Teaching will be rewarded.*** I was informed by Professor Makhoto Suematsu, the Chairman of the Committee on Medical Education at Keio, that there is general agreement in the Committee that the measures for rewarding teachers that I had proposed as part of my 'Blueprint for Reform' should be considered for implementation at Keio.[2] Clearly, the actual mechanics of the system of academic advancement based on teaching have yet to be worked out. However, it is an astonishing turn around from the situation that prevailed earlier that

the merits of teaching as a measure of academic achievement are even being debated. I cannot wait until my next visit to assess how much progress has occurred in formulating and implementing the new system of promotions for teachers.

(ii) ***Clinical teaching is being encouraged.*** An even more stunning new development is the recent appointment of not one, but two full-time clinician-teachers at Keio University Hospital. Both these physicians (Dr Toru Satoh and Dr Tomoharu Yajima) are now free to teach students, with salary support being provided by the Dean. I myself witnessed the enthusiasm of both these fine clinicians for teaching. Of particular note, both are gentle and kind towards their students, and do not exhibit any of the overbearing dominance that I have witnessed in other teachers at Keio towards their students. Dr Yajima, in particular, spends all his time on the wards, rounding with residents and students on his unit and teaching them. I was very gratified to learn that he is trying to teach his trainees how to perform a comprehensive history and physical examination. The effort is to be applauded, even if the results on view when I rounded on his ward with his residents were somewhat mixed. That does nothing to diminish, in my view, the value of his approach. It is reflected in the enthusiasm of the residents in his ward for good clinical practice. I left his ward with a renewed sense of hope and excitement.

A Yardstick to Measure Change

The challenge of reforming medical education in Japan is not one for the faint of heart, given the stubborn resistance to change that seems to be endemic in the Japanese healthcare system as a whole, not just in medical education alone. That is why it is all the more creditable that progress *is* being made at Keio in changing the culture and the system of medical education and training.

If every journey begins with one small step, then the changes I have described above collectively represent a giant leap forward in the long journey of reform on which Keio is preparing to embark. The first tentative steps in the process that started after my initial visit in October of 2003, are exploring new ground. Although it would be foolish to minimize the distance yet to be traveled, it would be equally foolish to minimize how far Keio has come in the short time since that first visit. The best way to validate the dramatic turnaround in approach is through the turnaround in my own reaction, from the dismay evident in my first paper[1] to the excitement and hope that I feel now.

Unfortunately, my reactions are not an objective or reliable measure of the progress that is being made. It is necessary to measure progress in the context of the two closely related aspects of training to which any medical graduate must be exposed in order to perform creditably in the role of the generalist: the *acquisition of clinical skills* and the *ability to think critically.* As I have noted elsewhere, five parameters define a model of medical education that satisfies the dual requirements of providing training in both areas:[2,3]

(i) It is *problem-based;*
(ii) It is *case-based;*
(iii) It is *evidence-based;*
(iv) It is focused on *developing clinical skills;* and
(v) It is two-way and *interactive.*

These five elements together comprise the best yardstick to measure the degree to which medical education at Keio is fulfilling the two crucial requirements of inculcating clinical skills and critical thinking in its graduates. By applying this five-parameter yardstick to the state of medical education at Keio as I found it initially, and as it exists now, it is possible to measure the progress that has been made since my first visit.

At the outset, let me state that *not one* of the five parameters was in evidence on my first visit. Measured against that, of course, any change is significant. However, the true significance of the change and its magnitude become discernable if one examines each of the five individual parameters that define an effective model of medical education:

