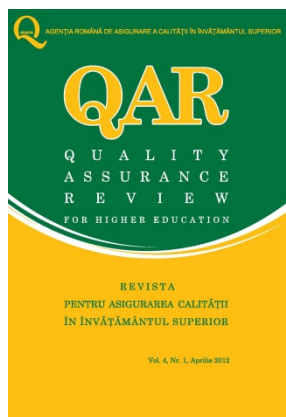




**AGENȚIA ROMÂNĂ DE ASIGURARE A CALITĂȚII ÎN ÎNVĂȚĂMÂNTUL SUPERIOR**  
**THE ROMANIAN AGENCY FOR QUALITY ASSURANCE IN HIGHER EDUCATION**

Membră cu drepturi depline în Asociația Europeană pentru Asigurarea Calității în Învățământul Superior - ENQA  
Înscrisă în Registrul European pentru Asigurarea Calității în Învățământul Superior - EQAR



## **Quality Assurance Review For Higher Education**

### ***Quality Measurement and Quality Improvement in International Master's Programmes: a Case Study***

**Marinela Burada, Elena Buja, Gabriela Cusen, Andreea Nechifor, Daniela Șova**

Quality Assurance Review for Higher Education, Vol. 4, Nr. 1, 2012, pp. 23 - 32

**Publicat de:** Consiliul Agenției Române de Asigurare a Calității în Învățământul Superior - ARACIS

**Locul publicării:** București, România

**Tipul publicației:** tipărit, online

**Adresa:** Bd. Schitu Măgureanu, nr. 1, Sector 1, București, cod poștal 050025

**Telefon:** +40 21 206 76 00; Fax: +40 21 312 71 35

**E-mail:** [gar@aracis.ro](mailto:gar@aracis.ro)

**Pagină electronică:** <http://www.aracis.ro/en/publicatii/qar-magazine/numarul-curent/>

Revista Quality Assurance Review for Higher Education este editată din fondurile proprii ale ARACIS și asigură sustenabilitatea proiectului "Asigurarea calității în învățământul superior din România în context european. Dezvoltarea managementului calității academice la nivel de sistem și instituțional", Contract POSDRU/2/1.2/S/1, cod proiect 3933.

Pentru a reproduce un text din revistă este necesar acordul scris al colegiului de redacție al revistei Quality Assurance Review for Higher Education.

Răspunderea pentru textele scrise aparține autorilor.

Conținutul acestui material nu reprezintă în mod obligatoriu poziția oficială a ARACIS.

# Quality Measurement and Quality Improvement in International Master's Programmes: a Case Study

Marinela Burada  
Elena Buja  
Gabriela Cusen  
Andreea Nechifor  
Daniela Șova

Transilvania University of Brașov  
Transilvania University of Brașov  
Transilvania University of Brașov  
Transilvania University of Brașov  
Transilvania University of Brașov

**Abstract:** A significant amount of attention is paid nowadays to quality and quality-related issues in virtually every area of human activity. Continual measurement and enhancement of quality are of paramount importance in higher education because the accelerating process of 'Europeanisation' has made it necessary for universities to take stock of their assets and liabilities when it comes to the educational services they offer.

Grounded on data collected from our home University, in this paper we draw on quality-related strategies, tools and insights originating from business studies in order to discuss how and to what extent they could be useful in measuring and enhancing the quality of the educational processes and of their outcomes. Therefore, after briefly outlining our context set against the European backdrop (1), the paper includes an excursus on the strategy and tools which are deemed to be particularly applicable to our context (2), we then go on to use these tools to perform a succinct quality analysis of the activities involved in the operations and management of three international master's programmes (3) and to suggest ways to improve the quality thereof (4).

**Keywords:** quality measurement and enhancement strategies and tools, Deming Cycle, Process Model, case study, linguistic competence, operative mode.

