



Al Manar
Your Path for Tomorrow

Higher Education at a Glance in Jordan

Prepared by:

Dr. Fayez Essa Khasawneh

Dr. Sameer Mohieddin Bataineh

Dr. Musa Zuhdi Nazer

Dr. Mohammad Khair Abu Qudais

Dr. Rana Khalil Al-Akhal

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Acknowledgment

We are indebted for the "Education at a Glance OECD Indicators' report " which was the initiator and the guide for Jordan's report and still the responsibility of producing this report lies on Al Manar project and the report's professional team .

Foreword

The quality of higher education graduates is a major concern in Jordan. A number of national reform projects have been conducted---some consecutive and some concurrent---in an attempt to bring the quality of the higher education sector to a level that is universally recognized as being necessary..

Universities have been the focal point of discussion and decision-making in attempts to reform this sector, including their governance, finance, admission practices, and attendance. In addition, there have been highly controversial discussions about the proper role that universities should play in making and leading change in society. It is sometimes said that both excellent and poor universities teach, but that it is only the excellent ones that lead and accomplish change in their surroundings. As Thomas Friedman has noted, "Change is hard. Change is hardest on those caught by surprise. Change is hardest on those who have difficulty changing too. But change is natural; change is not new; change is important."¹

The Al Manar project at the National Center for Human Resources Development (NCHRD)---a Canadian-funded project---has developed several systems and services to enhance the development efforts of the education and training providers .Amongst its endeavors, the project has built and developed the Higher Education Information System (HEIS) that includes data on students enrolled at Jordanian universities, on the graduates of those universities, and on the faculty and administrative employees of the universities. This data, along with other statistics, have been developed into information presented in the form of indicators, studies, research projects and forecasts. The Higher Education Indicators (HEI) report is among the outputs of this process.

The motive behind developing the HEI and its manual was to create a national reference point for the policy-making process in the higher education sector, to establish national benchmarks comparable with international indicators and to search for the institutional set up that will guarantee the sustainability of this work in the future.

The report has four sets of indicators:

Chapter A

Chapter A explores the output of educational institutions and the impact of learning. It begins by presenting the overall educational attainment of the population, and then examines graduation rates at the upper secondary and tertiary levels of education. It should be noted that this chapter goes beyond a count of graduates in each system to examine the quality of learning outcomes.

¹ Thomas Friedman, The World is Flat.

Chapter A also examines the relationship between educational attainment and labor market outcomes and considers the return on investment in education for individuals.

Chapter B

Chapter B provides a comparative examination of the financial and human resources invested in education. This chapter emphasizes trends in spending patterns and it analyses how different demand and supply factors interact and how spending on education, compared to spending on other social priorities, has changed.

Chapter C

Chapter C examines access to education, participation and progression. It gives a picture of the average number of years a student can expect to be formally enrolled in education and participation rates at the different levels of education.

Chapter D

Chapter D examines the factors that shape the teaching and learning environment and that can, therefore, have an influence on learning outcomes. The chapter begins by considering student learning conditions in terms of the amount of instruction time received in school, average class size and student-teacher ratios. Chapter D also considers teachers' working conditions in terms of their teaching working time and salaries.

All the members of the team who worked on this report must be congratulated and thanked for their hard work, dedication, interest and support. They did an outstanding job. Special thanks are due to Dr. Fayez Khasawneh, Dr. Musa Al Nazer, Dr. Sameer Bataineh, Dr. Mohammad Abu Qudais and Dr. Rana Al-Akhal. This work could not have been completed without the remarkable commitment and intellectual capacity they brought to the task. Many thanks are also due to Mamdouh Salamat and Manal Al Ziq from the Al Manar staff for their technical support.

**Al Manar's Director,
Nader Mryyan.**

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Executive Summary

Introduction

Since the early days of the industrial revolution, economic development was perceived to be the result of bringing together raw materials, financial resources, labor, machinery, and entrepreneurship. During the twentieth century, another component started to play a larger and larger role, namely technological know How. As the century closed in, this last ingredient became so dominant that a new terminology came into being. We now speak of knowledge-based economies as a principal engine of human development, and of education as its tool.

Expansion in higher education in Jordan in the form of new public and private universities (from 4 in 1989, to 26 in 2006) and student enrollment (from around 40,000 in 1989 to over 160,000 in 2006) necessitate an assessment of these developments in the form of an ongoing system of monitoring and evaluation to rationalize these developments and justify the expenditure of public funds on them. The number of people engaged in public and private jobs increased from 583,500 in 1989 to 1,344,000 in 2006. Most of them are the product of the educational system of Jordan. Subjectively speaking, it would be easy to claim that Jordan's investment in human capital (i.e. education at all levels) was a cost effective investment. These claims, however, should be adequately quantified in order to evaluate them objectively. We also need to know if we could have done a better job, and whether or not we are keeping up with the rest of the world. These are some of the reasons why we need key performance indicators.

Key performance indicators are standard tools for monitoring and assessment. They provide rich and concise information. In our context, an analysis of the status of higher education and its relationship to pre-tertiary and post Tertiary education and employment seems timely. In the national context, the scope should be widened to cover education as a whole, rather than limiting it to higher education. The present study is confined to an assessment of higher education through a number of relevant indicators. These indicators have been selected from a well established and internationally accepted list that was developed by OECD countries. The study followed a structure parallel to that of the OECD one, in order to enable benchmarking with these countries. Gender issues have been highlighted all through. The selected indicators focused on the following aspects of higher education:

- Educational attainment and overall human capital in education.
- Rate of inflow and outflow of student population expressed in terms of entry and graduation rates.
- Financial and human resources invested in tertiary education as revealed by analysis of university budgets.
- Educational environment with emphasis on human resources available to students as expressed in student / teacher ratio and teachers working time.

