

A Novel Prospective of Competitive Mechanisms for Enhancing Higher Education in Egypt

By

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Abstract

The primary purpose of this paper is to demonstrate the scope and potential impact of the competitive projects undertaken in Egypt through the Higher Education Enhancement Project Fund, HEEPF. Such a review can help policymakers, institutional leaders and stakeholders in tertiary education to identify and explore the most effective ways to pursue new phases that target at improving the quality, relevance and efficiency of higher education through competitive mechanisms. The established novel mechanism reflects an accumulated experience that required research oriented activities to enhance the process of implementation. The paper begins by delineating the topology of the current status of higher education in Egypt and a brief comparative analysis versus other neighboring countries. The salient features of the adopted competitive mechanism of HEEPF are elaborated then the administrative as well as monitoring and evaluation systems are outlined. Issues of collaboration of funded projects, quality control, performance appraisal, cost efficiency and other related items are deliberately discussed. Finally, lessons learnt from the first phase of application are concluded and scope of future phases is suggested. This paper crystallizes a global administrative system for effective operation of competitive mechanisms.

1. Structure of Higher Education in Egypt

Egypt has one of the largest higher education systems in the Middle East and North Africa (MENA) region, with a total enrolment of approximately 1.6 million university students and 0.13 million in two-year technical colleges [2]. The number of higher education students in Egypt is the highest in the region (per 100,000 inhabitants: 1,900 in Egypt compared to 1,132 in Morocco; 1,236 in Algeria and 1,253 in Tunisia) [19].

Higher education system in Egypt consists of public universities and post-secondary technical/vocational institutes besides private institutions. Of the age group 18-22 years, about 19% enroll in full-time higher education, and a further 3% are part-time students for a total of 22% of that age group [22]. Owing to the current economic situation in Egypt, several serious concerns about the quality of education were repeatedly reported such as over-crowding, inadequate infrastructure, under-trained faculty members, poor instructional materials and equipment, and lack of modern education technology [21].

MENA Flagship Report on Education [18] established a composite index of educational outcomes, which incorporates achievements in access, equity, quality, and efficiency in the provision of education at all three formal levels (primary, secondary and higher education) as shown in Fig. 1. It can be noted that the indices of quality and efficiency were nearly the same for countries having index value greater than 0.8 including Egypt.

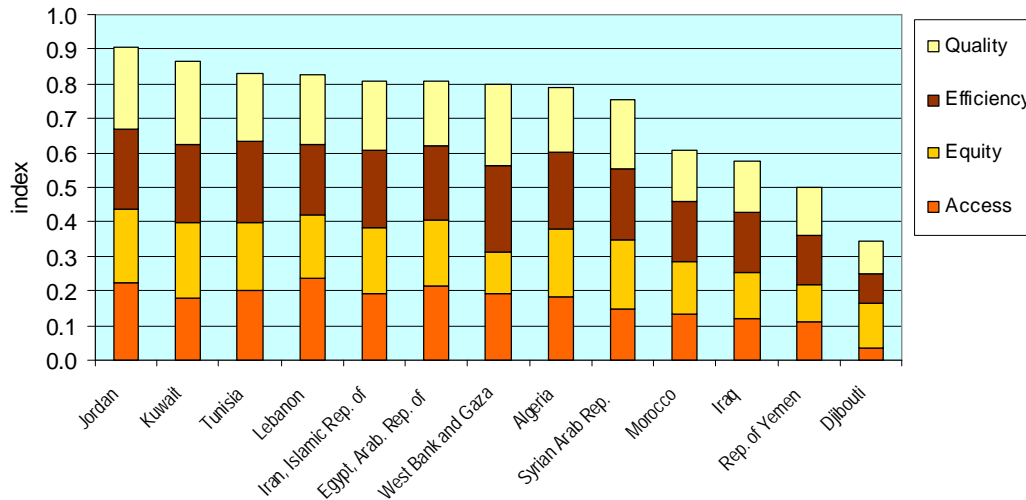


Fig. 1 Integrated Index for Access, Equity, Efficiency and Quality [18].

2. Higher Education Enhancement Projects, HEEP

The Egyptian Ministry of Higher Education and State for Scientific Research has been engaged in the multi-faceted HEEP, which is a part of a comprehensive reform strategy for higher education in Egypt [4]. The mandate of HEEP is, *to redress Egypt's need to upgrade educational quality, relevance and efficiency in public universities and technical colleges*. It focuses on improving three central areas:

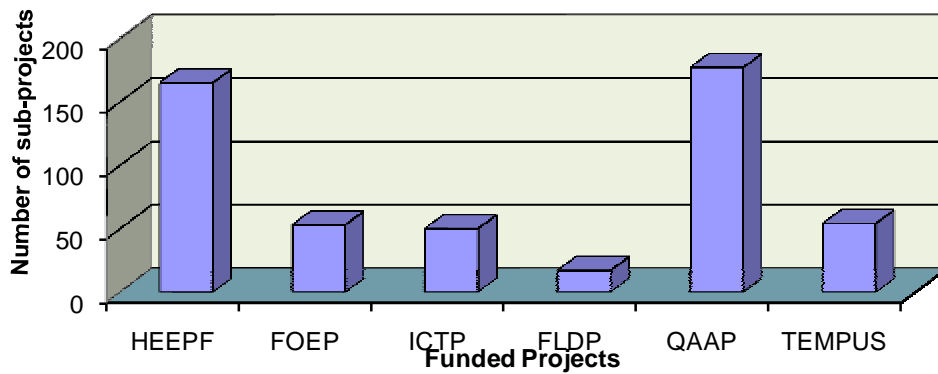
- Ø efficiency, through the reform of governance and management of the higher education system
- Ø quality and relevance of university education to respond to the needs for new learning technologies, equipment, and human resource development
- Ø quality and relevance of mid-level technical education.

Six priority projects have been selected for the initial phase of HEEP: Higher Education Enhancement Project Fund (HEEPF); Faculty-Leadership Development Project (FLDP); Information and Communication Technology Project (ICTP); Faculties of Education Enhancement Project (FOEP); Quality Assurance and Accreditation Project (QAAP); and Egyptian Technical Colleges Project (ETCP). The major component of the fund was provided through the International Bank for Reconstruction and Development (IBRD).