**Rezumat:** O atenție deosebită se acordă în ziua de astăzi calității și aspectelor legate de calitate în, practic, toate domeniile legate de activitatea umană. Măsurarea și îmbunătățirea continuă a calității prezintă o importanță extremă în învățământul superior deoarece procesul accelerat de „europenizare” a făcut necesară evaluarea, de către universități, a îndatoririle și responsabilitățile pe care le oferă când vine vorba despre serviciile educaționale.

Bazându-ne pe date culese din propria universitate, în această lucrare ne propunem să operăm cu strategii, instrumente și viziuni legate de calitate, care își au originile în studii din domeniul economic, pentru a discuta cum și în ce măsură ar putea fi folosite în măsurarea și îmbunătățirea calității proceselor educaționale și a produselor acestora. Prin urmare, după descrierea situației proprii pe fundalul contextului european (1), lucrarea prezintă strategia și instrumentele care se pretează a fi aplicate în mod particular contextului nostru (2); continuă prin a folosi aceste instrumente pentru a efectua o analiză succintă a calității activităților implicate în desfășurarea și conducerea a trei dintre programele de masterat internaționalizat din instituția proprie (3) și își propune, în final, să sugereze modalități de îmbunătățire a calității acestora, în consecință (4).

**Cuvinte cheie:** strategii și instrumente de măsurare și îmbunătățire a calității, ciclul Deming, modelul procesului, studiu de caz, competențe lingvistice, modelul operativ.

## 1. The European Context and the Local Context: Preliminary Points

One of the key objectives of the *Bologna Process* (1999) has been to render Europe more attractive internationally. This has led countries and higher education institutions across Europe to promote themselves as study destinations and academic partners with high quality offers. In the

same vein, the process of internationalization of master's programmes in general has been discussed within the framework of the *European Higher Education Area* (2010) which promotes, among others, international academic cooperation between European universities, focusing on the community of interests which both respects and fosters academic values and cultural diversity. Quality in higher education was considered a precondition for the success of the Bologna process; but the slowly emerging concept of quality was reified by the *Berlin Communiqué* (2003) which stipulated explicitly that 'consistent with the principle of institutional autonomy, the primary responsibility for quality assurance in higher education lies with each institution itself'. Quality assurance in European higher education comprises three levels: (1) the institutional level: *Enhancing quality*, (2) the national level: *Enhancing external accountability procedures*, and (3) the European level: *Promoting the development of a European dimension for quality assurance*. While the Bologna process has clearly offered excellent opportunities to both teachers and students to gain access to many European universities, the strong competition on the international higher education market has put universities under a lot of pressure, requiring them to reconsider their quality standards and to take steps towards raising them.

Anticipating this threat, *Transilvania* University of Braşov started, in 2004, the development of a strategy and action plan aimed to increase its competitiveness nationally and internationally by integrating the research and education structures. The restructuring of the University has been described as a ten-step process (Vişa, 2009). As part of this process, the University's internal assessment was aimed at informing the institution about itself, allowing it to evaluate its own position and decide on appropriate actions and quality objectives for the future; the ensuing baseline study highlighted a number of strong and weak points: for example, well trained academic staff, on the one hand, and overlapping activities, on the other. One of the most important objectives of this on-going strategic plan is the effort to enhance quality in education, in order 'to offer our graduates a fast and successful insertion on the labour market, in Romania and abroad' (Vişa, 2009: 128). Accordingly, the master programmes were redesigned and step 5 stipulates 'training through and for research' to be the philosophy behind the master's programmes run under the aegis of *Transilvania* University: to this end, they have a flexible student-centred structure, which enables each learner to follow a full optional path, while being also able to attend additional courses from other optional modules (Vişa, 2009: 131). This philosophy is in tune with the belief that the main outcome of institutional quality assurance strategies should be to support the enhancement of the experience available to students (Sharp, 2009).