Summary of Key Results :

Educational attainment of the adult population has been increasing.

- More people are spending more time in formal education. The average number of years of education ranges from 9.5 in 2001 to 10.0 in 2005 due to a relative increase of the portion of the population attaining secondary and tertiary education.
- The proportion of the population that achieved basic education (10 years of compulsory education) as their terminal degree were higher than those who achieved secondary or tertiary education combined.
- In overall educational attainment, females hold a lower level than males 9.5 years vs. 10.6 years (2005), indicating a higher share of females in the illiterate category. However females hold a higher percentage in secondary education than males. The proportion of females in total educational attainments is increasing as the population gets younger.

No noticeable change in overall enrollment in secondary education is observed, but the share of vocational education has been on the decline.

- Enrollment in secondary education is around 70% of the youth population with a higher share for females. More males drop out after basic education or enroll in the vocational stream than females.
- The drop in the rate of secondary vocational education is noticeable (17.8% in 2001 to 12.0% in 2005), with females constituting a rather small share in vocational education.
- Since passing the secondary school general certificate examination is a requirement for employment and for admission to tertiary level education, all secondary education graduates sit for the exam. Improvement in rate of successful completion of the exam over the past two years is noticed. This trend is attributed to the relaxation of exam regulations.
- The ministry of education is the main provider of secondary education (87% academic, 77% vocational). Private schools do not carry any secondary vocational education.

The high demand for university level education has led to a sharp increase in tertiary graduation rate.

- The main activity in tertiary education is at the first level (Bachelor degree). There is a definite but slower increase in graduates at the Master's & Ph.D. levels.

- Females dominated the first tertiary level, while males dominated the other higher levels. Social and financial factors seem to limit the flow of females into graduate level education.
- Since admission to tertiary education is solely dependent on the results of secondary school general examination, females seem to compete better than males for admission.

Tertiary graduation rates are lower than entry rates.

- There is no balance between graduation rates and enrollment rates for the same group due to an accumulations of student enrollments . This indicating a sizable portion of students spend more time than the expected period (4 years for a Bachelor degree) to graduate.
- Entry rate into tertiary education has been increasing at a higher rate than the secondary school graduation rate, as a higher percentage of the youth population are seeking university degrees. This could be attributed to a shift from vocational education to academic education and to better work opportunities for university graduates.

Number of foreign students in tertiary education is increasing.

- Although the percentage of foreign students enrolled in tertiary education (mainly Bachelors level) has not changed much during the past years, their absolute numbers have increased sharply.
- The relative enrollment percentage of foreign students in public universities has been decreasing, most likely because of active recruiting activities by private universities.

Total unemployment among youth remained relatively high.

- Unemployment among the youth population has been decreasing for attainees of secondary school education but increasing for tertiary level graduates.
- Unemployment rate among youth females is low, due to the high percentage not seeking employment.

Continuing education and training is occasional but not well documented.

- As job tasks become more complex and as mobility of people's between jobs increases, training and retraining become a necessity. This need is partly met through individual efforts and specific needs of employers.

- Established public training institutions focus on vocational training. Advanced level training is short lived, disconnected and discontinuous. It usually takes the form of occasional workshops.
- In spite of the presence of a large number and variety of centers that are involved in some kind of training there is no structure for certification or quality assurance.

Although higher than most Arab countries, performance of 15-year-olds in science and mathematics remains relatively low by world standards.

- Performance in science improved over the years and touched the international mean in 2003, but remained noticeably lower in mathematics.
- Performance of females' and improvement rate were higher than that of males in both mathematics and science.
- Private schools showed better performance than public schools in both science and mathematics.

Scores of 15-year-old students in Jordan show a large under-performance gap in problem solving as compared to international mean score

- Only 1% of students achieved excellent score 8% scored high, and 60% fell in the low score category. The high percentage of low scorers point to factors other than the curricula leading to such an outcome.
- Problem-solving abilities as well as aptitude in mathematics and science are much dependent on school environment, class size, student qualifications and curriculum.
- Problem-solving abilities are developed in a continuous vertical process as students move from one grade to another. There appears to be a disconnect between vertical progression and cumulative aptitude.
- The absence of standardized testing on the national level during basic education (grades 1 to 10) does not provide an opportunity for feed-back and identification of difficulties.
- A shortage of mathematics and science teachers (especially male teachers), coupled with the important emphasis on secondary level education (for the sake of the general certificate exam, tawjihi) lead to the employment of non-specialized math/science teachers for basic education, especially in remote areas.

Overall employment rates for the total population for all levels of educational attainment have not changed significantly and remained around 85% in recent years.

- Unemployment for college graduates has been increasing (12%, 2001 to 18%, 2005), whereas it remained steady for secondary (around 14.5%) and

non-tertiary post secondary (around 13.6), indicating a mismatch between high level skills produced and the skills required by the labor market.

- Female unemployment rates for tertiary education graduates are higher than rates for attainees of secondary education or less. This is related to the higher rate of female tertiary graduates who seek jobs, indicating that females with tertiary education are job seekers whereas those with only secondary education are primarily not job seekers.

Return to education expressed in terms of earning ratios comparing wages for higher (e.g. tertiary level) with lower (e.g. secondary level) indicate a good wage advantage.

