

Special Review: Editorial of the POSEIDO ISAIAS

## Developing a global scientific Community through cooperation and partnership: reinventing the intercultural interface, or the ISAIAS Prophecy in Internationalization of Higher Education and Research

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### Abstract

Internationalization of Higher Education and Research is a major evolution of the Academic environment, and it is also impacting in a specific way the dental disciplines. It is originally a concept to promote cooperation and peace between cultures and Nations, through the development of an efficient intercultural Academic interface. This introductory article reviewed the origin, causes and consequences of this process in the global scientific cooperation, and discussed how the current models of internationalization have generated independent blocks around centers of influence. These centers are entering in a scheme of global competition for influence, far from the initial honest concept of cooperation. This article also introduces the paradigm of “intelligent internationalization”, as a flexible and versatile method to create and maintain an interface between institutions, cultures and countries. This model is the basis of the POSEIDO Consortium (Periodontology, Oral Surgery, Esthetic & Implant Dentistry Organization) and is founded on the concept of network of leaders of internationalization. To monitor and strengthen this effort, the POSEIDO Consortium is developing an Academic toolbox termed ISAIAS (Intercultural Sensitivity Academic Index & Advanced Standards), as an initiative to promote deeper cooperation and to develop long-term common efforts in Higher Education and Research.

**Keywords.** Attitudes, culture, education, international cooperation, international educational exchange, leadership.

## 1. Internationalization: the Theory and the Practice

The process of internationalization of higher education and research is a natural consequence of the current globalization of the economy and policies, et vice versa [1,2]. Science and knowledge are an important part of this globalized economy, both as a financial resource for Academic institutions and a vector of development and influence. Therefore, this evolution is unavoidable, needed and promoted in most countries in different ways. However, this evolution is also affecting very strongly the functioning and customs of the Academic environment and stakeholders, as all of them – Students, Academic and Administrative staffs – have to face this new globalized reality [3].

It is often considered that Universities are the last Bastions of the Culture. It is an elegant way to recall that even if the Academic environment is not always conservative in its content, it remains for many historical and structural reasons quite conservative in the form, whatever the country. The internationalization of each university raised many specific issues, particularly in the way each institution (and country) wishes to develop its intercultural interface to exchange students, faculty and collaborate on the daily basis in higher education and research programs. Moreover, the national cultural differences of perception and action, and the different organizational cultures of each country and institution [4] are impacting considerably the capacity to build and maintain an efficient international interface for cooperation. All these intrinsic characteristics of the Academic stronghold are often deadly obstacles to long-term trustful and efficient global collaboration.

Despite these difficulties, governments are strongly promoting the development of the international collaboration, mostly through many national programs supported by financial incentives [5]. Education and Research are powerful instruments in the current globalized economical competition, to train efficient professionals and to promote discovery and innovation, as well as a powerful source of financial resources and an instrument of international influence. Therefore, the concept of internationalization of higher education and research is often considered as a priority by the economic and political policymakers [5], also as an important way to become or remain a center of influence.

However, these efforts may be in fact very superficial [6]. When the last Stronghold of Culture goes global, concepts have to evolve and adapt to the national reality to survive. Many universities perceive internationalization as a simplified administrative concept, mostly teaching and communicating in English, bringing more foreign students to study on their campus and finally to send more of their own students abroad. Universities often evaluate the outcome of their efforts only as a simple number of foreign students visiting their campus, and students traveling abroad. The development of an international Faculty is also a promoted method, but it remains very specific to Anglo-Saxon Universities. Actually, the modern paradigm of internationalization of higher education is often perceived as an Anglo-Saxon model, and it may explain why it is not perceived positively and has not been accepted in many countries. It may explain why each culture wants to implement this concept in its own way [5].

