

HIGHER EDUCATION PLANNING IN LIBYA: SEARCH FOR SYSTEMATIC CRITERIA

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ABSTRACT: Recent studies on Libyan higher education have provided strong evidence that the higher education system in Libya suffers from a lack of appropriate planning mechanisms and procedures. This however, can be strongly attributed to the unavailability of appropriate standard criteria. During the 1990s, a network of public higher vocational education and training colleges (PHVETCs) was introduced to enhance the supply of highly skilled manpower. These colleges have seen substantial increase and in 2000 there were 85 PHVETCs across the country. Motivated by relevant literature, an attempt was made to propose systematic criteria for the establishment of new, or the development/termination of existing ones. These proposed criteria are well-supported in the literature and their appropriateness was approved by experts in the field. Overall, it is hoped that the suggested criteria would offer systematic basis for making decisions regarding the expansion of higher education opportunities in the country.

Keywords - Criteria, Higher Education, Libya, Planning.

1. INTRODUCTION

The issue of higher education planning (HEP) has received considerable attention over the past few decades (Cortese 2003; Hopkins 1981; Unesco 1975; Nast 1974). However, according to Nast (1974), the planning of higher education is one of the most important and most complex problems facing every country. This is partly due to the fact that HEIs, unlike lower levels of schooling, tend to serve a wider geographic area and a larger population (Gould 1978). These specific characteristics create some difficult planning issues for educational professionals. However, these issues have been of particular interest to researchers and policy analysts in the field (Alfaidy and Ibrahim 1997; Slaughter 1995; Hammons and Nunn 1994; Hammons and Guillory 1990; Moodie 1988) who have also stressed the importance of determining standards and criteria for the purpose of assessment of various aspects of higher education.

Over the past few decades higher education institutions (HEIs) in Libya have seen massive numerical expansion. Nonetheless, despite positive impacts of this expansion on the Libyan society a number of analysts argue that HEIs have increased in numbers at the expense of qualitative aspects. They have further argued that higher education systems in general suffer from lack of appropriate planning mechanism and procedures which can be strongly attributed to the unavailability of appropriate standards criteria (Albadri, 2006).

The purpose of this study is to determine a set of criteria for the establishment of new, or development/termination of existing Public Higher Vocational Education and Training Colleges (PHVETCs). The PHVETCs are post-secondary institutions and offer theoretical and practical based curriculum. The main objective of these colleges is to provide highly qualified human resources to fulfil the requirements of the economic and social transformation plans (GDHVECs 2000). In 2000, there were 85

PHVETCs across the country [according to Gannous and Aljoroushi (2004, p. 4) estimates, there were more than 120 public and private higher colleges in 2004].

The rest of the paper is organised as follows. The next section provides general background about the historical development of HEP in Libya. Section 3 briefly describes the methodology employed in this study. Section 4 reviews relevant literature. Section 5 describes the proposed criteria for PHVETCs. Section 6 discusses the results of the empirical analysis. Section 6 concludes the paper.

2. HISTORICAL DEVELOPMENT OF HEP IN LIBYA

Development planning programmes in Libya are a very recent phenomenon. At the time of Libya's independence in 1951, there was little hope for a viable future due to small population, which was poor with a very low literacy level, and lack of a resources with an economy based on subsistence farming supplemented by foreign aid (Higgins 1959). As far as HEP is concerned, it is important to note that during the colonial period (1551-1951) there were no HEIs in the country. In fact it was not only HEIs that were unavailable, but primary and secondary levels were very few (Algomaty 1978; Wheeler 1966). However, five years after the Independence the Faculty of Arts and Education "the nucleus institution of the Libyan University," was established in 1956 (Bubtana and Sarakbi, 1992).

According to Algomaty (1978), the year 1951 had been considered a watershed between two eras; the colonial era where the country was deprived of national administrative organizations and educational systems and the era of independence where the need for administrative organizations consistent with the demands of this independence and objectives. It is obvious that the discovery and exploitation of oil resources during the 1960s had marked a turning point on the development of the country. The sizeable revenues from the production and export of oil enabled the government to prepare and implement a number of ambitious socio-economic development plans (Buru et al, 1985).