(i) The first big change at Keio that I see now is the determination to introduce PBL in the curriculum; when that happens *problem-based learning* will become a reality at Keio;
(ii) Second, the presence on the faculty of two full-time clinician educators is a signal that *case-based learning* at the bedside is finally making its appearance at Keio; if it becomes more widespread it might become a reality;
(iii) Third, there is hope—just a sliver at this point, but very real—that the recognition of the clinician-educator's role for the first time at Keio could lead to the development of a cadre of clinician-educators among the faculty at Keio; if and when that happens, there will inevitably be a much greater focus on *developing clinical skills* at the bedside;
(iv) Even more faint, but no less real, is the first glimmer of cooperation from the faculty regarding the value of *interactive teaching,* thanks to the visible support of Dean Kitajima at the workshop I conducted; it means that, eventually, the unidirectional, didactic and dictatorial style of teaching that prevails at Keio might give way to something that actually encourages, rather than discourages, student participation in learning.
(v) The fifth parameter, *evidence-based medicine,* is noticeable by its absence in the process of educa-

tion at this time. Even though it is the one "missing" parameter, it is my hope that teachers will be forced, of necessity, to question their own beliefs and test the validity of those against the evidence. if problem-based and interactive learning take root in the medical education system. However, it is a hope that is too far in the future to contemplate in any realistic fashion.

Common to all five statements above is a liberal sprinkling of conditional qualifiers, like "if", "could", "might" and "when". They reflect my own uncertainty regarding the durability of these preliminary efforts at reforming medical education at Keio. The numerous conditional qualifiers associated with the first four parameters and the "missing" fifth parameter collectively represent the distance yet to be traveled to achieve successful reform of medical education at Keio. That distance seems almost overwhelming, even discouraging, to contemplate at this time. I prefer, however, to concentrate on the distance that Keio has traveled in the short time that has elapsed since my first visit. That is what confers on the changes their monumental significance, to my way of thinking.

I cannot end without stating that, if I appear to be singling out Keio University for being beset with problems, it is only because it represents the one academic institution in Japan that I have had the privilege and honor to visit. I am fully aware that the problems I have identified are not unique to it. I have had informal discussions with a number of leading Japanese educators who have participated in the Pittsburgh-Japan Program directed by Dr Haruko Akatsu-Kuffner at the University of Pittsburgh. Coming as they do from all corners of Japan, they represent the entire spectrum of academic and non-academic teaching hospitals in Japan. This makes their opinions particularly valuable as teachers who are familiar with conditions that prevail across Japan.

All, without exception, assure me that the situation I encountered on my first visit to Keio is no different from that to be found in every other academic institution in Japan. They admit that medical student education everywhere in Japan remains mired in the same stultifying didactic mode. According to them, learning is just as determinedly unidirectional and passive everywhere else, as it is in Keio. The universal nature of the dysfunction has deep roots in the traditional Japanese approach to education from the earliest stages of elementary school, and is in keeping with the feudal "ikyoku-koza" system in medicine.[19] The result of those deep roots is that recommendations made over the past two decades to revamp the system have languished, gathering dust, without any evidence that they have any hope of resurrection in the foreseeable future.[20] More recently, there has been a push by the authorities to impose change from above on a recalcitrant system.[21] However, implementation of those initiatives has been undermined by a largely cosmetic whitewash that preserves, protects and perpetuates the established system. That is not surprising, since the resistance to change is deeply rooted in a tradition that permeates all levels of Japanese society; it would be naïve to expect it to vanish or change in so short a period of time.

Nevertheless, I am filled with hope that the progress being made will continue at Keio, and will accelerate not just there but in other institutions across Japan. The best indicator of the potential for transformational change is to be found in the excitement that I have witnessed among Japanese students for clinical skills training. That fact, I can only hope, will not be lost on others (including the program at Keio, itself). With time and the commitment of resources, this could result in the gradual evolution of Japanese medical education into something more akin to systems of medical education and training that are seen in most other parts of the world.

Acknowledgements

I want to thank Dean Kitajima and Professor Amano for their steadfast commitment to the reform of medical education at Keio, and Professor Ikeda for his vision and the time he spent articulating it for my benefit. I particularly want to acknowledge the encouragement, advice and support of this ongoing effort provided by Dr Haruko Akatsu-Kuffner, Director of the Pittsburgh-Japan Program. Her many helpful criticisms and comments were invaluable during the writing of this manuscript.

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