In theory, the purpose of internationalization is first of all to create an interface of exchanges between countries and between cultures, and not only to import students or Faculty. It is not a blind verbiage; it is a concept to promote a sincere understanding and long-term peace and cooperation between countries and cultures, even if they decide to have

their own path of development. If the interface does not really develop and function smoothly, and turns unbalanced, the process of internationalization becomes in the best case a simple commercial activity (the trade of education and knowledge), in the worst case a blind effort to fulfill an administrative obligation towards a national policy [5,6]. If the imbalance increases to a critical level, it can become a source of conflicts and distrust, leading to the break of the interface with deep long-term damages.

In Dentistry, internationalization takes a specific form related to the clinical nature of the profession, and the specific need of recognition of the diplomas to practice (registration to a national Board or Order particularly). Schools of Dentistry are therefore quite isolated due to the administrative nature of the diploma they deliver. The undergraduate dental Education remains very strongly national in most cases. In general, internationalization concerns mostly the postgraduate education (i.e. specialization training) and the research levels. The current tendency is to regroup the Universities by countries sharing full or partial agreements on practice diplomas, for example the European countries, the countries of the British Commonwealth, the countries of the former Soviet block, France and other French speaking countries, etc... History and language have created and have been maintaining these cultural blocks of influence. The interface between these blocks is in fact quite limited, and the transmission and penetration of ideas and concepts between these Academic blocks are much slower than what we can imagine and strongly impacted by the national and organizational cultures. A simple example: the use of L-PRF (Leukocyte- and Platelet-Rich Fibrin) has been developing for more than 10 years in Europe and many other countries worldwide as an open-access inexpensive useful method, while it only starts to be introduced recently in the US Academic environment [7].

In Theory, Theory and Practice are the same; in Practice, they are different. Internationalization of Higher Education and Research is an excellent example of this sentence. In theory, internationalization should create bridges between cultures and people at a global scale and should be promoting a delicate and sincere interface. In practice, the national interests and organizational cultures are allowing often only a very superficial interface between nations and cultures, and finally create and consolidate blocks of influence entering frequently in competition. Even the most internationalized universities have difficulties to maintain long-term and stable international partnerships. The cultural interface is often too superficial and temporary. Deep cooperation is often broken by intercultural misunderstandings and conflicts of interest, while superficial cooperation dissolves like a dream after a few primary objectives have been reached. Even with the greatest sincerity between people, the stabilization of the interface is simply difficult in most Academic and cultural environments. The current policy models may have reached their limits.

## 2. International Scientific Cooperation or Competition of Influences?

When considering international Scientific cooperation in Health Sciences, the U.S. model is an interesting example, as this effort is particularly strong and integrated in a global policy of development by the U.S. government and most of the U.S. universities.

The most organized global initiative in this sense is probably the development of the Fogarty International Center [8], a branch of the U.S. National Institute of Health (NIH, the national medical research agency and a part of the U.S. Department of Health). This Center was established in 1968 to promote and support scientific research and training

internationally to reduce disparities in global health. In its official mission and vision, the Fogarty International Center is “dedicated to advancing the mission of the National Institutes of Health (NIH) by supporting and facilitating global health research conducted by U.S. and international investigators, building partnerships between health research institutions in the U.S. and abroad, and training the next generation of scientists to address global health needs. The Fogarty International Center's vision is a world in which the frontiers of health research extend across the globe and advances in science are implemented to reduce the burden of disease, promote health, and extend longevity for all people.” The Center is based and functioning on generous ideals, but is also an important instrument of political and economic influence. Many countries have developed historically similar initiatives of scientific cooperation to extend their influence (for example France very active in all French speaking countries, Japan very active in the Asia-Pacific area, England in the Commonwealth, Russia in many former soviet satellite countries or even Cuba bringing a significant medical assistance in many developing countries, etc.). Many other countries are now actively supporting and extending worldwide this kind of cooperation for the very same reasons (for example South Korea and China).

The national efforts for scientific cooperation are obviously positive initiatives, even if they can be sometimes perceived as a form of Scientific Imperialism. The main issue with this form of cooperation, it is that it creates and freezes blocks around some national centers of gravity controlling the source and the functioning of cooperation. These blocks of influence often perceive themselves in strong competition, what can sometimes lead to tensions and always to an absence of real sincere cooperation between blocks.