Thus, during the 1970s [described by Ghanem (1985) as the fat years] oil prices and revenues were very high. As a result, the government's income from oil increased and planning continued but with a different strategy, as development planning became highly centralised within the hands of the government which invested heavily towards improving the quality and widening of scope of educational aspects. Another picture of progress in the area of education was the focusing on higher education and scientific research. The importance of this policy cannot be overemphasised as it aimed at coping with modern technological advances in development so that education would be able to meet the needs of qualified manpower in various areas.

At the time, there was a general agreement among many observers, that higher education in Libya has witnessed significant growth in both absolute and proportionate terms. This significant growth is not a surprise, bearing in mind the priority that was given to higher education, as a powerful instrument for socio-economic mobility and social stability as well as a main provider of highly qualified manpower urgently needed for development plans (Alawar, 2006).

However, between the early 1980s until late 1990s the government abandoned planning work and adopted a series of ad hoc annual investments (Sharif, 2000). This was as a result of the cut-backs in Libyan budgetary allocations due to the reduction in oil revenues combined with the international economic sanctions and embargo imposed on Libya between 1992 and 2000 (Matar and Thabit, 2003).

In 1980 the whole educational system was evaluated and new policies and objectives were set out with what was known as the New Educational Structural Plan. According to this plan, higher education should be closely linked to general education levels and is a complement to it, through the in-depth specialized study and scientific research to ensure the development of the society in various fields. However, as a result of the unstable economic situation many of the initial educational objectives have not completely been attained (El-Hawat 2003; Keibah 1998; Alfaidy and Ibrahim 1997).

It is certain that Libya is now going through a transition period from a central planning economy to a market-oriented economy (Porter and Yergin 2006). This recent shift, however, as opened the door widely for the private sector to invest in higher education to meet the increasing social demand on its services. As a result the number of HEIs increased significantly but the focus of the expansion in the system has been on the quantitative aspects rather than the qualitative ones.

Although almost five decades have passed since the establishment of first HEIs in the country, HEP in Libya has not achieved satisfactory success. Findings from related studies (Albadri 2006; Elzaitni and Lees 2006a and 2006b; Gannous and Aljoroushi 2004; El-Hawat 2003; Keibah 1998) have strongly suggested that higher education in Libya suffers from lack of appropriate planning mechanism and procedures and provide clear evidence of the unplanned nature of the establishment and location of HEIs in the country. As a result, of the absence of planning procedures HEIs in Libya were unable to satisfy the actual needs of the society for skilled and qualified human resources. These studies also show that HEIs have increased in numbers at alarming rates at the expense of the qualitative aspects. Related to this issue Gannous and Aljoroushi (2004, p. 4) present some interesting and challenging questions in these words:

Does our society of just five million; require more than 40 private universities, and 20 of what is known as departmental universities in addition to the 7 comprehensive universities and more than 120 public and private higher colleges? The quantitative increase in higher education institutions at the expense of quality, which may have so many negative consequences namely: graduates of lower attainment level, who do not qualify for any actions of positive impact. Nevertheless, they are employment seekers (if they get any) and will earn salary for their work. As a consequence, the society will suffer two defeats: 1) spending on weak education and 2) recruitment of large number of graduates, whom their lower production does not fulfil the society's ambitions.

In view of above discussion, it is clear that, the lack of planned approach has brought about negative impacts in the overall efficiency of HEIs in the country. Moreover, this situation of uncontrolled increase in the number of HEIs at the expense of qualitative outcomes, can be strongly attributed to the unavailability of appropriate standard criteria (Albadri, 2006). The availability of such criteria would provide planners and decision makers in the field with concrete measures or methods in how to establish HEIs.

3. METHODOLOGY

As relatively very little research has been conducted covering the problems and issues faced by VET programmes in Libya, the methodology that was selected is qualitative in nature. A qualitative approach has the potential to provide further explanation, rich

data and reveal complexity in an area where little research has been conducted (Amaratunga et al, 2002). To establish the proposed criteria the research methodology consisted of extensive literature as well as interviews with experts in the field of higher education in Libya. The literature provides considerable information which aided the formulation of the initial proposed criteria.