- Earning ratios increase with age indicating that wages plateau with age for persons of lower education. This is strongly pronounced for females, which reflects the discriminatory pay scales for males vs. females with lower educational level
- Although sufficient data is not available, relative earnings are extremely sensitive to specialization. The pay gap between certain professional degrees such as engineering, medicine, and others is much wider than the stated average.
- Return to education at the individual level show that the rate of return to an individual, who up-grades his education level from secondary to tertiary in the middle of his work career, is around 11%. Such a career switch is usually made much earlier, but when it is done at a later stage, it is usually done without quitting work, adding up to a much higher internal rate of return on tertiary education.

Although overall spending on tertiary education is rising, expenditure per student is falling due increases in admission rates.

- Average expenditure per student in tertiary level in Jordan is only about 19% of that in OECD countries.
- Private universities in Jordan are for-profit institutions, thus the cost per student is substantially higher than what these universities spend (expenditure JD 1724). In public universities annual expenditure is JD 1852, shared between government allocations and tuition fees.
- Expenditure on public universities in Jordan amounts to 0.79 % of GDP.

The share of private spending on tertiary education is substantial and rising over time.

- Private expenditure on tertiary education is increasing with over and has exceeded 70 % of total spending, indicating a shift in policies with private sources (students or their sponsors) shouldering a higher load of the cost of tertiary education.
- Compared to total public expenditure (health care, social security, defense, security, etc ...), the percentage of expenditure on tertiary education declined from 2.5 % in 2001 to 1.6 % in 2005.
- Public transfers to tertiary students, including housing, fees, grants, loans, etc ..., but not including direct government contributions to university budgets, jumped from 1.3 % of total public expenditure on tertiary education in 2001 to 8.5 % in 2005. This was due to the establishment of student loan funds and an increase in the number of students benefiting from public supported scholarships.

Current (recurring) expenditure constitutes on average 75 % of total expenditure on tertiary education and most of that (83 %) goes to salaries and compensations.

- Public universities spend a lower percentage of their recurring expenditure on salaries and compensations than private universities, indicating a lower share of expenditure on services (libraries, classrooms, laboratories, student activities, etc ...) than in private universities.

Total instruction time, represented in terms of credit hours required for the first degree in tertiary education, is relatively high in Jordanian universities while non-class room hours (for advising and counseling) per student are low.

- There is an imbalance between hours spent by students in classrooms and teacher/student contact hours outside classrooms. This is due to heavy instruction loads on staff and high student/teacher ratio. Added to that is a negative built-in attitude of students towards interaction with faculty.
- Minimum credit hour requirements for first degree in tertiary education in Jordanian universities, although comparable to those in the region, are higher than in US universities by about 25 %. This difference is in part due to the sizable portion of credit hours for language and communication skills that should have been attained in pre-college education.

Class size and student/teacher ratio are high and rising.

- Expansion in facilities and faculty is not coping up with increases in student enrollment. Overall student/teacher ratio increased from about 29 in 2001

to around 35 in 2005. The increase is more pronounced in public than in private universities. In private universities the ratio stabilized at around 25 due to strict implementation of accreditation standards. The worldwide standard is around 20.

- There is no enforced standard on the upper limit of class size. It is variable and usually set to accommodate the wishes of students who are keen to take their classes during two or three days of the week, rather than over the whole week. Although most universities have large lecture halls, the facilities are not oriented to have them used as classrooms.

Salaries of faculty members in Jordanian universities are not competitive with those at universities in the region. The ratio of salaries to GDP per capita has been continuously decreasing with time.

- Salaries are set on a rigid scale applicable to all universities (with slight variations in private universities). Scale adjustments are not continuous, taking place every four or five years, and requiring government approval.
- The rigidity of the salary scale does not allow differentiation in salaries based on merit and performance.
- Better performing faculty members are responding to enticements from other universities in the region and elsewhere and are leaving, thereby exacerbating an already serious shortage of highly qualified faculty members.

As more public and private universities are established, performance monitoring becomes important.

- Standards to indicate performance have not matured yet. Dependence on standardized foreign related tests may give comparative information that reveals differences between public and private universities. No trend is well established yet for any specialization.

Policy highlights

Statements in this section summarize recommendations evolved from the analysis of the indicators. They are presented for consideration by policy makers. More details appear in the context of each indicator.

A major general recommendation, stemming from the difficulties encountered in obtaining meaningful relevant data, is to call upon all academic institutions to establish a system of data collection on all academic, administrative, financial, and community activities.

- An increase in the population's education stock could be achieved by a rigorous implementation of obligatory basic education.
- Policies to encourage private schools need to be adopted to help the Ministry of Education shoulder the increasing demand on education. Incentives to spread such schools over various districts should be offered, especially for non-profit types of schools.
- Incentives should be provided for graduate level education in sciences (Master's and Ph.D.). Enrollment of selected high achievers in foreign universities is imperative to minimize the impact of inbreeding in Jordanian universities, the results of which are beginning to show up.
- A system of incentives should be established to attract qualified people to science and math teaching at the basic level. Frequent monitoring of student attainment in science and math through internationally standardized tests would help for revision and development of curricula.
- To meet the demand for skills higher than those attained by a particular level of education and to increase earning potential, continuing education to attain higher degrees should be facilitated. Re-entry into educational programs and the establishment of extension studies will increase the return to education.
- A policy for public financial resources transfers to tertiary education should be adopted to address the imbalance between public and private expenditure, and alleviate the financial pressure on universities in the face of the high demand.
- Private universities, being for-profit institutions, need to provide services that match fees. Explicit budgets that reflect expenditure on education should be made available for monitoring and for studies and investigations related to tertiary education.
- The decrease in total public expenditure on tertiary education in recent years due to decrease in budgetary allocations to public universities should be examined. Revenues collected in the form of taxes earmarked to provide

financial aid to state universities are partially used for purposes other than those for which they were collected.