If we take a look at the situation in the fields of Periodontology, Oral Surgery, Esthetic and Implant Dentistry (the POSEID disciplines), this notion of blocks of influence is very strong. If we take only the field of dental implants as example, the U.S. scientific societies such as AO (Academy of Osseointegration), American Academy of Implant Dentistry (AAID) or ICOI (International Congress of Oral Implantologists) are controlling their specific environment and developing a worldwide Community of Affiliates or Chapters, particularly through the powerful lever of their respective indexed journals and research Foundations. The same can be observed for the EAO (European Association for Osseointegration). These powerful groups are all trying to be international and extend their influence worldwide – on the same principles than the national institutions discussed previously.

However, even if they are the most visible groups internationally, these important societies only represent a very minor fraction of the global Community of the field. These societies are operating with specific cultural models and organizational cultures: perceived as a foreign body, they remain isolated from most major national blocks and have often a very weak penetration of the national professional communities worldwide. Paradoxically, the largest societies worldwide may be the national entities with a strong implantation and focus on their national community and culture, such as the Japanese Society of Oral Implantology (the largest society in the world with more than 12,000 members)[9], the German DGI (Deutsche Gesellschaft für Implantologie, the largest dental implant specialist society in Europe with 8,000 members), and many other major national societies such as the Korean KAOMI (Korean Academy of Oral & Maxillofacial Implantology), Brazilian ABROSS (Academia Brasileira de Osseointegração), the Russian RADI (Russian Association of Dental Implantology), the Spanish SEI (Sociedad Española de Implantes), the Italian SICOI (Societa Italiana di Chirurgia Orale ed Implantologia), the Chinese SSA (Shanghai Stomatology Association), and so many others. It is a frequent mistake to misperceive the real importance of the national scientific societies. The development of a global Community without the trust

of strong respected local partners may be perceived as a culturally arrogant approach, both counter productive and doomed to failure.

This observation reveals that many scientific societies perceive themselves as competitors and remain firmly independent from others to avoid conflicts between areas of influence. Groups are often hesitating to share or unable to cooperate, perceiving the others as a risk and not as an opportunity. As a consequence, these blocks of national interests and influence remain quite separated. All relations are based on equilibrium of forces between stakeholders. Maintaining this equilibrium requires a real understanding of intercultural cooperation, and how to develop an interface fulfilling the needs of all partners within their own cultural environment without creating tensions between partners. The current Theory of international scientific cooperation finally turned into global rivalry between centers of education and research and their respective areas of influence. It is very visible in the POSEID disciplines, but in fact, it can be observed more widely in most domains of international scientific cooperation.

### 3. The POSEIDO Consortium, an example of “intelligent Internationalization”

#### 3.1. To cooperate or not to cooperate, that is the question...

If we consider again the many scientific societies creating national or international communities in the POSEID disciplines, it appears obvious that, in theory, many of these partners should be able to cooperate into a common project. Together, they would be more efficient in the development and spreading of knowledge to improve global health – what is actually an important mission of all national medical institutions. A careful analysis of the national situations demonstrates easily that the national and organizational cultures of each scientific society are so specific that these groups are often not competitors in reality [4]. Most societies are working through different models and channels. The local success of a scientific society is mostly related to the way this entity grew in a specific organizational culture. Therefore, they all have interest to cooperate to become global by putting their efforts together [4]. The relations of forces between groups, however, often compromise this ideal objective. Each group is feeling the need to search for guaranties, control and leadership within the global community. The absence of real understanding of intercultural cooperation is a deadly obstacle in this situation also.