## 2. On Strategies and Tools in Quality Management

Extensive practice has shown that to be effective, quality management must be based on both assurance and enhancement. This is because quality assurance processes that are not linked to enhancement fall rapidly into neglect (Sharp, 2009). Furthermore, according to Filip (2006), continuous quality enhancement is based on different strategies adopted by an organization, among which competitive strategies are quality-oriented, since quality is aimed at facing competition. Filip claims that competitive strategies may be focused on (1) quality adaptation to the demands of each social segment, (2) qualitative differentiation comparative to other competitors, and quality improvement (2006: 21). The last category involves intensive and extensive methods, regarding the change of the quality features of the product or activity, or the increase of the number of quality features.

Referring to the continuous quality improvement strategy, Filip (2006) describes the KAIZEN strategy, which is directed to the progressive, continuous improvement of products and services, as well as to the increase in productivity and competitiveness, involving the entire staff of the organization. The focal point here is the quality of the staff who must internalize the need for

continuous quality improvement. This strategy enables them to identify the functional problems in their work and find methods and tools to solve them on their own. The implementation of this strategy presupposes the change of the organizational culture and of the whole values of the organization. The KAIZEN strategy is based on different methods, techniques and tools, such as the Deming Cycle (*Plan-Do-Check-Act* – PDCA), quality circles, small working groups, suggestions system, etc. (2006: 21-22). The Deming Cycle entails a permanent collaboration between research, design, production and sale in order to improve quality. The diagrammatic representation in Figure 1 below suggests that the cycle *Plan-Do-Check-Act* must be permanently restarted in all management activities. PDCA indicates the succession of the improvement activities, considering that before acting, the consequences must be correctly evaluated.

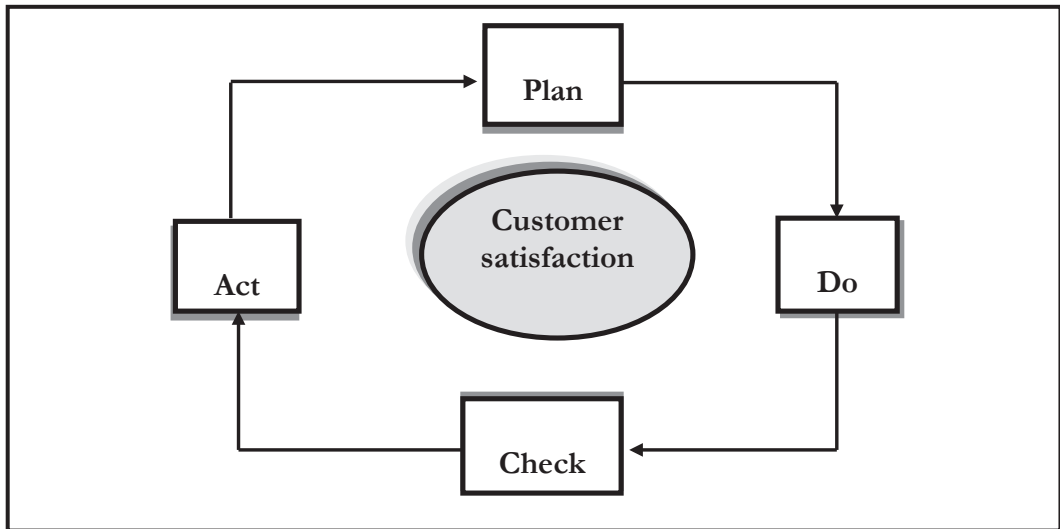


Fig. 1 The Deming Cycle (source: Filip, 2006: 24)

According to Filip (2006: 25), the four main stages in the Deming Cycle involve the following:

- *Plan*: showing that the existent situation is analysed and a future action plan is set (for example, by finding answers to such a question as: *what are the customer needs that must be satisfied?*). Next, an evaluation is performed to see how the demands can be satisfied, what changes are required, the main results that must be acquired, if the available data are sufficient and what new information is necessary. The priorities are fixed and the improvement plan, based on the evaluation, is then established.
- *Do*: showing that the improvement plan is implemented on a small scale and the first information regarding the possible results is obtained.
- *Check*: showing that the results (effects) acquired from the application of the improvement plan are evaluated and the critical points are identified.
- *Act*: showing that the results are studied and if the expected improvements were achieved, then the existent operating procedures are changed accordingly.