- Public subsidies for students in the form of scholarships, loans, housing services, tuition waiver, etc ... can be used to entice students to study certain subjects that qualify them for jobs demanded by the job market.
- The positive effects in the internationalization of students in tertiary education call for a policy to attract outstanding students and establish effective standards for selection of candidates.
- The deficiency in data on continuing education and retraining needs to be remedied according to best practice and world standards.
- Credit hour requirements for the first tertiary level degree should be reconsidered to allow for more independent outside classroom activities, more teacher-student interaction and more research involvement.
- Policies to reduce student-teacher ratios should be adopted on one hand and more efficient use of student time in large classes, as well as employing electronic teaching aids.
- Faculty development centers and programs at universities need to be established or activated, and incentives should be provided to faculty upgrade their teaching capabilities.
- Accreditation standards should underline quality of the teaching faculty as well as student learning activities.
- Faculty salaries should be set on a flexible scale to allow for progressive increases consistent with inflation and regional competition, and should provide incentives for excellence and distinction in order to retain and attract high quality faculty members.

Chapter A

Output of Educational Institutions

This is essentially a measure of human capital. Educational institutions are the generators of this capital. In this chapter the output of educational institutions and its impact on the overall education wealth of the Jordanian society is explored. Trend data over five years (2001-2005) is examined for both males and females. Benchmarking with OECD countries is presented to point to the placement of Jordan among these countries. Policy highlights and recommendations relevant to each indicator are presented for consideration by policy makers. Analysis in this chapter covered the following indicators:

1. Indicator A1: Educational attainment of the adult population.
2. Indicator A2: Upper secondary graduation rates.
3. Indicator A3: Tertiary graduation rates.
4. Indicator A4: What 15-year-olds can do in mathematics?
5. Indicator A5: What 15-year-olds can do in problem-solving?
6. Indicator A8: Labor force participation by level of educational attainment.
7. Indicator A9: The return to education

Educational attainment of the adult population

This indicator shows the average number of years of schooling in formal education (basic, secondary, tertiary) spent by adults. It is an expression of the knowledge and skills available to the economy for its development over the years. It also shows the share of each group of a certain level of education in the stock of knowledge and skills.

Key results

**Chart A1.1. Educational attainment of the adult population:
Average number of years of education**

This chart shows the amount of education that has been attained by the adult population (males, females, total) in terms of the average number of years spent in formal education.

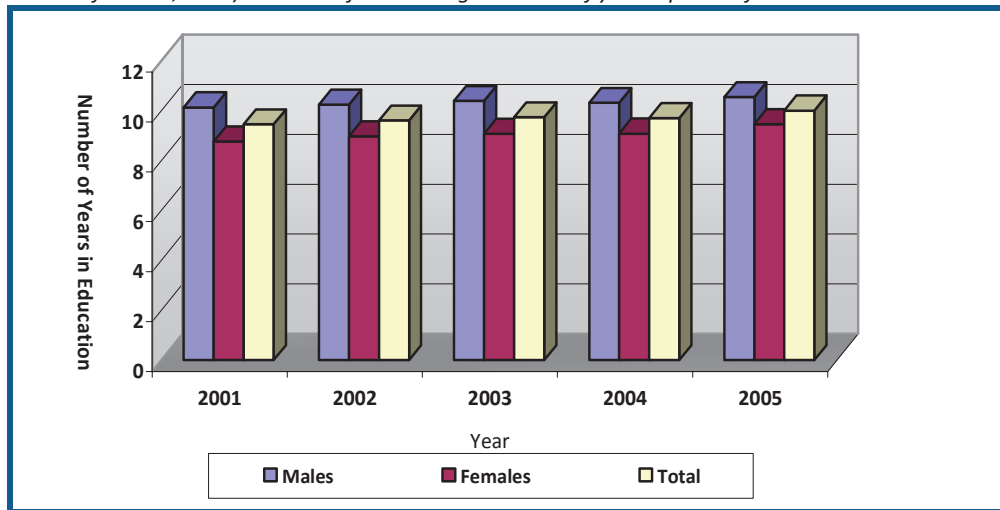
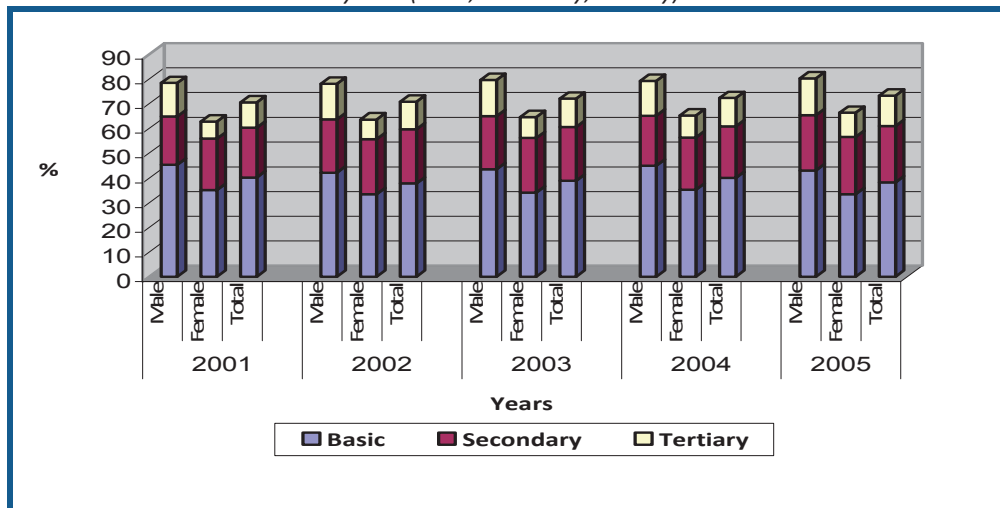


Chart A1.2. Percent of population attaining each level in the education system.