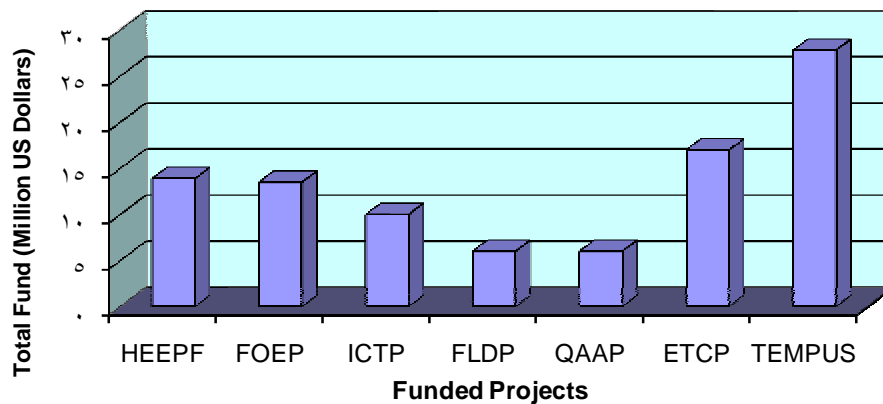
Competitive mechanisms were mainly applied through the first project HEEPf and partially through FOEP. HEEPf contributes to the three focal areas targeted by HEEP. Other sources of finance do exist and contribute to the overall impact. Examples of the grants commonly received for higher education enhancement are TEMPUS, SEDA, FF and JICA.

Figs. 2-a and 2-b depict the number of sub-projects at universities and technical colleges as well as the total allocated fund of each discipline. Keeping in mind that Tempus grant is shared among Egypt and two European Union member states [23], it can be noted that HEEPf is within the highest ranked projects with respect to the two items.

In the next sections, an overview of HEEPf work during its first phase implementation is demonstrated and the aspects of the novel prospective of competitive mechanism for higher education enhancement are highlighted.



a. Number of sub-projects at university/institutional level



b. Available finance for each project

Fig. 2 Comparison among the main higher education enhancement projects in Egypt

3. Higher Education Enhancement Project Fund, HEEPF

An essential first step was to formulate HEEPF vision and mission. HEEPF vision is expressed as the effective participation in the implementation of the strategic plans for sustainable higher education enhancement, through competitive mechanisms, to achieve distinction in the Egyptian Educational Institutes and promote them to international levels. Consequently, HEEPF mission is establishing effective and transparent management tools to fund, support, follow-up, monitor, evaluate, as well as insure sustainability of competitive projects to enhance higher education.

The main objective of HEEPF is to establish a sustainable competitive mechanism among Egyptian universities and Technical Colleges (TCs) through with the following specific objectives [5]:

- Ø Creating a competitive environment that would enhance and improve higher education institutions (departments/faculties/institutions and universities).
- Ø Encouraging the bottom-up, autonomous and decentralized approach (self-improving mechanism) for sustainable quality learning improvement.
- Ø Improving capabilities of institutions and academic communities to upgrade and consider modern scientific fields of specialization, interdisciplinary, multidisciplinary and innovative topics.
- Ø Strengthening collaboration and integration between higher education institutions and the community/industry.
- Ø Enhancing the inter/intra-management and administration information systems in the higher education institutions.

- Ø Optimizing the use and increasing the availability of common knowledge resources and lab facilities & infrastructure.
- Ø Empowering faculty members at public universities and higher education institutions to acquire basic skills needed for managing and implementing reform plans.
- Ø Cooperate with other HEEP projects and other funded projects to implement the national strategic plan.

HEEPF mechanism is thus based on bottom-up approach to enhance quality, relevance and efficiency of higher education in public universities and technical colleges, through academic and management development, restructuring and community interaction, aiming to qualify graduates to fulfill market demands for competence on national and international levels.

4. HEEP Administrative Aspects

The implementation of HEEP first phase commenced after the national conference for higher education enhancement which was held on Year 2000. The final draft of the corresponding national strategy was issued on Feb. 2002. A ministerial decree was issued on Mar. 2003 to endorse the beginning of HEEP. The administrative process can be categorized into three main stages [6]:

1. **Preparation stage:** the in-house work included formation of the steering committee, needs assessment and planning. On the other hand, field work required awareness, capacity building on “How to Write Projects Proposals” then Request for Proposals (RFP) followed by evaluation of proposals, selection, granting approval then contracting.
2. **Implementation stage:** It was essential to establish a rigorous system for the monitoring and evaluation then training projects management teams on “Projects Management”. HEEP standards of quality control of projects and performance appraisal were adopted. This necessitated the revision of the all deliverables, the application and dissemination for optimum utilization of the projects outputs and evaluation by stakeholders as such. Subsidiary researches and studies were indispensable based on the implementation requirements. This included copyright issues, intellectual properties, effective dissemination, design of forms and execution guidelines, preparation of manuals besides reporting templates, collaboration initiatives among sub-projects and some other items. Capacity building on project management, budgeting and financial control was essential to guarantee progress effectively.
3. **Post sub-projects Implementation stage:** after each sub-project fulfilled its contractual obligations and achieves the short term objectives, the sub-projects were handed over to the institution with a comprehensive sustainability plan. Close-out of sub-projects was an important stride that received careful considerations of revision and involvement of all related institutional parties in the process according to well-defined methodology. Impact assessment and tracer studies should be continued such that continuous improvements are ensured.

Concepts of Total Quality Management (TQM) are considered where the well-known implementation loop Plan-Do-Check-Act (PDCA) is carefully applied [3]. Fig. 3 illustrates the organization structure of the administrative system which includes four interactive teams on the executive domain.

