

**International Conference
on
Research Development in
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**Panel 1:
Priorities for the
Development of Research at
Palestinian Universities**

**Overview of Institutions of Higher
Education in Palestine**

- Number of Universities 10
- Number of Distance Learning Univ. 1
- Number of University Colleges 13
- Number of Community Colleges 19
- Total 43
- Total Number of Students 141000 For The year 2005/2006

**Students Distribution at Tertiary
Education Institutions 2005/2006**

- Total No.of Students in Universities 75000
- Total No. In the Open University 53000
- Total No of Students in Univ.College 2300
- Total No. in the Diploma (2 Year) 11200
- Total 141000

**Distribution of Students According to
Programs 2005/2006**

- | | | % |
|-------------------------------|-------|------|
| ● 1-Education | 52650 | 35.3 |
| ● 2-Arts and Humanities | 14720 | 9.8 |
| ● 3-Social Stud. Buis, andlaw | 46250 | 31.0 |
| ● 4-Science | 15225 | 10.0 |
| ● 5-Eng.and Manufacturing | 9800 | 6.5 |
| ● 6-Agric.and Veterinary | 900 | 0.6 |
| ● 7-Health Welfare | 9600 | 6.4 |
| ● 8-Others | 520 | 0.3 |

Distribution of Faculty Members

- Ph.D Total No. 2015 of which 126 Prof.
- MSc Total No. 3160
- High Diploma 65
- BSc. 2838
- Diploma (2 year) 1000
- Tawjehi and less 1600

Scientific Publications in the Arab world in comparison to Palestine

- Faculty Members (FM) 55000
- No. of Publications 15000
- Average Publication per FM= 0.3
- Average Publications /FM.
In Palestine 0.2-0.5
- Average Publications In
Industrial Countries. 8

Indicators for Scientific Research

- North America >3500 Researcher /Million
- Europe >2500/Million
- The Average in Industrial Countries 3700/Million
- Arab World 200-22/ Million
- Palestine 55 /Million (assuming 10% of Faculty into Research) Population 3.6 Million
- Technician per Researcher 0.5-0.9
- Distribution of Research
 - 1- Agriculture
 - 2-Engineering and Science
 - 3-Social Sciences and Humanities

DIFFICULTIES FACING SCIENTIFIC RESEARCH IN PALESTINE

- 1- Lack of Strategic Planning or clear Policy for Scientific Research.
- 2- Lack of Data Bases for coordination and cooperation among Universities ,academic institutes and scientific centers
- 3- Heavy Teaching Load for Faculty Members (12 credit hours /week)
- 4- Availability of Human Resources Sporadic in Different Universities
 - Lack of Coordination and Networking as a Team .
 - Examples
 - Nanotechnology
 - Medicine and Public Health ,food technology and Nutrition
 - Water and Environment

- 5- Equipments Operation and Maintenance ,up-to-date training
- 6- Ratio of Technician per Researcher
- 7- Financial Resources for Research ,Poor Financial Expenditure ,and Lack of special Funding Agencies for Research
 - Some International Funding Based on Competitiveness
 - UNESCO
 - American (MERC)
 - Canadian (IDRC)
 - EU

- 8- Culture of Research
Faculty members are interested in academic Promotions, so their focus on producing as many articles as possible . The focus on particular specialization is not a priority .
Scientific Research Standards are Shallow and has no contribution in Development.
- 9- Immigration of Highly skilled researchers to highly industrialized countries
- 10- Weak Participation of Industry and Private sector in Scientific Research

Researchers

- Ratio Number of Researchers /1000 people

1-Canada	7.4
2-Arab World (Scientists and Technicians)	1.0
3-Palestine	0.1
4- Sweden	7.0
- Expenditure percent of Domestic National Income

1-Israel	4.70	2.5 Billion \$
2-Sweden	3.30	
3-Egypt	0.40	
4-Jordan	0.33	
5-Morroco	0.2	
6-Palestine		
7-Arab world	0.30	1.7 Billion \$

Priorities in Fields of Research

- 1- Energy
- 2-Environment ,Sewage Recycling, Water Resources & Management
- 3-Agriculture ,Food Security
- 4-Public Health and Medicine
- 5- ICT (Information and Communication Technology)
- 6-New Materials, Nanotechnology

Reform in Scientific Research

- We need to upgrade our research Institutions to the point where they are compatible with centers of excellence of international standards
- We should be able to absorb and develop emerging Frontier Technologies
- We should introduce a system based on merit to encourage innovation and creativity.

Reform

- policies and suitable legislations both governmental and at University level that reduce bureaucracy should be implemented to promote Scientific research.
- Mutual cooperation between Universities and Industry must be encouraged.
- We need to build our society on values that promote tolerance,encourage free and critical thinking ,

Actions at Pre-university level

- We need to make major changes in our school educational system to become part of the global knowledge and information society .
- 1- Build skills in Science and Math in which we encourage enquiry based learning creativity ,innovative and critical thinking ,
- 2- we should encourage teamwork, dialogue, respect for differences, and freedom of expression and freedom of thought

At University Level

- Students should be accepted to various disciplines on the basis of merit and excellence
- Universities must employ quality faculty members as the major requirement
- Universities must run independently away from the national political system and social system .

- Continuous development of the curricula is needed to meet global changes
- Faculty members should update their skills ,by making use of information networks ,libraries,other learning resources ,introduce computer aided instructions .