This chart shows the percent of the adult population who completed each level in the education system (basic, secondary, tertiary).



highlights of this indicator

The average educational attainment of the adult population range from 9.5 years (in 2001) to 10.0 (in 2005). There is a continuing but slow increase over the last five years due to relative increase of the proportion of the population attaining secondary and tertiary education. The largest proportion of the adult population has basic education as the terminal degree, but the percentage of those attaining higher levels is increasing with time. Nearly 72% of the adult population attained basic, secondary or tertiary education. A further 9% on average attained post secondary non-tertiary education. The balance of the adult population either dropped out of school before finishing the basic level or were illiterate. The institution of laws to make basic education obligatory is relatively recent. As the backlog of these below basic education decreases in numbers, the average educational attainment will increase.

There is a noticeable difference in educational attainment between males (10.6 years in 2005) and females (9.5 years in 2005). This difference is due to an overall higher contribution of females in the illiterate category and an overall lower contribution in the tertiary education category. In contrast to tertiary level, females hold a higher percentage of secondary education than males. Apparently, satisfaction with secondary education as a terminal degree is higher for females.

A future increase in the education stock is expected in the near future because of increased rigor in the implementation of obligatory basic education (10 years), especially if subsequent dropout problems are managed successfully by orienting students to the technical stream of secondary education.

Benchmarking

An average of around 10 years compares well with Greece, Italy and Turkey and is higher than Mexico and Portugal but lower than the overall average of OECD countries (12 years).

INDICATOR A2

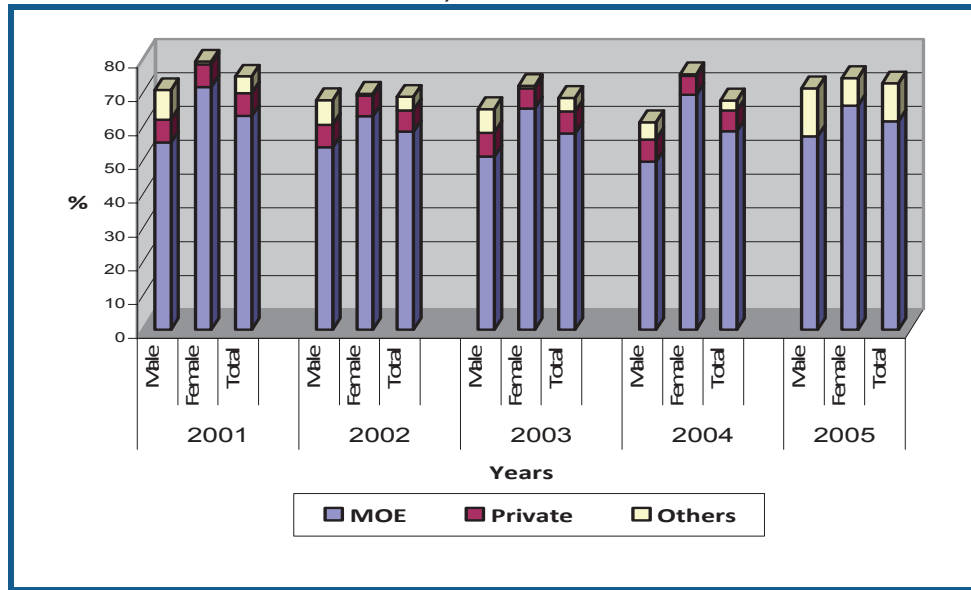
Upper secondary graduation rates

This indicator shows the current output of secondary education system. It gives the percentage of the population of secondary school age who completed 12 years of education and the percentage of the same population that passed the secondary school general examination for males and females. It also compares enrollment in academic streams with vocational streams.

Key results

Chart A2.1. Upper secondary graduation rates (2001-2005)

This chart gives the percentage of the population of the age group (18 years old) who completed secondary school education.



for 2005 the yellow includes private and other school

Chart A2.2. Upper secondary graduation rates (2001-2005)

This chart gives the percentage of the population of the age group (18 years old) who passed the secondary school general examination.

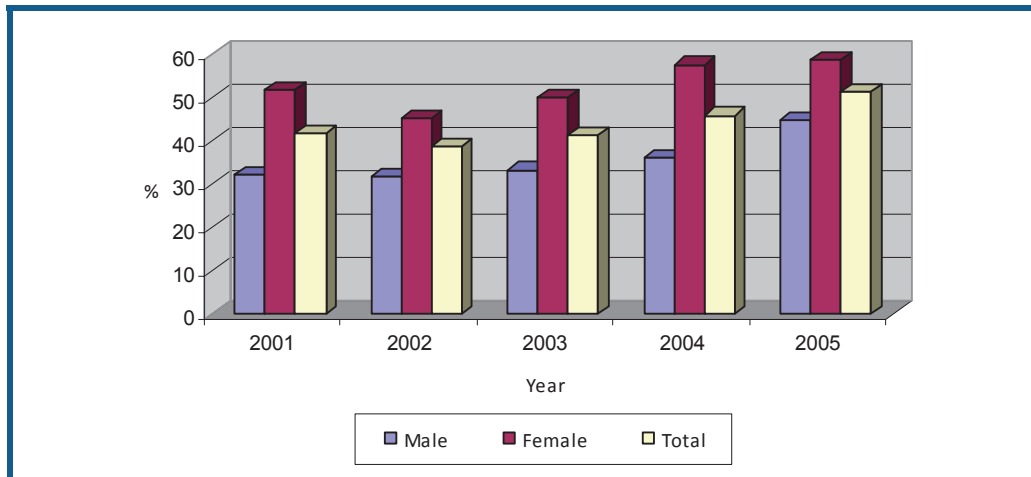


Chart A2.3. Upper secondary graduation rates (2001-2005)