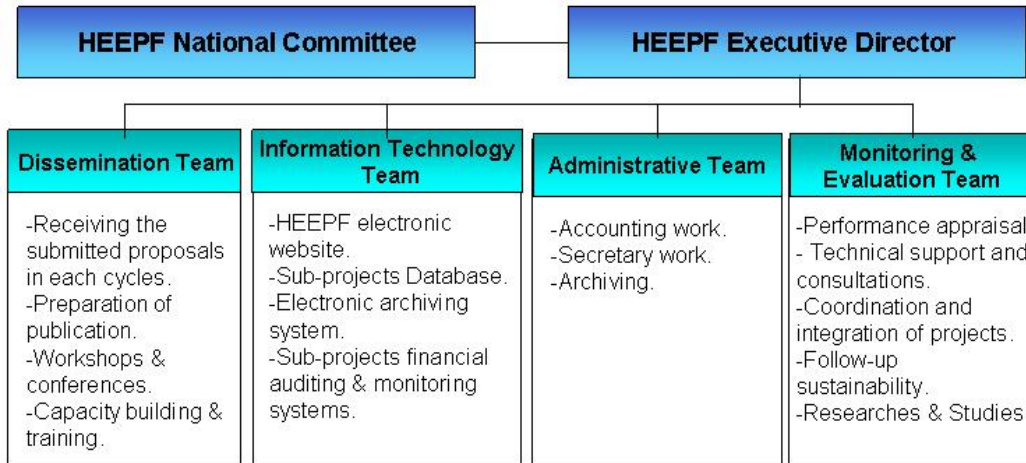


Fig. 3 Organization structure of HEEPF administration

4. HEEPF Needs Assessment

Fig. 4 illustrates the well-known pyramid with the confounding factors to be taken into consideration while outlining the needs assessment. HEEPF began its implementation through reviewing the existing experience from other on-going competitive projects such as Tepmus [23] and formerly Engineering Education Development Project (EEDP) which was initiated in Egypt in January, 1992 [1]. Adopting a rationale for the local level required for any previously used methodology to be re-tailored to cope with national requirements. This was translated to: 1) Express concurrent national priorities for enhancement, 2) Prepare short list of experts working that field, 3) Establish awareness policy, 4) Prepare HEEPF application form and operational manual, 5) Introduce the application and evaluation systems and 6) Address training needs. In turn, both inputs and outputs were figured out and the indicators of progress were set forth in order to provide tools for effective planning.

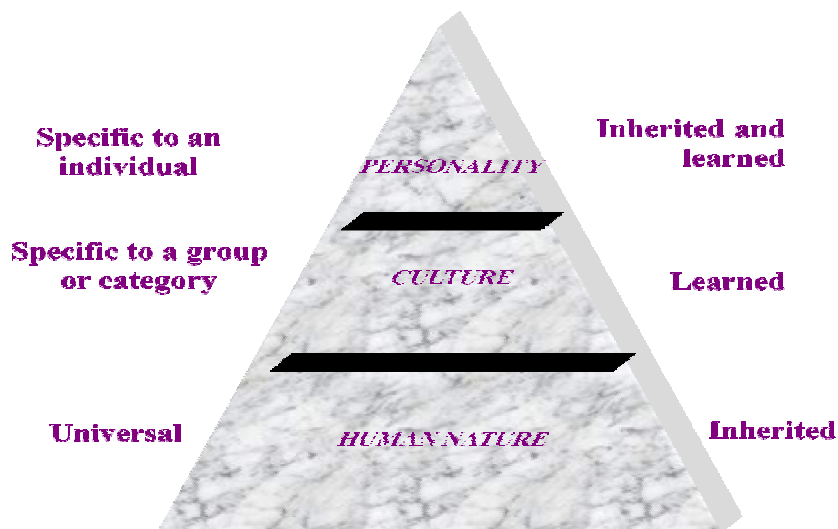


Fig. 4 Elements considered to assess HEEPF needs.

5. Selection of HEEPF Sub-Projects for Granting

Intensive awareness was a major step to disseminate the objectives and activities of the annotated competitive mechanism. Field meeting with academic staff revealed the distrust and suspicion of creating any change of the stagnant situation in higher education. However, confidence and reliance were built up through the transparent mechanism established by HEEPF. In-situ work was a mandate to inspire the first move towards mobility in institutions/universities. For the first phase of HEEPF project, four Requests For Proposals (RFP) were announced at six months intervals. Each project was evaluated by committee of three referees following pre-defined criteria. Fig. 5 depicts the salient features to be over-looked through the selection process. Technical along with financial aspects are reviewed and assessed individually. Selection of the accepted projects are ranked then approved for granting according to the announced national priorities [8]. In these cycles, 563 proposals were submitted and 158 sub-projects were approved for funding and hence contracted. About 82%, 11% and 7% of the sub-projects were categorized as academic, administrative and entrepreneurial, respectively. According to the grant size, 23%, 48% and 29% of the sub-projects were classified as large (grant up to 150,000 USD), medium (grant up to 100,000 USD), and small (grant up to 50,000 USD) sizes, respectively. Academic development included under- and post-graduate levels.



Fig. 5 Components for technical evaluation of submitted proposals

Transparency and providing equal opportunities were two salient features conjugate to every step. These led to confidence of the higher education sector in the developed competitive mechanism. Another feature was expanding the short list of experts, working on competitive mechanisms in higher education, for evaluation. This was a natural product of creating an academic community for the enhancement process of higher education. Unaccepted projects for granting were notified by the referees' comments and further elaborations were made upon request. Further assistance was devoted to universities that did not get reasonable number of accepted sub-projects.

6. HEEPF Researches and Studies

A great deal of efforts was devoted to conducting researches and studies. Because HEEPF system was dynamic, the scope of researches differed according to stage of execution. The studies includes: 1) Comparative studies on regional and international

initiatives for higher education enhancement, 2) Planning, preparing time schedules and cash flow, 3) Setting up the rules and guidelines for the implementation process, 4) Laying down concepts of proper monitoring and evaluation, 5) Incorporating concepts of financial control as well as methods of direct and indirect funding, 6) Introducing methods of quality control in directing competitive projects, 7) Effective dissemination and incorporation of public domain and 8) investigating Matters of intellectual properties and copyright.