The qualitative interview study was conducted with experts in the field of higher education in Libya to provide accurate expertise opinion regarding the proposed criteria. Expert opinion approach is widely used and accepted among many researchers. It is regarded as a useful tool for exploring and understanding issues where information is lacking and additional research is needed. "Expert opinion is often sought with regard to unknowns in a decision-making setting to improve quality of the decision-making process." Using such a useful methodological assessment tool, the analysis of findings was also enhanced and corroborated the findings in the literature (Gelfand et al 1995, p. 598).

4. RELEVANT LITERATURE

It is perhaps convenient to start by defining the term criterion. Criterion may be defined as: "an established standard by which something may be judged or examined" (PED 2006). Also, Sadler (1987, p. 194) defines criterion as "a distinguishing property or characteristic of any thing, by which its quality can be judged or estimated, or by which a decision or classification may be made."

The domain of forming and developing standards criteria for the establishment, or development of HEIs has not been adequately studied. However, the relevant literature has shown different attempts to determine standards and criteria to fulfil specific aims in the following domains: establishing new HEIs (HRC 2003; HKJ 2003; PEPC 1991; Hammons and Nunn, 1994), college administrators (Hammons and Guillory, 1990), student selection and admissions (Harman 1994; Pearse 1978), evaluating non-traditional programmes (Gooler, 1977), affiliation/validation (Hopkin, 2001), quality management and performance (Grant et al 2002; Borahan and Ziarati 2002, Williams 1988; Billing 1988; Nisbet 1988; Gilmer 1949).

These attempts, provide diversified international experiences from both developed and developing countries including Britain (Moodie, 1986); the United States (PEPC 1991; Hammons and Nunn 1994; Hammons and Guillory 1990), Pakistan (HRC, 2003), Turkey (Borahan and Ziarati, 2002), Jordan (HKJ, 2003). The most common criteria cited in the literature regarding the establishment of new HEIs are: population and demographic factors, local interest; funding availability; appropriate regulation; assessment of existing HE opportunities; and geographic location and accessibility.

In a general sense, the above mentioned publications have provided useful insights that help in setting up and developing initial criteria for the establishment of PHVETCs. Among these, Hammons and Nunn (1994) provide an excellent overview on establishment criteria for the community colleges in the United States, which has been the most reliable and detailed source in this regard. However, regrettably, one weak point that can be accounted to the authors is that references have not been explicitly cited. PEPC (1991) has also been a valuable reference monograph for the present work. It developed inclusive theoretical and practical framework criteria for establishing and assessing HEIs in the United States. These framework criteria are based upon three-phase process planning: 1) threshold analysis to determine probable

needs of a region, 2) feasibility study to determine the cost-effectiveness of the proposed new institution, and 3) implementation plan for the development of the institution.

However, related to this issue, several authors (Casley and Lury 1987; Unesco 1975; Cheeswas 1967) have also strongly stressed the importance of data and information as an indispensable tool for understanding, evaluation and generating practical and positive effects on educational planning. They provide practical methods for collecting relevant, reliable and accurate data and the specific types of data usually required for making such assessments and decisions.