This chart gives the percentage of 18 year olds enrolled in 12th grade who passed the Tawjihi

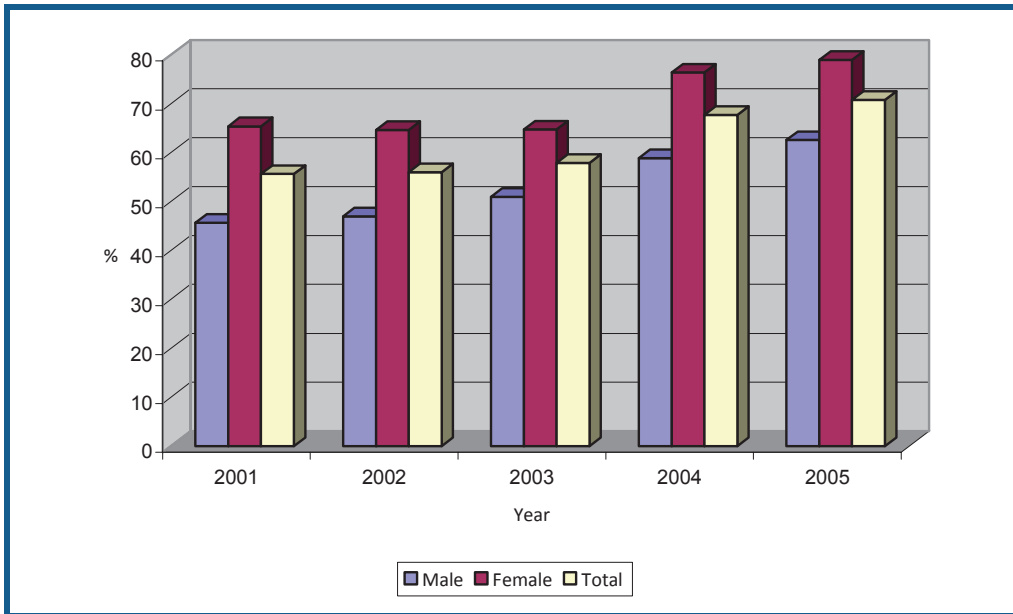
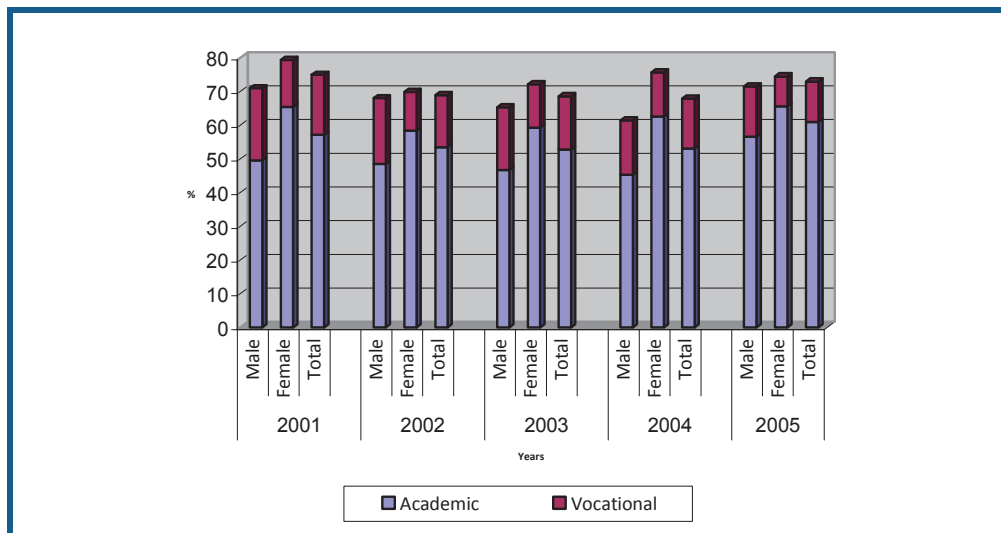


Chart A2.4. Upper secondary graduation rates (2001-2005)

This chart gives the percentage of the population of the 18 year age group enrolled in academic and vocational streams.