These can be further improved through a new plan, thus restarting the cycle.

Filip (2006) also introduces the **Process Model** as another effective tool in the quality management kit. This model describes the relationship between customer and supplier as functional elements of an organization – a relationship which entails mutual exigencies. The process model concept implies that (a) each activity can be assimilated with a process and, by similarity, the reason of an activity is customer satisfaction; (b) every employee has to manage an activity/process, thus being in a horizontal supplier-customer relationship flow; (c) there is mutual exigencies formalization; (d) the ‘activity’ concept has been redefined by replacing the verb **to do** with the verb **to add value**

(2006: 71). Moreover, the process model concept rests on four pillars (see Figure 2 below): (1) *the operative mode* stands for the succession of necessary stages for the on-going activity; (2) *the means* refer to material and logistic resources – all inputs without added value; (3) *the human resources* are viewed from both a quantitative and qualitative point of view; (4) *the quality indicators* of the process are the issues that result from and allow measurement and evaluation.

For the purposes of this paper, Filip’s process model has been adapted here with the aim of examining higher education institutions, specifically international master’s programmes, as shown in the figure below:

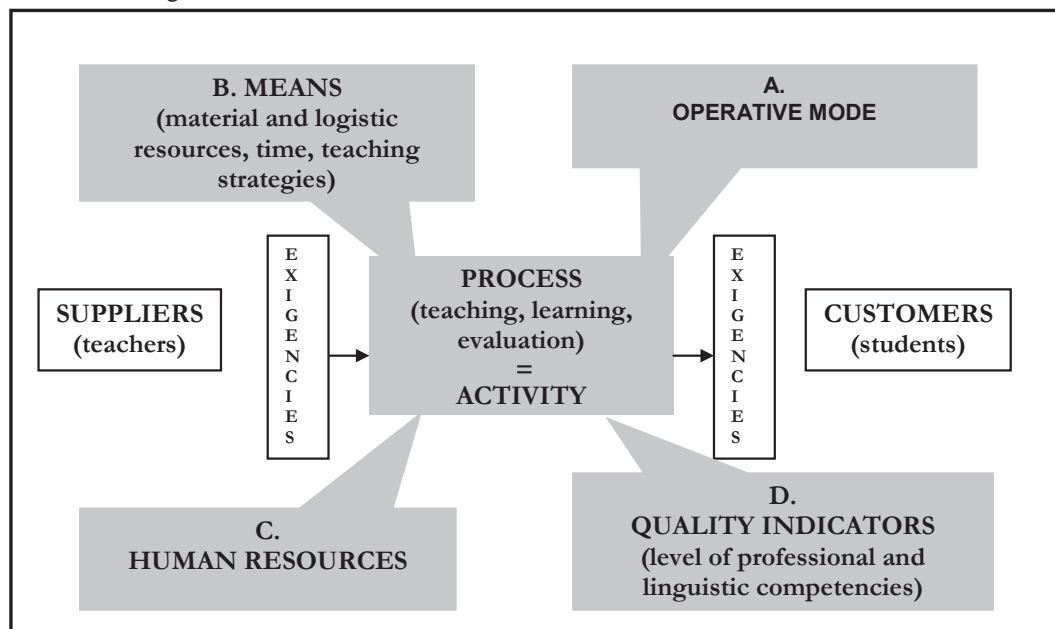


Fig. 2: The Process Model applied to the international master’s programmes (adapted from Filip, 2006: 71)

### 3. Quality analysis and improvement procedures of international master’s programmes: a case study

In what follows, we will be using the adapted Process Model represented above to examine three internationalized master’s programmes currently running at *Transilvania University of Braşov: Language Studies for Intercultural Communication (LSIC), Internet Technologies (IT) and Advanced Electric Systems (AES)*.