5. PROPOSED CRITERIA FOR PHVETCS

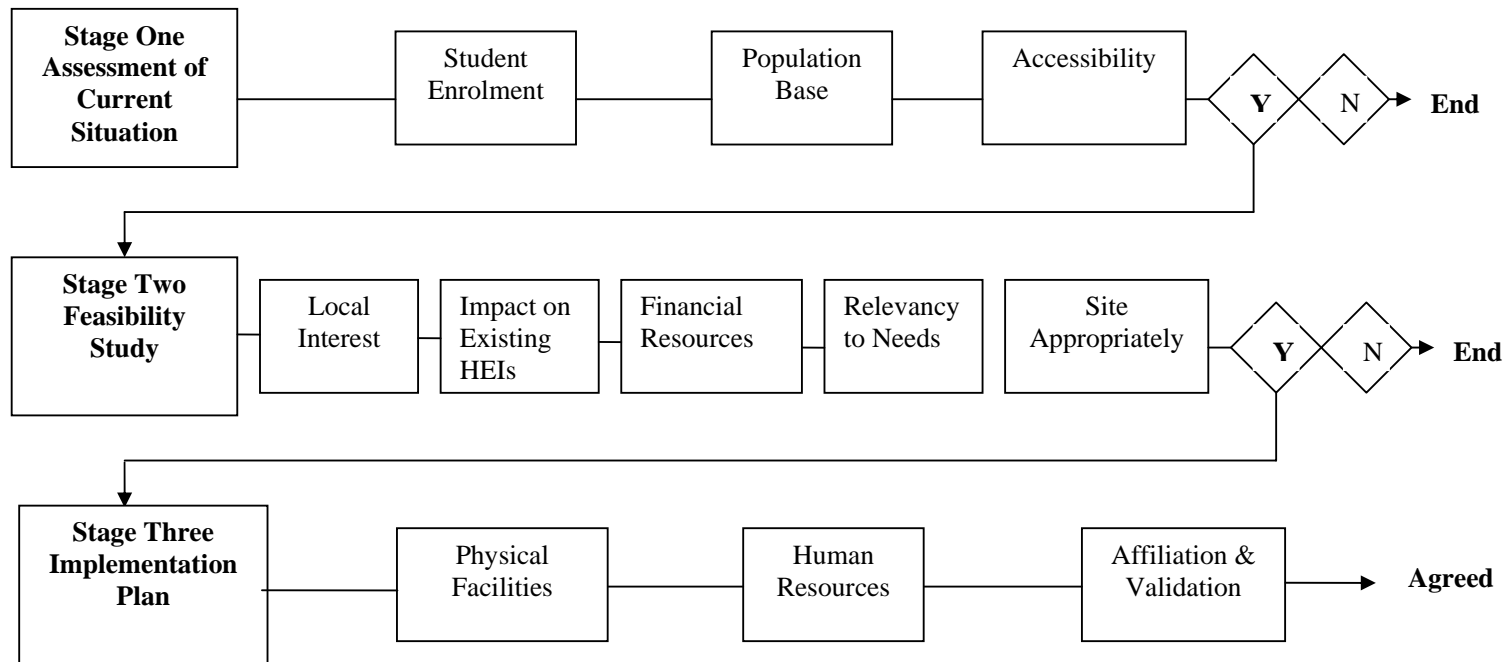
In this section an attempt has been made to develop an initial set of criteria which will help educational professionals in Libya review all new proposed PHVETCs prior to their establishment. More specifically, the main aim of these proposed criteria is to provide higher education planners with appropriate standards and criteria to ensure that new PHVETCs would be established and developed in accordance with the needs and priorities of the country as well as to prevent the overlapping of existing HEIs.

Accordingly, based on the above literature a set of criteria is suggested to be used for the establishment of new proposed college in Libya within a three procedure framework (Figure 1). Within each of the three stages a number of criteria should be evaluated and examined as follows:

First stage, assessment of current situation: This should be done by a board of professional members appointed by the Secretariat of Higher Education. The main function of this board would be to conduct a comprehensive assessment of the following criteria: 1) population base, 2) enrolment participation and 3) geographical accessibility of the area where the proposed new college will take place. If all the three mentioned criteria are approved by the appointed board then the second stage is conducted.

Second stage, feasibility study: There should be an independent board appointed by the Secretariat of Higher Education to conduct a feasibility study on setting up the new proposed college and to evaluate the effect and future outcomes of this college on the area to be served. Five criteria should be examined within this stage, these include: 4) local interest and needs, 5) financial resources available, 6) impact on other HEIs in the area, 7) relevancy to local needs, and 8) appropriateness of the site. Once these criteria have been reviewed and approved then the final stage is started.

Final stage, implementation process plan: At this stage the Secretariat of Higher Education must appoint a committee of professionals of different backgrounds related directly or indirectly to educational planning. This committee can be called the Professional Inspection Committee (PIC). Its main task must be to conduct a survey about the human and physical resources. The PIC has to undertake regular site visits to evaluate available physical and human resources comprising the following: 9) sufficient facilities and enough space to accommodate projected future growth, 10) appropriate human resources, and 11) affiliation to well-established university.



Yes: If all the criteria are favourable.

No: If at least one of the criteria is not favourable.