This observation is not specific to national scientific societies; it applies also very strongly in the Academic environment. An interesting example can be found in open-access publishing. Many major universities (such as Harvard, Princeton, etc), major funding bodies (such as the Wellcome Trust in the UK, the Howard Hughes Medical Institute and the National Institutes of Health (NIH) in the US, and the National Health and Medical Research Council (NHMRC) in Australia) and national institutions are now promoting open-access publishing – making it even sometimes mandatory for the funded researchers [10]. Open-access publishing can now be considered as a national policy in several Western Countries, particularly Australia, the USA [11], the UK [12] and Europe in general [13]. The concept is always the same: if a research is funded by an institution (particularly a public one), it must be accessible to everyone; the funded researchers shall not give their copyrights to publishing private companies and must make their research works open-access. However, the open-access model is not free [14], and requires the payment of substantial publication fees, creating therefore another financial barrier in publishing, what can be particularly impactful

in clinical disciplines such as implant dentistry, where many breakthroughs are coming from non-funded private practitioners.

The concept of open-access publishing is therefore very attractive and evolving very quickly nowadays. It is an obvious and vital platform for Academic stakeholders. However, we can observe that - outside of POSEIDO - almost no global Consortium of Universities was formed and started to develop and self-manage their own platform, without the control of a private publishing company. Paradoxically, we can find a few indexed dental journals managed directly by a University (and sometimes an Academic Department) through an in-school micro-publisher: many old examples actually exist, very often in unexpected places, for example Croatia (Acta Stomatologica Croatica, operating from Zagreb since 1966 and indexed in Pubmed since the Communist times!), Iran (Trauma Monthly, since 20 years) and many others. This reveals that journals can be created and managed directly in a University when there is a strong local leadership deciding to remain independent from private companies. By contrast, it also highlights the difficulty for Academic Departments to share and collaborate firmly together on a global publication platform, both at the national and international level. There is maybe a lack of trust and wish to share responsibility, the perception that a fair and honest cooperation would be technically impossible between Academic Departments worldwide, that conflicts of influence and financial interests are unavoidably spoiling such projects, and that difficulties of intercultural relations can not be seriously overcome when considering a more global approach. Therefore, academic stakeholders seem to prefer to rely on a neutral private publisher to serve as a common global platform to process their proceedings. This choice is financially heavy and deprives them from a big part of their Academic editorial freedom.

In the previously cited examples, when journals are developed within an Academic Department, they are mostly the fruits of a strong local leadership. The inconvenient of this strategy is that such platform never becomes really global. But these examples highlighted very clearly what can make an international cooperation possible: leaderships, and the gathering of strong national leaderships wishing to work together and to cooperate openly and sincerely despite the cultural differences. This observation served as a founding concept of the POSEIDO Community.

### 3.2. POSEIDO and the leaders of “intelligent internationalization”

The POSEIDO (Periodontology, Oral Surgery, Esthetic & Implant Dentistry Organization) is an international scientific network of academic departments and scientific societies. It was developed as a consortium of academic entities sharing the responsibilities of the global functioning of the network, through the development of independent partner hubs and editorial offices in each geographic area [15]. The network regroups mostly dental school departments, but it is also a platform for transdisciplinarity and translational research including departments of orthopedic and plastic surgery, cell biology, veterinary sciences, biotechnology and biomaterials. The network has already gathered significant entities in 40 different countries and several major scientific societies such as the previously cited Brazilian ABROSS, the Russian RADI, the Spanish SEI, the Italian SICOI or the Chinese SSA, giving to this cooperative initiative a quite unique global dissemination.

The Consortium functions like a cooperative platform between leaders of internationalization, i.e. experienced colleagues with a national and/or international reputation and serving as global relays and interfaces in their respective countries. The POSEIDO open-access journal is managed by a group of Editors, what will become a board of

several Editors in Chief at the end of the global development. The first POSEIDO journal is not a mass-publication platform, it is mostly a journal focusing on major specific studies and trying to develop a international collaborative work, as it can be observed in the last issues about the characterization of implant surfaces [16,17] or the comparison of various centrifuges for platelet concentrates [18]. The first issues of early 2014 [17,19] were downloaded already more than 15,000 times making this relatively small open-access journal one of the most downloaded (and hopefully read) in the profession.