#### 3.1 MEANS (material and logistic resources, time, didactic strategies)

##### 3.1.1 Curricula

The curricula used for the three master’s programmes are similar to those from European universities. Thus, LSIC combines a number of disciplines from the curricula of British universities; IT has been synchronized with similar programmes from USA (Bloomfield College) and Europe (England, Germany), while with AES the curriculum is compatible with curricula from EU universities, such as TU Eindhoven, TU Ilmenau, Aalborg University and also American models. All these curricula have been attuned to the labour market requirements.

### 3.1.2 Resources and teaching strategies

There are some differences between the programmes, but also some commonalities. For instance, with LSIC, every teacher offers the course support and the required bibliography. In the IT programme the course notes are in English and the students have access to printed or electronic textbooks and to virtual libraries. AES supplies an English-only reading material to their students: it consists of online books and periodicals, accessible in the data bases acquired through ANELIS project and by our university. Also, every teacher offers the electronic course support in English, which is accompanied by a small glossary of professional terms. The teaching, learning and evaluation are facilitated via the e-learning platform, increasing the autonomous, self-organized learning abilities, according to the interactive model that focuses on the interaction between teaching, learning and evaluation.

The teaching strategies used at all master's programmes are directed towards the formation of professional and language competences. Moreover, these strategies aim at students' development (students' opinion request), personalization (the expression of their own opinion and personal experience), interpretation, positive or negative feedback. Worth mentioning here are also the adoption of teaching and learning methods based on European student-centred higher education paradigms, such as international projects focused on applying modern teaching/learning methods (Problem Based Learning, Project Based Learning), and the development of an educational IT platform that comprises professional courses and virtual laboratories (for ex. <http://vlab.unitbv.ro/velab>), *VET-Trend* - Leonardo da Vinci pilot/transnational network projects).

### 3.1.3 Time

The time allocated to the learning process does not differ significantly from one specialisation to another. We suggest that it should be optimized according to the difficulty of the subject, that is, the relation between the time of learning and the comprehension of the content matter.

## 3.2 QUALITY INDICATORS

According to Sharp (2009), the main quality indicator of the teaching/learning process should be the learning outcomes. As the author puts it, 'A scientist who graduates from a university must not be restricted to a speedy acquisition of training skills, but should possess the characteristics of a mature scientist who, apart from knowledge in the area in which he has been trained, must also possess the philosophical approach of his science and the educational perceptions of society' (2009: 169-170). If these outcomes are to be achieved, then students must engage in deep learning. Deep learning is characterized by activities such as: reflecting, applying to novel problems, hypothesizing, relating new information to principles, arguing, comparing and contrasting a range of perspectives. In the same line of thought, Lache (2009) maintains that the globalization of the labour market has changed the demands for higher education graduates in such a way that, besides good professional knowledge, there is the need for communication skills, entrepreneurial abilities and foreign language knowledge. Course attendance requirements, graduation rate and employment rate are quality indicators that could be also mentioned.

Next in this section, with respect to quality indicators, we will give an overview of the linguistic competences of both the teachers and the students involved in the three master's programmes of *Transilvania* University that could be internationalized. We will start with a short presentation of the recruitment strategies employed in each programme, then we will examine the benefits of linguistic competence and the importance given to the language component in the three master's programmes and finally, we will show how the Deming Cycle (see section 2 above) could be applied to the improvement of linguistic competence of both teachers and students.