Fig. 1. The framework of the three-stage procedure

6. DISCUSSION AND ANALYSIS

As indicated above, in order to determine the reliability and validity of the proposed criteria, a group of experts consisting of 28 people were selected on the basis of their expertise on higher education issues and invited to participate in the study. 15 of these experts were interviewed during the activities of “the Scientific Symposia about Higher Technical Education in the Libyan Jamahiriya” which was held in Hoon, Libya, between 8-9 November 2006. The remaining 13 participants were interviewed during personal visits by the researcher to the University of Garyounis, the oldest and the most distinguished Libyan universities.

Almost all participants are PhD holders and more than half perform full administrative positions in their based institutions. Most of the participants had relatively long practical experience, ranging from 11 to 40 years (mean 27 years). More importantly they most likely reflect different perspectives on the issue since they are affiliated to different universities and colleges distributed among 7 cities/towns in Libya, which contributed to the validation and improvement of the proposed criteria (see acknowledgments for a list of the expert participants).

During the interviews the researcher introduced himself and gave a brief outline of the research being carried out and the purpose of the criteria. He then explained the procedure to be followed during the interview. Each participant was then shown the proposed criteria and given more explanation and invited to indicate their agreement (or otherwise) with each criteria. In the case of disagreement the participants were asked to comment briefly in their own words in an open-ended manner. After all interviews were completed, the responses were summarized and analysed.

To begin, it is relevant to note that the participants were pleased with the three stage procedure. It is apparent from the discussion that took place during the interviews, all the experts showed their satisfaction and thereby their agreement on the three stage procedure and the criteria included within each stage. The participants' levels of agreement on the 11 criteria are shown in Table 1.

Table 1. Agreement among the experts regarding proposed criteria

No	Criterion	Agreement	
		No	%
01	Sufficient number of students in the secondary school	23	82
02	Large population base	25	89
03	Locational accessibility	23	82
04	Local interest and needs	26	93
05	Availability of adequate financial resources	26	93
06	Assessment of the impact on other HEIs	28	100
07	Relevance to the local needs	25	89
08	Appropriateness of the selected site	28	100
09	Infrastructure and facilities	28	100
10	Availability of the necessary human resources	27	96
11	Affiliation and validation	19	68

Source: interviews with experts in the field of higher education (n = 28), conducted in Libya, 7-11/11/2006.

As can be seen for Table 1 above, the expert participants appear to be satisfied with the proposed criteria as 10 out of the 11 criteria have received significantly higher agreement (more than 80%) and three criteria achieved total agreement

(100%). However, only one criterion had slightly lower agreement and satisfaction among the expert-panel (68%). Some of the participants (32%) were against the idea of PHVETCs' affiliation but not the validation of programmes appropriateness. They argue that affiliating colleges to universities is impracticable and inefficient since universities are concerned more with academic programmes which contradict the practical nature of courses/programmes provided by the PHVETCs. Further they suggest that it would be more appropriate if the Secretariat of Higher Education established a type of central authority concerned with the PHVETCs programmes and issues.

However, comments and feedback received from the expert panel, as well as new ideas that emerged during the interview discussion, assisted in modifying and developing a subsequently modified version of the proposed criteria (Appendix A).

7. CONCLUSION

From the aforementioned literature reviews on development planning and higher education planning, very convincing evidences suggest that development planning in general and higher education in particular have long been based and formulated on theoretical rather than on practical considerations. In other words, it had been based on traditional objectives-based planning rather than problem-based planning approach (Swann, 1997). It is clear that the lack of planning approach as well as absence of purposefully designed-criteria have brought about negative impacts on the overall efficiency of HEIs in the country.

Therefore, motivated by the related literature an attempt has been made to propose several guideline criteria for the establishment of new, or the development/termination of existing PHVETCs (Appendix A). These proposed set of criteria are well-supported in the literature and by personal experience and approved by experts in the field of higher education in Libya. Overall, it is hoped that the suggested criteria would offer a systematic basis for making decisions regarding expansion of PHVETCs' opportunities in the country. Therefore, the future establishment of new or the development of the existing PHVETCs would not occur haphazardly, but rather on a systematic planned approach.