The POSEIDO Consortium is founded on a flexible and versatile concept of “intelligent internationalization”. The classical approach to internationalization is a centralized policy funded and promoted by national institutions – and therefore considered too often as an instrument of Scientific Imperialism. On the contrary, the approach of “intelligent internationalization” implies that friends and local leaderships gather around a common global project and share its management for their own respective national area. It is the cooperative approach between centers of influence. The traditional process of internationalization is generally centrifuge – what can lead naturally to conflicts between centers of influences and difficulties in sincere global cooperation. “Intelligent internationalization” is more centripetal: partners are gathering around a project, but keep their area of influence. Intelligent internationalization is in fact the natural instrument of the current multipolar world, where no one can claim global leadership alone. It is a different model to offer the possibility of cooperation between centers of influence.

Following this model of “intelligent internationalization”, the members of POSEIDO are not together because they have to follow their respective academic national policies or because they want to gain influence on their international partners. All the partner entities remain completely autonomous. They volunteer to be together simply because they wish to be part of a global experience where they will be treated as equal. Such platform requires to back up the process with considerable intercultural competences and to gather a Community of strong national personalities monitoring the interface: the role of the leaders of internationalization appeared therefore crucial since the beginning of the project. However, despite the efforts of these leaders, it appeared also important to develop a toolbox of academic instruments to monitor and deepen the intercultural interface, and to support the development of global long-term inter-academic projects.

## 4. The toolbox of the ISAIAS Prophecy

### 4.1. The ISAIAS forum, a center of international cooperation

The founding concept of the POSEIDO network was to create and develop an international Consortium for Higher Education and Research in the interconnected fields of periodontology, oral surgery, esthetic and implant dentistry, and related sciences. As a global inter-academic experience, POSEIDO is constantly facing the challenges of intercultural cooperation [4]. The process of “intelligent internationalization” through the gathering of experienced national leaders of internationalization allowed to overcome most difficulties of collaboration among the many entities from 40 countries actually participating to this network. This resulted in an intense and smooth collaborative activity, particularly in the field of biomaterial research [17,19]. The experience and personality of the leaders joining the POSEIDO network played a significant role in the first successes of this cooperative platform. However, reinventing a model of intercultural interface between so many members is a difficult task that requires some adequate instruments to fulfill long-term objectives.

One major objective of the POSEIDO network is to develop efficient and stable long-term collaborations between all partners of the Consortium. The platform could allow to build commonly funded research and post-graduate education projects at a world scale, particularly in the field of implant dentistry and biomaterial research. The development of such wide initiatives requires necessarily diplomacy and intercultural competences from all stakeholders [4,20]. With this long-term vision in mind, the POSEIDO Community and Foundation decided to fund a global program of evaluation of internationalization patterns and of development of the intercultural sensitivity and skills of its actual and future community members worldwide: the ISAIAS program (Intercultural Sensitivity Academic Index & Advanced Standards). This project was designed as an evaluation, education and conflict prevention global initiative, to promote smoother and more efficient global cooperation.

The ISAIAS project functions as an international informal working group about the internationalization of higher education and research in general, and its impact in dentistry in particular. This group is developing new concepts, methods and instruments of evaluation of the internationalization of an academic environment (University, campus, laboratory) and its impact on the perceptions and behaviors of all academic stakeholders (particularly students, teachers and researchers). It serves also as a think tank to develop new strategies and standards to maintain the intercultural equilibrium of the Consortium and to promote the development of intercultural competences among members [20]. Practically, it is a general toolbox to highlight the SWOT (Strength, Weakness, Opportunities and Threats) of the members of the network, and to make partners aware of the kind of problems that may appear in the various projects.

Behind the numbers and indexes that can be calculated within this project, the ISAIAS office is first of all a group of colleagues in charge of monitoring our members and Communities, to prevent conflicts and find satisfactory solutions for everyone, based on the respective cultural background of each partner. The first function of this group is to observe and advice, serving as a kind of Intelligence Service for the Consortium. As a second and future objective, the ISAIAS forum was designed to become step by step a decentralized Center of international cooperation.