### 3.2.1 Recruitment strategies

The three master’s programs seem to have different recruitment strategies as far as the language competence is concerned. These are summarized in the table below:

Programmes	LSIC	IT	AES
Teachers	Not available	Language competence certificate	Language competence certificate
Students	Not available	No initial evaluation	Language test

**Table 3: Recruitment strategies related to the English language competence**

If we first consider the Language Studies for Intercultural Communication (LSIC) master program, we have to point out that neither the teachers, nor the students need to demonstrate their competence in English as all of them (with minor exceptions) are graduates of foreign languages, so the language competence is quite homogenous. There have been cases of candidates who had graduated from other faculties (e.g. The Police Academy) whose level of English was tested by means of an interview. As far as the teachers involved in the other two master programmes [i.e. Internet Technologies (IT) and Advanced Electrical Systems (AES)] are concerned, they all have language competence certificates issued by the Centre for Modern Languages of *Transilvania* University, a support structure in our local teaching paradigm.

The difference appears in the recruitment of the students: in the IT programme, the candidates need not have their knowledge of English tested, while in the AES programme, students are required to take an exam which contains a language component. But, as most of the candidates are graduates of a study programme in English, namely Electrical Engineering and Computer Science, it is assumed that they have sound knowledge of English. From this point of view, they seem to be on a par with the candidates of the LSIC master’s programme.

### 3.2.2 Benefits of linguistic competence

We will next take a look at the benefits that the English language competences offer to the people involved in these programmes. Thus, there are mobility programmes for both teachers and students. The teaching staff can publish articles in international journals and can have a fruitful collaboration with members of the partner universities: Bloomfield College (USA), Heilbron University, Wiesbaden University (Germany) and Vienna University (for IT) and Aalborg University (Denmark) (for SEA). At the moment, LSIC is in the process of finding a partner university. Another advantage that is worth mentioning is the possibility to participate in international educational projects (LEONARDO) and in FP6-type of international contracts. Teachers can also benefit from specialization courses through TEMPUS international projects. At the same time, their good knowledge of English could be an asset in recruiting students from European and non-European countries. As for the students, the English language competence enables them to communicate with their foreign teachers (the IT master’s students have American guest lecturers in their first year, while the AES students are offered lectures in English by Danish professors), to travel abroad for internship, and to write and defend their dissertation in English. Last but not least, once they graduate from the programme, they will have better employment opportunities than most of the master’s students in other programmes run through the medium of Romanian.

### 3.2.3 Importance of language

One other aspect we will consider is the importance given to the language component in the master's programmes under examination here. We will only discuss this aspect from the perspective of two of the programmes: IT and AES. This is because, for LSIC, language is the main component and both the teachers' and the students' high competence is one of the greatest assets of the programme. Therefore, in both IT and AES there are foreign language option courses throughout the programme. When it comes to the role of language knowledge in evaluating knowledge of the field, in both of these programmes students are provided with bilingual terminology (English and Romanian), exam questions are formulated in both languages, and teachers give students extended time for preparing answers in exams in the foreign language.

The process management in higher education, related to teaching, learning and evaluation with respect to language competence can be described as a flow of activities aimed at improving quality in education. This starts by an examination of the status quo (at the Plan stage of the Deming Cycle) followed by the application of the other three stages of the cycle as a suggestion for the succession of activities directed at the quality improvement of the three master's programmes:

- **PLAN**

At this stage, an analysis of the existing situation seems necessary in order to detect the language needs of both the teaching staff and the students. This is meant to show how demands can be satisfied, what changes are required and the main results that must be acquired in view of the establishment of the improvement plan.

- **DO**

A small scale (university level) improvement plan may be implemented with respect to homogeneity regarding 1) the initial evaluation of the teachers' and students' language competence; 2) the existence of refresher language courses in the syllabi for the students and professional help for the teachers; 3) the weight carried by language competence in evaluation of professional knowledge.

In order for the improvement plan to be implemented, there appears to be a necessity for the following course of action:

1. Formulation of criteria for master's programmes with respect to foreign language teaching/learning/evaluation and establishment of required performance indicators.
2. Identification and formulation of solutions for quality improvement of the teaching, learning and evaluation activities as a result of going through the following steps:
  - a) Collecting data by:
    - designing and administering questionnaires to teachers and students;
    - forming quality circles (teachers and students involved in international master's programmes);
    - applying the suggestions system and brainstorming.
  - b) Data processing and charting (histograms, correlation diagrams, Pareto diagram).
  - c) Graphs and diagrams analysis.
  - d) Process measurement and analysis: the assessment of the results by means of the requested performance indicators.