8. ACKNOWLEDGMENTS

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APPENDIX A

Proposed systematic criteria for establishing, evaluating or terminating PHVETCs in Libya

These proposed criteria have been developed by utilized well-established literature and evaluated by a group of experts on higher education issues in Libya. It hoped that, these criteria would help planners and professionals in Libya take decisions regarding establishing new, evaluating or terminating existing PHVETCs. This set of the proposed criteria can be used completely or partially according the situation. It can be used as a whole within the three stage procedure when a decision needs to be made about a new college. However, it can be use partially in the case when the college to be assessed already exists.

First stage, assessment of current situation: This should be done by a board membership of professionals appointed by Secretariat of Higher Education. The main function of this board will be to conduct a comprehensive assessment of the population base, enrolment participation and geographical accessibility of the area where the proposed new college will take place. This includes:

1. Student enrolment demand: There should be sufficient number of students in the secondary schools within the catchment area of the new proposed college. However, in a similar situation regarding the well-recognised community colleges in the USA, Hammons and Nunn (1994) have noted that:

In general, area high schools should have enrolment in grades 10-12 that is at least 70 percent of the expected enrolment of the local community college. Another useful

proportion often used is the ratio of community college enrolment to the number of area high school graduates in the same year.

However, as a general guideline, the researcher would suggest 250 students as an acceptable threshold value for a new college. This figure has been arrived at by evaluating average enrolment of first year students in 83 existing PHVETCs.

2. Population base: The proposed area should have a sufficient large population base to generate and establish a new economically efficient college. However, there should be accurate and sufficient statistical data about current and projected population as well as demographic characteristics available to support the establishment of the proposed college.

3. Locational accessibility: There should be an accessible location with adequate space and buildings to provide greater access to the prospective students. The assessment board should also consider the accessibility of the site taking into account access time walking and public transport availability. The newly proposed college is also of primary importance. Within this respect PEPC (1991, p. 11) suggest the following for a newly established community college:

The threshold level for geographic access to a proposed new community college should be established at 30 miles driving distance and 45 minutes driving time from a campus of a community college.

However, in the case of Libya, to avoid unnecessary duplication of service and promote the efficient utilisation of resources the researcher would recommend 35 kilometres driving distance and 30 minutes driving from existing, adjacent HEIs. This sort of distance separation, however, can also facilitate sharing resources by adjacent HEIs.

Second stage - feasibility study: There should be an independent board appointed by the Secretariat of Higher Education to conduct a feasibility study on setting up the new proposed college, to evaluate the effect and future outcome of this college on the area to be served. This includes:

4. Local interest and needs: A proof should be available from the local community especially among prospective students and employers. Evidence from the literature indicates that demographics alone were not enough (Hammons and Nunn 1994, p. 54): This interest needs to be demonstrated by potential students in the area and by employers in order to develop a student pool and a base for financial support, ... a public opinion survey... or a petition from publicly elected body... a survey of employers in the area to determine their need for a better-educated work force is also desirable.

5. Financial resources: There should be adequate financial resources available for the support of the new proposed college. Adequacy of financial resources is of essential importance to enable the proposed college to continue maintenance and efficient working for years to come.

6. Impact on other HEIs: There should be an assessment of the effect of the proposed college on the existing HEIs which already serve the immediate and adjacent areas.

7. Relevance to needs: There should be relevance between the local needs and academic programmes provided by the proposed new college. This means that programmes to be provided have to reflect the local market's labour requirements.

8. Appropriate selection of the site: According to Unesco (1975, p. 40) the possible site should conform the following technical factors:

8.1 size and shape of the site

8.2 acquisition possibilities of the site and surroundings, and ownership

- 8.3 cost of site and future site development
- 8.4 existing regional or town development plans
- 8.5 legislation and regulation affecting the site
- 8.6 aesthetic qualities of the site
- 8.7 topography, soil quality, water table, drainage
- 8.8 natural hazards (flooding, smoke, pollution)
- 8.9 transportation infrastructure

Final stage- Implementation process plan: After approval, the Secretariat of Higher Education must appoint a committee of professionals from different backgrounds, related directly or indirectly to educational planning. This committee can be called the Professional Inspection Committee (PIC). Its main task must be to conduct a survey of the human and physical resources. The PIC has to undertake regular site visits to evaluate available physical and human resources, which comprise the following:

9. Infrastructure and facilities: There should be sufficient physical facilities and enough space to accommodate projected future growth. Infrastructure (building and space) are included the following:

- 9.1 Class Rooms (Average 1.5 Sq. meters per student)
- 9.2 Lecture hall
- 9.3 Laboratories, computer labs and workshops
- 9.4 Library and reading room
- 9.5 Principal and faculty offices
- 9.6 Outdoor and indoor sport facilities
- 9.7 Dining room
- 9.10 Health care service
- 9.11 Storage facility
- 9.12 Student residence (if applicable)

10. Human resources: the college should have necessary human resources to carry out the various required activities, appropriately. These include the following:

- 10.1 Total number of permanent staff members
- 10.2 Total number of part-time staff members
- 10.3 Student to faculty ratio (in theoretical and practical programmes)
- 10.4 Appropriate number of non-teaching (support staff; operational personnel; administrative staff; etc).

11. Affiliation and validation: Once the proposed new college is approved, it should be affiliated to a nearest well-established university. Review experts, from the affiliated university, should undertake inspection visits to the college to ensure that the staffing, facilities, equipment and buildings are appropriate for the programmes offered by the college. This is a standard practice to maintain quality of the college.

Appendix B: List of Expert Participants

No	Name	Qualification	Position Held	Total years of experience in HE	Affiliation
01	Salem A. Albaiodi	PhD	Faculty staff	36	Garyounis University, Benghazi
02	Nuri I. Elwafi	PhD	Head of faculty	20	Garyounis University, Benghazi
03	Abdolkarim S. Abosalum	PhD	Faculty staff	25	Garyounis University, Benghazi
04	Mohamed F. Bara	PhD	Vice President	32	International Energy Foundation, Tripoli
05	Ibrahim A. Aljijar	PhD	Faculty staff	34	Garyounis University, Benghazi
06	Ali. G. Eljadid	PhD	Faculty staff	11	Al-Fateh University, Tripoli
07	Omar A. Murad	PhD	Dean of Dept.	20	Almergb University, Alkhums
08	Abdolahim M. Albadri	PhD	Head of faculty	36	Garyounis University, El-Marj
09	Abdolgadir O. Gringo	PhD	Faculty staff	23	Higher Institute of Engineering, Hoon
10	Ramadhan A. El-Mejrab	PhD	Dean of Dept.	30	Garyounis University, Benghazi
11	Jamal A. Emhlhal	PhD	Faculty staff	23	Omar Mukhtar University, Al-Baida
12	Sharafeddin Mohamed	PhD	President	30	Arab Union for Tech. Education
13	Saleh Ghashout	PhD	Dean of Dept.	22	Al-Fateh University, Tripoli
14	Emhemad. A. Mazin	MSc	Director General	19	Education Dept. Sha'biyat of Aljofrah, Hoon
15	Mansour M. El-Babour	PhD	Emeritus Prof.	25	Garyounis University, Benghazi
16	Mohamed H. Abu-Baker	PhD	Faculty staff	24	Garyounis University, Benghazi
17	Ali M. Farhat	PhD	Dean of Dept.	30	Higher Institute of Engineering, Hoon
18	Fathi. S. Abouzkar	PhD	Dean of Dept.	20	Tahdi University, Surt
19	Alaabed A. Massaud	PhD	Faculty staff	35	Almergb University, Alkhums
20	Aljilli M. Ahmed	PhD	Dean of Dept.	30	Higher Institute of Engineering, Hoon
21	Mansour M. Al-Kikhia	PhD	Emeritus Prof.	40	Garyounis University, Benghazi
22	Abdolssalam M. Ezzalitni	PhD	Faculty staff	25	Garyounis University, Benghazi
23	Omar K. Idris	PhD	Faculty staff	30	Garyounis University, Benghazi
24	Yousif H. Alshain	PhD	Faculty staff	40	Garyounis University, Benghazi
25	Mohamed M. Almofti	PhD	Faculty staff	38	Garyounis University, Benghazi
26	Ahmed Abunowara	PhD	Faculty staff	23	Garyounis University, Benghazi
27	Ramadhan M. Aldhaif	PhD	Dean of Dept.	22	Almergb University, Alkhums
28	Ali A. Naser	PhD	Administrator	23	Higher Institute of Engineering, Hoon