7. Capacity Building through HEEPF

Development of the human resources was a key factor of success to appropriately implement the targeted plan. Several modules were established according to the recited training needs. Audience, Behaviour, Conditions, Degree (ABCD) strategy of writing learning objectives was used [17]. Training on how to write proposals, financial budgeting, scheduling according to Critical Path Method (CPM), project management, preparing progress reports were some selective topics required to qualify sub-projects teams for decentralized implementation of sub-project at institutions. Guidance on targeting specific benchmarks from international norm or existing reference standards of quality assurance and accreditation represented an essential part for academic development for both under-graduate and graduate levels. Developing Curricula, expressing programs/courses description and competencies matrix, conducting skill-gap analysis were fundamental topics for academic development. Fig. (6) depicts the main components required to identify the Intended Learning Outcomes (ILOs). This helped projects to incorporate effective teaching strategies such as critical thinking, problem solving, inquiry based learning, projects, experiments, discussion groups, guided reading and writing, case studies, cooperative learning as well as active learning strategies (e.g. think – pair – share, jig-saw, role play, simulation). E-learning represented an emerging concern among sub-projects which required special care to build-up an efficient crews in that field.



Fig. 5 Main training components of academic development modules.

Different training strategies for training have been employed including interactive sessions, seminars, workshops (group work), conferences, roundtable, focus groups, mock courts, exercises, panel discussions besides other methodologies. Kirkpatrick's evaluation model was used to address reactions, learning results, behavior results, and performance results [17]. This required carrying pre- and post-training tests for each specific module. The outcome of the capacity building process was the successful implementation of the projects up to the anticipated technical and financial levels.

8. HEEPF Monitoring and Evaluation (M&E) System

HEEPF management set a comprehensive monitoring system for the funded sub-projects as a mechanism of follow-up and assessment to make sure of the execution quality of activities and the deliverables (outputs/outcomes) be in accordance with the specified reference rules and standards. HEEPF management regularly reviews the monitoring system according to the work needs and performance progress of the funded sub-projects where four updates of the M&E guidelines have been already issued. Information regarding monitoring is released on the HEEPF electronic site and made available for the beneficiaries. The tasks of the sub-projects participants, universities, arbiters, evaluators and HEEPF committees depend on the M&E hierarchy shown in Fig. 6 which can be outlined as follows [6, 7]:

- **at the sub-project level:** between each sub-Project Manager (PM) and the sub-project team according to the system approved in the proposal.
- **at the university/educational institution level:** where University Projects Management Units (UPMU) have been established and contributed effectively in the M&E system. Control of expenditures is the joint responsibility of the sub-project management team and the financial officer of the UPMU. In case of noting any inconvenience throughout the sub-project implementation, the UPMU manager promptly reports to HEEPF.
- **at the HEEPF level:** Technical and financial monitoring and evaluation are carried out by the teams assigned by HEEPF to the sub-project. The monitoring team and selective peer reviewers maintain site visits after submission of the half annual reports remained continuous contact with the sub-projects teams besides coordination meetings and written correspondences and telephone calls for items requiring prior approval or no objection for execution.

Also interim reports have to be submitted quarterly between any two consecutive half annual reports. Data generated by grant recipients consolidate the statistical data from these individual reports to provide a description of the fund as a whole, from its logistical functioning to the cumulative impact of the sub-projects on teaching and learning.

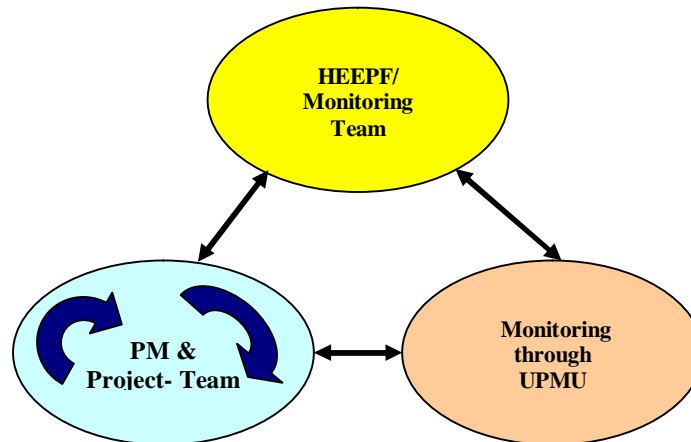


Fig. 6 Monitoring & evaluation System adopted in HEEPF project

After each sub-project submits its targeted deliverables and achieves its SMART (Specific, Measurable, Achievable, Relevant and Tangible) objectives, handing-over procedures of the sub-project to the institution/university commences. A Hand-over

committee (HOC) should be formed by the university president consisting then the PM submits the final report and a final conference is held where institutional staff, specialists, beneficiaries/stakeholders and HOC are invited. The HOC submits a report of remarks in view of the site visit, reviewing the final report, and the feedback of the attendees of the conference. The PM re-submits the final report after taking into account the HOC remarks and carrying out all amendments/changes/additions. The report should include items for the quality control measures, impact assessment of the sub-project, co-finance and sustainability plan for, at least, one year post the hand-over date.

The sustainability plan of each sub-project should be clearly elaborated and included within the final report of the sub-project and should be further endorsed by the university president as outlined in the hand-over statement. For M&E purposes for the sustainability plan, a sustainability monitoring committee (SMC) is formed by the university president. At least two site visits should be conducted to evaluate the implementation of the sustainability action plan during the subsequent year to the sub-project close-out.

Quantitative as well as qualitative indicators have to be considered in the M&E process. Of course, indicators of progress, completion, success, impact were thoroughly investigated for each deliverable as well as the timing of accomplishing the milestones of each sub-project. The well-established rules and guidelines for implementation-based monitoring as well as results-oriented monitoring in a performance-based régime were employed [17, 20, 25].

9. Collaboration among HEEPF Sub-projects

One of the main goals of the HEEPF was the collaboration between sub-projects with similarities among the fields of specialization (Horizontal Integration) and among sub-projects within the same university or educational institution (Vertical Integration). Collaboration aimed towards extending the benefits and the positive impact of these sub-projects to a wider domain of recipients with the following objectives [6]:

- 1- Intensively disseminate awareness of sub-projects' goals, activities and outcomes.
- 2- Effectively transfer knowledge and experience among sub-projects, disciplines and universities.
- 3- Increase the scope and number of possible beneficiaries.
- 4- Help strengthening the ties and exchange possible mutual benefits between different sub-projects.
- 5- Build up bridges of interaction that ensure better sustainability of the sub-projects after they phase out.