Highlights of this indicator

- Overall secondary completion rate (academic & vocational) is around 70% of the 18 years old, with the females rate consistently higher than male. The remaining 30% obviously dropped out after the 10th grade. The gender difference indicates that more males drop out at the end of basic education level (10th grade) and seek jobs. This indicator also shows that the Ministry of Education carries the major load of secondary education, i.e. about 87% of the academic and about 77% of the vocational streams. Private schools do not carry any secondary vocational education. Part of the vocational education is carried by UNRWA (United Nations Relief and Work Agency), and is classified as “other”..
- Essentially all those enrolled in the 2nd secondary class sit for the general certificate of education examination, since passing this examination is a requirement for admission for tertiary level education, and for most jobs in the public sector. Achievement rate in this examination has been around 40% of the same age group of the population (18 years). Better achievement in the last two years is noted (52% (2005)). Over the years, females fared better than males in these examinations.
- The contribution of private schools to secondary education is small (6.5% of the population of 18 year olds and is limited to the academic stream. This may be due to the high cost of education at private schools and their localization in the Amman district. Also, the quality of secondary education at public and private schools in general seems to be equally competitive.
- Enrollment rates in secondary vocational education has dropped from 18% in 2001 to 12% in 2005. This downward trend is possibly due to the higher opportunities of entry into tertiary education for academic streams in contrast to the vocational secondary streams. Also the creation of the Information Technology stream two years ago as part of the academic streams, attracted large numbers (about 10,000 each year). Some entrees would have been oriented to the vocational stream.
- Improvement in achievement of the general certificate exam (42% in 2001 vs. 52% in 2005) is due to a change in the regulations which now give examinees more opportunities to sit for examinations and allows students to complete the set of examinations cumulatively over two or more sessions.
- The higher achievement of females in the general examinations compared to males was consistent, and ranged from 52% in 2001 to 59% in 2005 for females; and from 32% in 2001 to 45% in 2005 for males. This should have an impact on admission rates for females in public Jordanian universities (indicator C2) as well as on graduation rates (indicator A3).
 - The share of private schools in secondary education needs to be raised, especially outside Amman. Policies to encourage private schools need to be adopted to help the Ministry shoulder the ever increasing demand on education. Incentives to spread such schools over various districts in Jordan should be offered to both the for-profit and non-profit types of schools.

A2

- The downward trend of enrolment in vocational secondary education needs to be reversed to orient students into this stream, perhaps through providing some educational and employment incentives.

Benchmarking

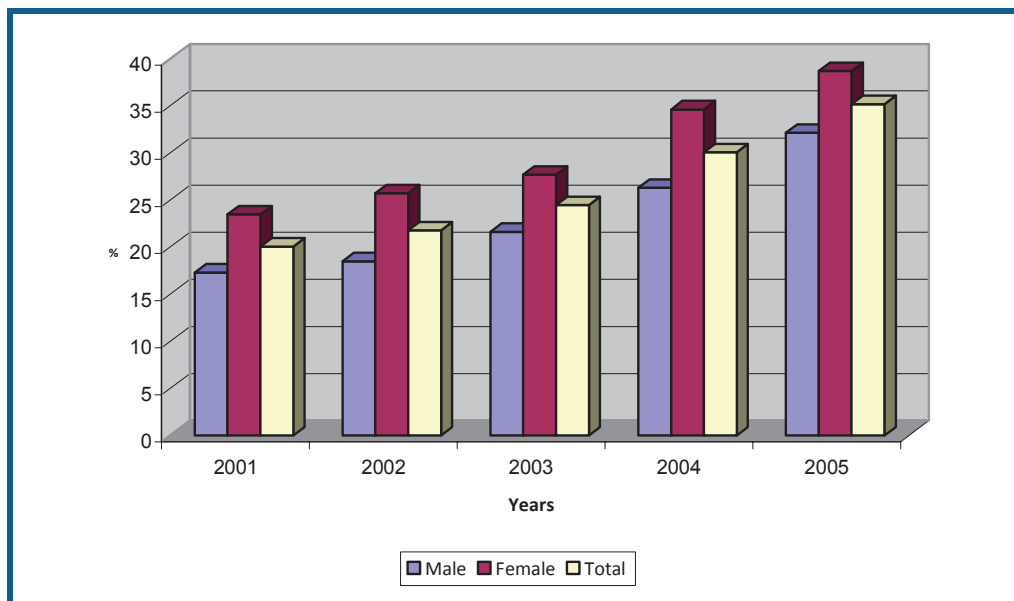
For the year 2003 (OECD reference year) the secondary graduation rate of about 70% is more than Spain, Slovak Republic, Turkey and Mexico, but less than all other OECD countries.

Tertiary graduation rates

This indicator shows the tertiary graduation output of the education system. It gives the percentage of the male/female population in the typical age group who successfully completed a certain tertiary level program. The indicator tells us about the rate at which advanced knowledge is produced. It also reflects on the extent of preference for science fields in all levels of tertiary education.

Key results**Chart A3.1. Tertiary graduation rates**

This chart shows the percentage of the age group (22 years old) normally completing the first level (Bachelor) of tertiary education in all fields.



A3

Chart A3.2. Tertiary graduation rates

This chart shows the percentage of the 25 years old age group normally completing the second level (Master & Diploma) of tertiary education in all fields