The international master's programmes may also be analysed with respect to the present situation and trends making use of a SWOT scheme consisting of an internal analysis: strong and weak points, institution diagnosis and an external analysis: development opportunities, threats, results estimation under competitive conditions.

- **CHECK**

It consists of a permanent control and continuous evaluation (feedback) of actions designed to improve the quality of teaching, learning and evaluation and the identification of critical points.

- **ACT**

A strategy (objectives and actions) for the quality improvement of the teaching, learning



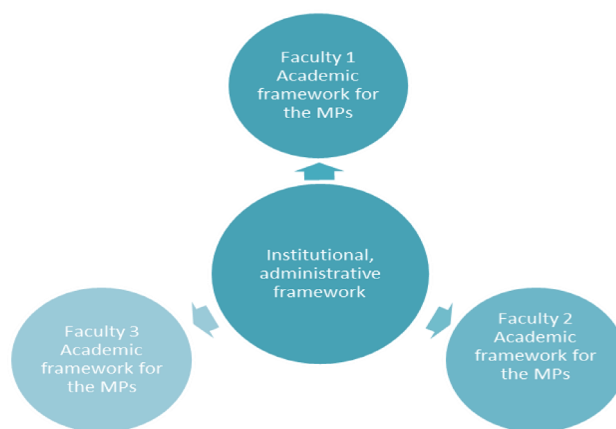
and evaluation processes of the international master’s programmes is formulated and the results are studied. If expected improvements are achieved, the existent operating procedures are changed and then, further improvements are planned to restart the cycle.

### 3.3 THE OPERATIVE MODE

In what follows we will focus on the organizational frame or, rather, on that particular area of the overall organizational frame which allows for the operative mode(s) of the master’s programmes to be put into effect. By ‘operative mode’ – a pillar in the Process Model discussed above (see section 2) – we refer to the succession of stages necessary for the progress towards the successful completion of a set of activities and tasks associated therewith. In our particular case, the key elements approached below are (1) the admission procedures, (2) the training process and (3) the evaluation strategies. We believe that by synchronizing these elements across programmes – which, as our survey has indicated, take on different forms depending on the faculty responsible for their implementation – and casting them into a joint operational framework would perceptibly enhance the quality of the processes involved in the management of such programmes and, by way of consequence, their ‘appeal’ to an international audience.

At present, as far as the three master’s programmes in question are concerned, we can say that they are all on the road to finding their niche on the international educational market but they are not actually there: none of the three programmes is fully ‘international’, as none of them fully meets the basic criteria requested of such types of programmes. As far as we are concerned, finding the ways to meet these basic criteria will be, it is hoped, the outcome of the ASIGMA Project.

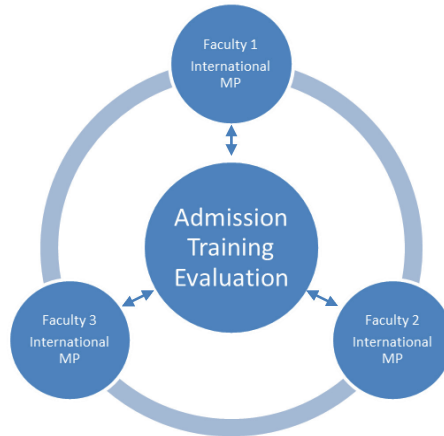
A brief survey of the status quo in our home institution has highlighted the fact that ‘internationalization’ is a matter of degree: for instance, only two programmes (IT and SEA) satisfy the international partnership criterion, only one (LSIC) offers full tuition in a foreign language (English), and with none of them can we speak of an international student population. The administrative and academic frameworks within which these master’s programmes are set and regulated institutionally and largely run locally, i.e. by each faculty, in a manner no different from the way in which the other, non-international programmes are operated. The status quo of the three master’s programmes (MPs) under discussion may be represented as follows:



**Fig. 4: The operational pattern of the Master’s Programmes under analysis**

The representation above suggests that there are no direct exchanges between the three programmes involved in the internationalization process, although their objectives are the same. To various degrees, each of them functions into what appears to be a rarefied, self-contained environment

shaped by content-specific considerations. This in itself should explain the discrepancies in the operational modes associated with each programme and, at the same time, the different perceptions that their respective decision-makers have on what an internationalization process should entail. As an alternative, more productive operational pattern we suggest the following:



**Fig. 5: A suggested operational pattern for international MPs**

From this vantage point, the key phrase is 'joint operational framework'. The rationale behind this alternative framework is based on the realisation that international master's programmes seem to have more things in common than many of us may be aware of: the distinctions between them are mainly (but not completely) curriculum-related. We suggest that, instead of the current, specialism-based approach, master's programmes might benefit more, organization-wise, if grouped and managed on the basis of their type, e.g. international/national, vocational/research, monodisciplinary/interdisciplinary. Whilst assessing the administrative implications of the type-based approach falls outside the scope of this paper, we can offhand shortlist some of its benefits, in strict reference to the three international candidate-programmes we have drawn on here.

1. In terms of the **admission procedures**, the common framework would encompass the promotion stage, the entrance examination procedures, particularly the language proficiency test. Based on the results of the language test, tutors could diagnose the potential problem areas, diagnose the student's learning progress and recommend remedial solutions early on.

2. This brings us to the **training process**. The international master's programmes, irrespective of their scientific domain, could use a common pool of expertise and practice in providing their students the opportunity to increase their proficiency in a foreign language (and hence, to improve their study skills) by enrolling into joint language improvement modules. Similarly, content teachers using, say, English as a working language could also take refresher courses or seek language-related advice.

3. The **evaluation** component of the operative mode targets all the stages of the learning process, from its inception to its completion. The commonality here might translate into a joint batch of language tests, a common quality benchmark.

#### **4. By way of conclusion: Benefits of sharing a common operational framework**

Overall, operating within a joint framework is likely to come with a number of clear benefits,

as follows: 1) consistency in the management and operation of the master's programmes, 2) sharing expertise and exchanging practices across various domains, 3) catering for the students' needs and interests by affording them the opportunity to attend relevant modules from another master's programme, e.g. academic writing courses, critical thinking workshops, etc., 4) avoiding redundancies and overlaps in the functioning of international programmes and, last but not least, 5) since it would operate on a 'unity-within-diversity' principle, the framework should be flexible enough to accommodate new international programmes, emerging from all areas of academic education.

### **References**

Filip, N., „*Ingineria calității. Instrumentele calității*”, Brașov, Editura Universității Transilvania din Brașov, 2006

Lache, S., „*Towards quality improvement in higher education institutions: sharing experiences for facing the challenges*”, *Quality Assurance Review for Higher Education*, Issue 1, no. 2, 2009, pp. 148-155

Sharp, N., „*Quality cultures and the assurance of quality in universities*”, *Quality Assurance Review for Higher Education*, Issue 1, no. 2, 2009, pp. 164-174

Vișa, I., „*Ten steps in the quality assurance of higher education – a case study in the Transilvania University of Brașov*”, *Quality Assurance Review for Higher Education*, Issue 1, no. 2, 2009, pp. 128-134

<http://www.eua.be/eua-work-and-policy-area/internationalisation-of-he-and-research.aspx>

<http://www.eua.be/eua-work-and-policy-area/quality-assurance.aspx>

[http://iota.ee.tuiasi.ro/~aadascal/curs\\_iac/IAC\\_Manual\\_Draft.pdf](http://iota.ee.tuiasi.ro/~aadascal/curs_iac/IAC_Manual_Draft.pdf)