There were numerous procedural barriers needed to be eliminated in order for collaboration to become an integral component of the policy process of the various educational institutions collaborating on joint efforts. Also, Specific steps were taken at the community, organizational and individual team level to support collaboration efforts.

Fig. 7 illustrates the model used for collaboration processes. As a matter of fact, there was considerable overlap among the different areas within the same sub-project and consequently among different sub-projects i.e., in an academic program, information technology is utilized as one of the knowledge resources that could be tooled towards capacity building among faculty to ensure quality in education.

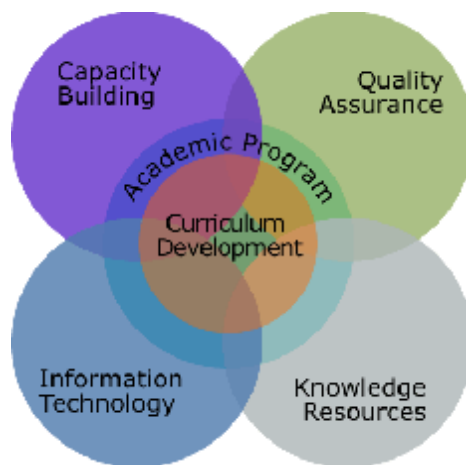


Fig. 7 HEEPF collaboration process among sub-projects

This approach helped tackling many areas of collaboration among sub-projects that included: 1) Mutual exchange of experience (e.g. problem solving), 2) Unification of approach, 3) Joint Training, 4) Information Technology (IT) prospective (eg. data base, Learning Content Management System (LCMS), Virtual Lab), 5) Share of facilities (eg. CDs, Green Houses, Training Centers, Digital Libraries.....), 6) Coordinated courses/programs and auxiliary courses/curriculum, 7) Avoid duplication of items, 8) Integrated web sites, 9) Auditing and peer revision, 10) Joint publication, 11) Consultation, 12) Management scheme, 13) Dissemination items (website, brochures, newsletter, workshops, conferences, others) and 14) Sustainability plans (joint projects, specialized units, others).

10. HEEPF Quality Control Methodologies

A rigorous system is developed within HEEPF procedure in order to ensure quality of work. Internal and external auditing are activated on financial as well as technical aspects. The work flow depends on sub-committees decisions rather than individual actions. Time plans are strictly followed with pre-defined tolerances (float). The overall time limits are respected such that activities on the critical path are well-valued. Follow-up the actual cash flow versus the planned budget disbursement is always esteemed as a key indicator of progress. Consequently, contractual obligations of HEEPF were fulfilled.

Another aspect is HEEPF meticulous control of expenditures through each sub projects. The financial system is guided by the approved contract budget of the sub-projects and serves several purposes including: 1) Planning and recording realistic projection of the funding required at specific point to ensure that the goods and services will be available when needed, 2) Tracking input against planned activities for management control, and 3) Providing a basis for reporting on use of financial or in-kind resources for implementation, evaluation, and audit purposes during the project life-cycle. All budget expenditures should be Allowable, Reasonable, Allocatable and Approvable (ARAA). This helped applying the concepts of cost efficiency and cost effectiveness besides fund raising for co-financing the activities.

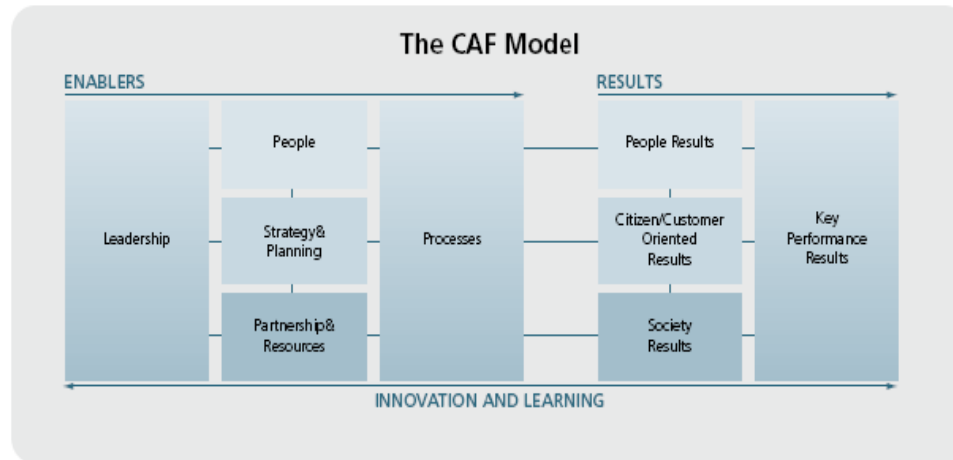
In all sub-projects training materials, pamphlets, booklets or any scientific publication in hard or softcopy format should be subjected to technical revision. Peer reviewers from national and international institutions were consulted to impart instructive remarks and amendments. HEEPF site visits and handing-over processes always

included specialized experts in the field of the sub-project for evaluating and rating the performance. Such a methodology provided more in-depth for each sub-project and inaugurated the collaboration with other projects and with the community as such.

11. HEEPF Performance Appraisal

Performance appraisal of HEEPF was conducted through many methodologies including the following [7]:

1. **Self Assessment (SA):** "Common Assessment Framework, CAF" model according to total quality management rules, shown in Fig. 8, was employed [3]. Analysis was performed to capture Strength, Weakness, Opportunities and Threads (SWOT) and actions plans were drawn and undertaken [6].



Based on the EFQM-Model

Fig. 8 Common Assessment Framework model used in the self study [3]

2. **Evaluation by HEEPF National Committee:** HEEPF National Committee was formed by ministerial decree to follow-up and approve the detailed implementation plane throughout the various stages of implementation. On quarterly basis, meetings are held where HEEPF progress reports are discussed and recommendations to improve the performance are given. In addition, some administrative issues are further raised to the board of the Project Management Unit (PMU) of HEEP.
3. **Evaluation by sub-projects teams and stakeholders:** All the sub-projects and the stakeholders submitted questionnaire to HEEPF and the Statistical analysis is performed. Also Questionnaires and discussions through the HEEPF Mid-term Conference
4. **Evaluation by Universities UPMU:** The 17 Universities, 5 Technical Colleges and Ministry of Higher Education (MOHE) submitted their evaluation of the HEEPF sub- projects and the competitive mechanism and its unique ingredients.
5. **Evaluation by Supreme Council of Universities (SCU):** HEEPF performance was monitored and evaluated by university president nominated on behalf of the Supreme Council of Universities.
6. **Third party evaluation:** The Association of Egyptian American Scholars (AEAS) submitted evaluation report as an external evaluator of HEEPF performance and the associated sub-projects. In addition, External IT consultants were advised to evaluate HEEPF website since updates along with refinements and data entry of HEEPF data base system besides HEEPF accounting system were continuously made.