The ISAIAS logo (**Figure**) is representing 6 smiling faces in different colors, connected on and through the lines of a cloud. There is here a small reference to the Olympic flag; like for the Olympic flag, the colors should not be specifically associated with a population or geographic area. The 6 round faces refer symbolically to the main world geographic areas, even if the number of POSEIDO editorial offices and SIRECs (Scientific International Research and Education Centers) and their exact perimeters are voluntarily kept flexible and adapted to the growth of the Consortium worldwide. The cloud and the smile are referring to an expected Harmony through this partnership. They also illustrate the notion of network, and the decentralized nature of this International Consortium, with all partners equal. Finally, the thin cloud line connection between the faces recalls also the fragility of this intercultural channel between partners, and the need to make efforts to maintain it. The line is fragile, but historically, sincere links between partners are the only interfaces working efficiently. The whole logo represents somehow this vision of “intelligent internationalization” of higher education and research through networking of leaderships, as an equilibrated and harmonious Community. The symbolism of this model of cooperation appears more adapted to our current extremely multipolar world than a superficial process of internationalization.





**Figure.** The ISAIAS logo is representing 6 smiling faces in different colors, referring symbolically to the main world geographic areas. The cloud slim connection between the faces and their smiles are referring to an expected Harmony through a decentralized networking partnership, with all partners equal. The thin cloud line connection recalls also the fragility of this intercultural channel between partners, and the needed efforts to protect it. The whole logo illustrates quite well the concept of “intelligent internationalization” of higher education and research through networking of leaderships, as an equilibrated and harmonious multipolar Community.

#### 4.2. About the choice of ISAIAS as acronym

The acronym ISAIAS is easy to remember as it recalls the name of an important Prophet of the Bible (using the orthography used in Latin, Spanish and many other languages), who is actually shared between the 3 major monotheist religions. There were obviously no religious considerations in the choice of this acronym, as it would go completely against the good sense rules of neutrality in the development of intercultural cooperation, even if this is perceived as an historical and not conflicting character for most stakeholders.

The idea was first of all to have a general acronym easy to remember for the whole project funded by the POSEIDO Foundation, but the members supporting this project also considered that the name of this historical character was suiting very well the function of this project. Indeed, the Prophet Isaias was important in the religious traditions mostly for the accuracy of his predictions and for his announcement of the coming of a World of Peace among the Nations. In this sense, this acronym reflects the idea that the ISAIAS scores, developed as various indices and standards of internationalization through the development intercultural competences, are a way to predict the level and evolution of a process of internationalization of higher education. It also recalls that efforts in terms of development of intercultural sensitivity within the Academia remain the key for smoother and more efficient interactions and collaborations between researchers, teachers, administrative staff and finally populations, even if they remain culturally very different and with the wish to remain so. Somehow, the instruments that will be developed with the ISAIAS project are expected to promote understanding and cooperation in the respect of cultural diversity within a research and education network, what is the most adequate approach in the current globalized but more and more multipolar World. Culture is the software of the mind [4]; the ISAIAS project

has been funded to develop a software for efficient inter-academic education and research cooperation, particularly within a specialized community like POSEIDO.

## 5. Perspectives

The development of the POSEIDO global scientific Community through cooperation and partnership is a considerable endeavor that requires to reinvent and to reformulate some concepts of the current paradigm of internationalization of higher education and research. The notion of “intelligent internationalization” through the channel of leaders of internationalization is one of the POSEIDO founding concepts and is well illustrated by the symbolism of the logo of the ISAIAS project and forum. The ISAIAS initiative is serving as an instrument for understanding and developing the POSEIDO intercultural experience, to improve the interfaces in internationalization, and also to offer predictive advices for the protection of the thin and fluctuating intercultural interface. This ISAIAS “Prophecy” recalls us that beyond the institutions and the culture, there are People, and this is this challenging path that we have decided to follow using this flexible and versatile interface.

### Disclosure of interests

The authors have no conflict of interest to report.

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