7. **IBRD supervision missions:** Nine World Bank supervision missions have been conducted and Aide memoirs have been submitted. Constructive remarks were thoroughly considered through the implementation phase.
8. **Evaluation Conferences:** A national conference, 2 major meetings of sub-projects management teams, and 4 specialized workshops including members of the scientific committees and most of the faculties' top managements were held where deliverables of the sub-projects were demonstrated and presented and feedback of the attendants was given. Such a mechanism was very useful to fill existing gaps between the various stakeholders, provide adequate dissemination and enhance optimum utilization of the outputs.
9. **Impact Assessment:** The impact assessment of the higher education enhancement projects, which is still under execution, aims at the continuous improvement of the enhancement process [24]. At the current phase outcome assessment rather than long-term impact is investigated attributable to the recent implementation of the projects. The study has been designed to meet three objectives [7]:
 1. To develop a sustainable impact assessment system, including its tools, which can be easily used, modified and/or institutionalized as a routine assessment procedure that suits different educational/academic environments, and to produce comparable data.
 2. To assess collective impacts of HEEP and the individual impact of each project and hence HEEPF.
 3. To pinpoint problems/drawbacks associated with the application of the impact assessment, and to recommend, the action/remedies needed to ensure sustainability and integrity of the impact assessments system to be developed.

According to study design the following steps are targeted:

- i. Develop outcome indicator-based logical of the framework matrix.
- ii. Provide the conceptual design of the entire study.
- iii. Conduct pilot study then carry out modifications of the tools for data collection.
- iv. Carry out the comprehensive data collection, analyze, provide statistical analysis, estimate sampling errors, draw conclusions according to results significance and prepare the final annual report.

The study focuses on developing the outcome indicators for 1) General enhancing framework, 2) Curriculum, 3) Teaching and assessment, 4) Scientific Research, 5) Electronic technology and 6) Leadership and organization.

Fig. 9 illustrates the different methods of data collection with those used in the study pointed by an arrow. Data collection included both quantitative and qualitative methods where the former included check lists, questionnaires, documentation review and structure interview while the latter included in-depth semi-structured interview and focus groups. The participants involved higher administrative, staff members, graduates and students.

Quasi experimental approach was employed where cohorts were considered due to the difficulty in conducting a true experimental study with the well-known characteristics: randomization, control group and manipulation of an independent variable. This was due to the fact of the substantial difficulty in inclusion of comparison groups and the absence of baseline data. Repeated measurement over time will allow identification of changes that can be attributed to projects' effect. Among each cohort, distinction was made between beneficiaries who were participating in each of the HEEP projects components and non-beneficiaries who did not participate in any of these projects. In turn an exposed group of beneficiaries and a non-exposed group of non- beneficiaries

were considered. Sampling followed well-established statistical rules to outline the sample frame then selection. Primary sampling units (PSU) were specified for each category and for different selective institutions for 95% confidence limit.

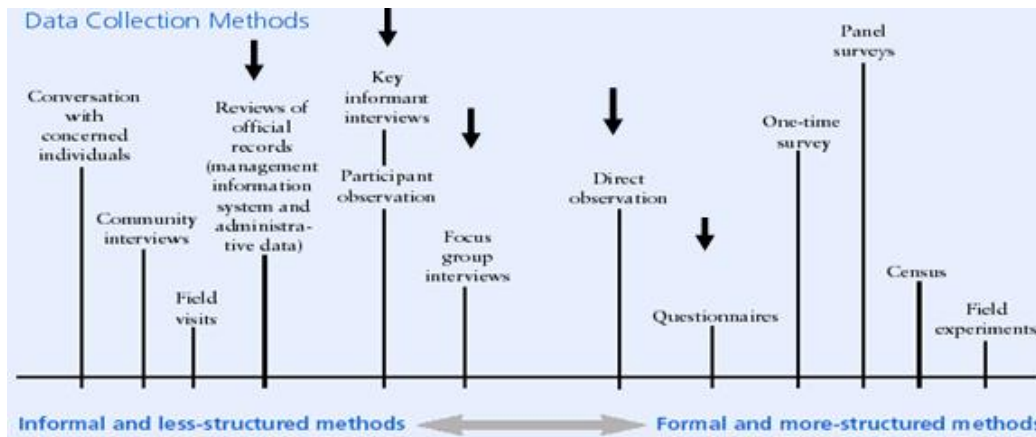


Fig. 9 Data collection methods used in the study (marked with arrows)
(Fig. quoted from reference [20])

12. HEEPF Achievements in the First Phase [4]

The distribution of the sub-projects among faculties and universities was broadly dispersed where sometimes groups of sub-projects were lumped within the same institution/university. Albeit disadvantageous in some aspects, this provided a good likelihood of establishing centers of excellence in particular locations. Fig. 10 is an abstract representation of the different areas of educational enhancement in the universities. It can be noted that most of the sub-projects were devoted to applied fields and a necessity to instill other disciplines is needed in the forthcoming phases. Fig. 11 demonstrates the themes of the implemented sub-projects. It should be pointed out that some sub-projects included more than one theme such as program development and e-learning for instance. In as much as many themes evolved almost from scratch such as e-learning and simulation/virtual labs, more emphases should be devoted in a more professional manner to serve national demands in these areas.

Table 1 lists deliverables indicators for the first phase 2003-2007 as related to the main objectives of HEEPF. The variety of the deliverables was evident since decentralized system of development and enhancement was generated. Also a broad variety of beneficiaries (included in other categories) included post-graduate students, administrative staff, staff members and assistants, technicians, practitioners.

HEEPF constructed a continuously updated web site (www.heepf.org.eg) which is linked to other HEEP projects and HEEPF sub-projects. The web site is prepared bilingually using English and Arabic. The monthly visits ranged between 5200 and 7700 through the previous six months. Also more than 19 publications and 3 periodical brochures in addition to flyers were distributed to members of the civil society. Moreover, many awareness seminars, workshops and publications of HEEPF sub-projects themselves provided a wide-spread dissemination about the competitive mechanism. By the virtue of HEEPF, the number of proposals submitted to other donors and agents increased considerably. More over many of HEEPF PM obtained further Tempus and FP6&7 grants to continue their enhancement initiatives.

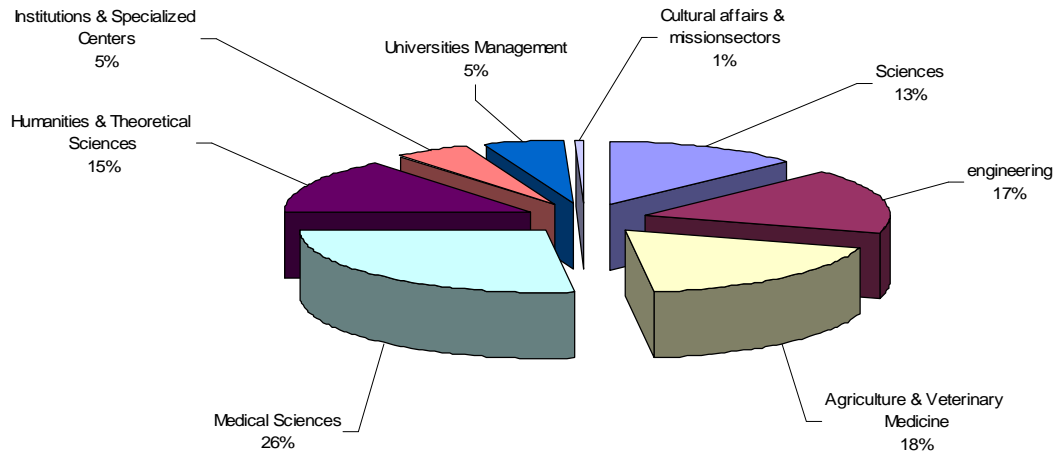


Fig. 10 Classification of HEEPF 1st phase sub-projects according to specialization

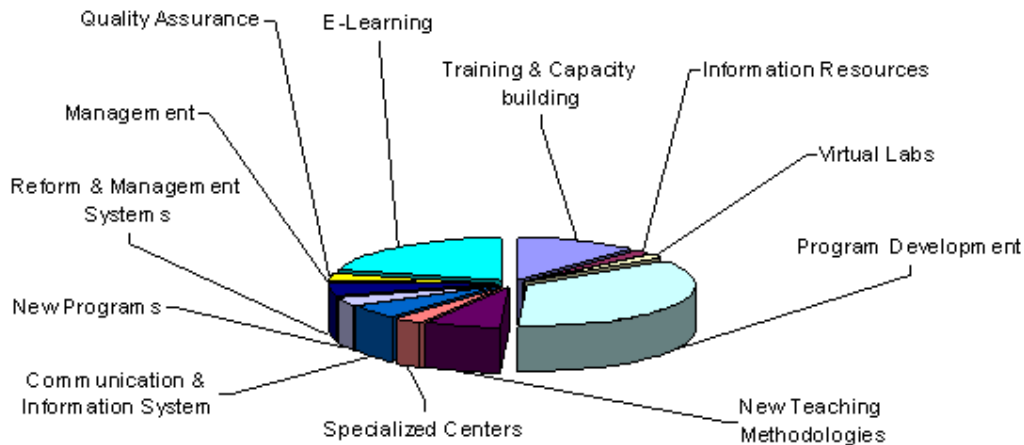


Fig. 11 Classification of HEEPF 1st phase sub-projects according to theme

Team work promotion was a pronounced achievement obtained inside the institution especially from different specializations to provide the final deliverables. Young staff members of more than 60% were involved in sub-projects implementation. Also diversity of staff ranks served in groups form to induct success of the overall system. Concepts of quality control, total quality management and decentralization were emphasized within the academic community. This enriched the availability of well-trained cadre in management to provide better future leaderships.

Table 1 HEEPF deliverables through the first phase

| HEEPF Objectives | Deliverables (Output/Outcome) | Indicators | | |
|--|---|---|-------------------------------|--------|
| 1. Create a competitive environment to improve and enhance Higher Education Institutes | <ul style="list-style-type: none"> 563 proposals have been submitted over 4 Cycles where 158 sub-projects were selected for fund in Egyptian universities are funded. (41, 36, 36 and 45 in the 4 cycles). | Institutions participated in HEEPF sub-projects | 17 universities, 5 T/C & MOHE | |
| | | Faculties participated in HEEPF sub-projects | 90 | |
| | | Direct beneficiaries | undergraduate students | 121722 |
| | | | other categories | 100915 |
| | | Indirect beneficiaries | undergraduate students | 89899 |
| other categories | 209747 | | | |
| 2. Increase collaboration with the community | Establishment of relations with the community | Specialized/interdisciplinary centers have been incorporated with HEEPF sub-projects. | 59 | |
| | | Cooperation protocols with community organizations have been signed and activated. | 39 | |
| | | Specialized units for sustainability purposes | 64 | |
| 3. Improve capabilities of academic communities | Trained staff members on preparing proposals. | <ul style="list-style-type: none"> 563 proposals have been already submitted for evaluation. | | |
| | Trained teams to direct and manage HEEPF sub-projects in the most efficient manner. | <ul style="list-style-type: none"> Conducting 10 PM workshops. 789 Staff members trained on how to manage HEEPF sub-projects. Conducting 6 Financial workshops. 260 Staff members and accountants trained on the preparation of HEEPF financial report. All sub-projects have overcome their problems in implementation. | | |
| | Trained teams with good capacity in new learning and management methodologies. | <ul style="list-style-type: none"> 2 specialized & On-line workshops. 64 attended 2 specialized & On-line workshops. 519 courses have been electronically prepared. 71 virtual experiments have been constructed. 2 MIS have been effectuated. 2 HMS have been developed. 3 digital libraries have been developed and automated. 1 database for human recourses planning. 2 database for educational resources. | | |
| | Academic deliverables up to the technical standards | New under-graduate programs | 5 | |
| | | New postgraduate programs | 35 | |
| | | Upgraded under-graduate curricula | 10 | |
| | | Upgraded post-graduate curricula | 44 | |
| | | Upgraded and developed courses | 509 | |
| | | Laboratories upgrading | 122 | |
| | | Simulation/Virtual labs | 155 experiments | |
| | | e-learning and on-line courses | 453 courses | |
| | | Knowledge resources | 7 | |
| | | IT sub-projects | 16 | |
| | MIS, HMS & Database | 9 | | |
| Quality assurance systems | 15 | | | |
| Management and reform of higher education institutes. | 9 | | | |

13. Culminated Operational System

Compilation of the learnt experience through HEEPF indicated the importance of incorporating several components in an organized order for any competitive mechanism. The suggested lunar system shown in Fig. 12 with counter-clock wise rotation, illustrates the authors' perception for an appropriate administrative process. It can be noted that the cycle is not a closed loop as the process of enhancement has no end. Such a system should be dynamic, simple, proactive, rigorous, adaptable, and of high technical level. People involvement is a key indicator of success. Quality measures should be taken into account for all implementation stages. Emphases should be directed to system development including capacity building and process management rather than providing an extra infrastructure or equipping new labs.

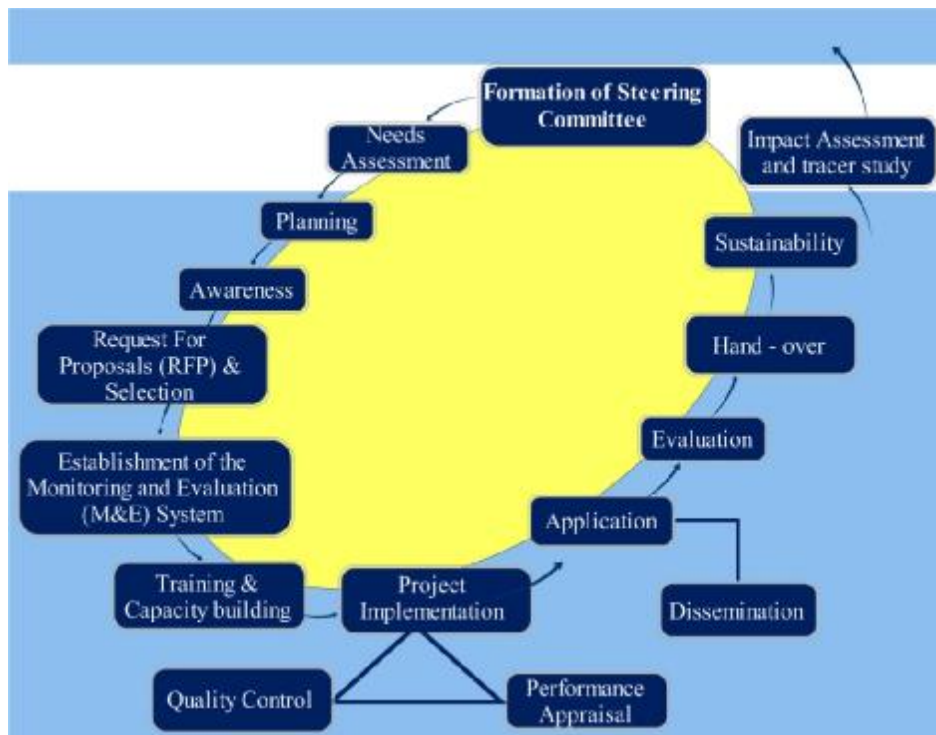


Fig. 12 Suggest administrative cycle for competitive projects

14. Concluding Remarks

Through the developed experiences from the implementation of HEEPF first phase, many lessons were learnt and the following items have to be figured out:

1. The developed competitive mechanism proved to be very demanding and effective in providing wide-spectrum of good ideas and provided a well-trained cadre capable of directing projects and serve in managing unexpected risks.
2. Efforts should be integrated to cover the wide-span of the main pillars associated with higher education including the four shown components.
3. Achieve human, management and technological skills development in all economic and administrative activities by developing high caliber leaders and managers at all management levels within the Administration.



4. Upgrade the technological capacity and the performance level of the institution/university and related units and instill the culture of self development and continuous capacity building.
5. Supply consulting and research services and support the administrative and technological activities in all government and public entities.
6. Enhance the international and regional cooperation in human and technological development.
7. Consider all academic components for development rather than individual parts as failure takes place in the weakest chain. Six components are recommended for consideration: 1) Institutional context and commitment, 2) Curriculum and Instruction, 3) Faculty Support, 4) Student Support and 5) Evaluation and Assessment and 6) Planning for sustainability and growth. Each describes several elements essential to quality and accreditation.
8. Pay more attention to development of student and academic services including: 1) Admissions & registration, 2) Enrollment advising, 3) Academic advising, 4) Financial aid, 5) Career counseling, 6) Library resources, 7) Textbook ordering, 8) Technical assistance and 9) Disability assistance.
9. Maintain transparency of approach and execution according to clear and pre-announced policies is an important aspect competitive mechanism. This provided confidence within the academic community that further changes in higher education might be implemented on the same solid ground.
10. Comply any enhancement effort in an obvious manner to the following aspects: 1) Consonance with institutional mission, 2) Realistic, systematic, comprehensive planning, 3) Integration into institutional governance, 4) Emphasis on academic quality, 5) Faculty involvement and development, 6) Equivalent access and outcomes and 7) Institutional capacity.
11. Consider gender issues, equity and direct attention to the underlying interaction of three elements: 1) Good engineering for infrastructure, furniture and lab equipment, 2) incentives for working teams aligned with outcomes, and 3) greater public accountability measures to give citizens voice. All the three elements of reform are critical, and if policy makers focus too much on one element and neglect the others, future education reforms are not likely to produce the desired level, quality, or the anticipated educational outcomes.
12. Competitive culture should be further inserted within the Egyptian community in many aspects to overcome the already on-going inherited routine régime such that continuous improvement could be the key issue in higher education.

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