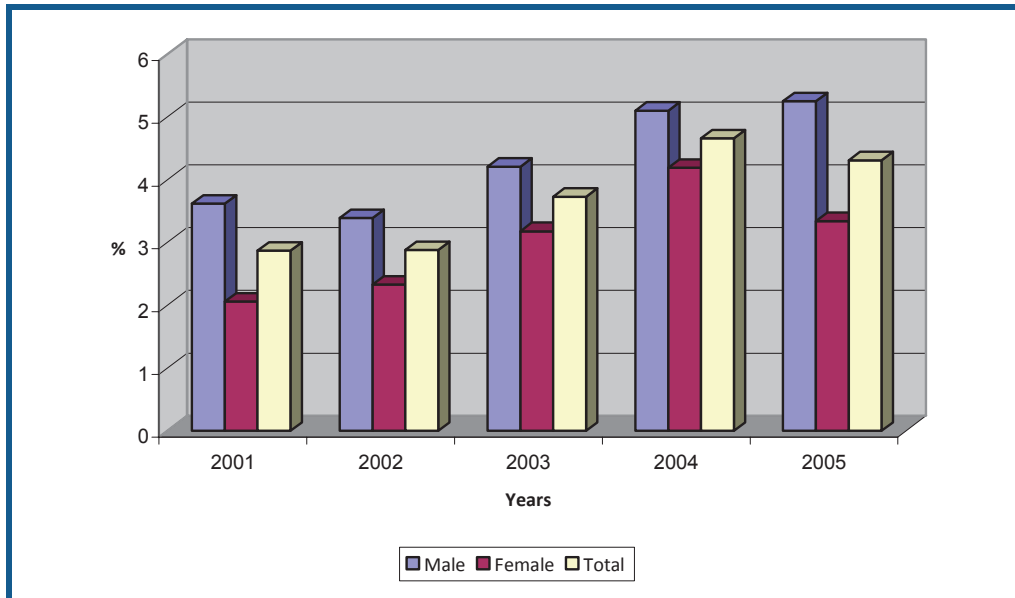
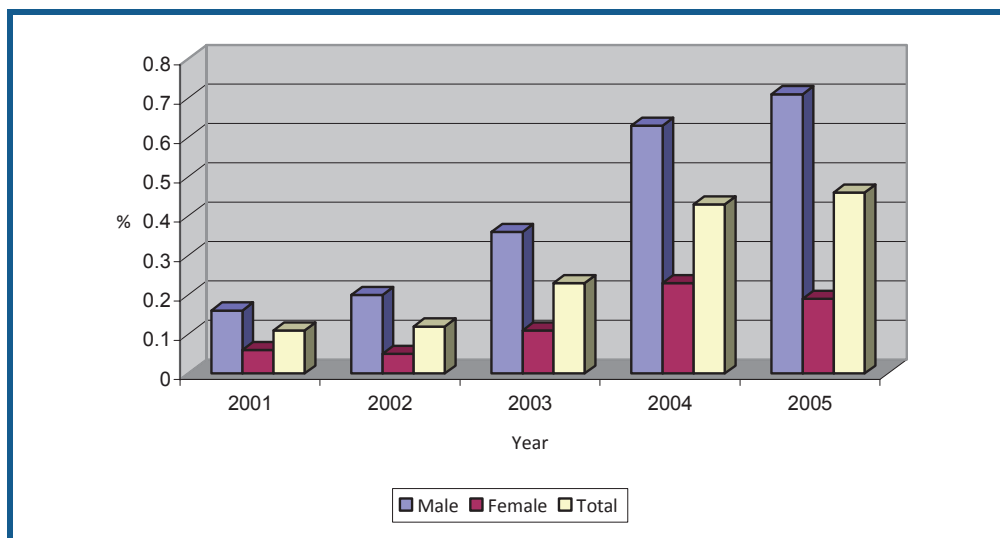


Chart A3.3. Tertiary graduation rates

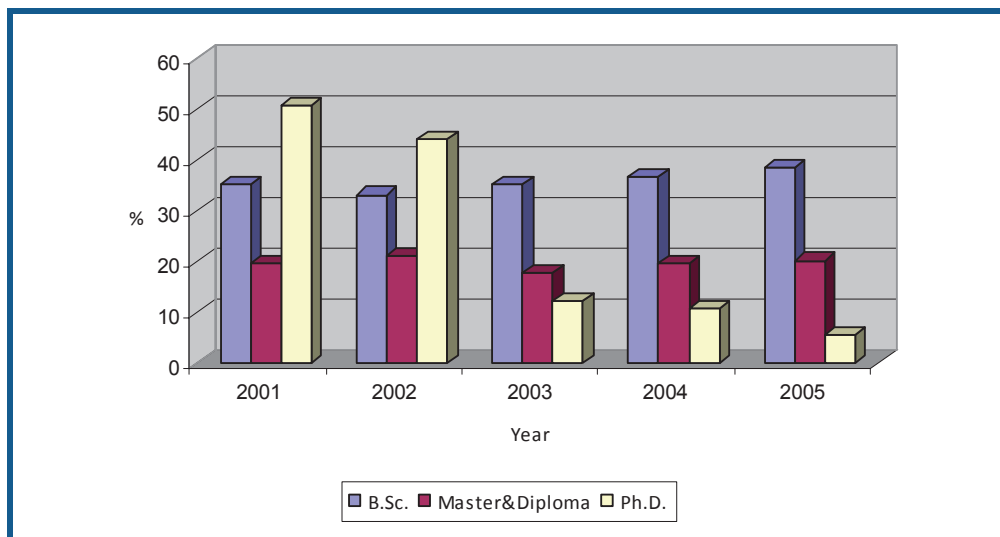
This chart shows the percentage of the 28 years old age group normally completing the third level (Ph.D.) of tertiary education in all fields.



A3

Chart A3.4. Tertiary graduation rates

This chart shows the percentage of graduates in each level of tertiary education who graduated in science programs.



highlights of this indicator

- Tertiary graduation rate in all levels has increased constantly; over the years, from 20% in 2001 to 35% in 2005 for Bachelor; from 2.9% in 2001 to 4.3% in 2005 for Masters &Diploma; and from 0.16% in 2001 to 0.46% in 2005 for Ph.D.. This trend applied to males and females, and exhibits a sharper increase in the last two years.
- The percentage of female graduates is higher than males in the first tertiary level but lower than males for higher levels.
- The share of science graduates as a percent of all graduates at the same level changed only slightly for Bachelors and Masters (+Diplomas) in recent years but decreased sharply for PhDs, even as the number and percentage of all PhD's increased. Total PhDs increased from 81 in 2001 to 332 in 2005, whereas the number of science PhD's decreased from 41 in 2001 to 19 in 2005.
- The main activity in tertiary education seems to be at the first level (Bachelor degree). Low rates beyond the Bachelor's degree could be due to:
 - High cost of graduate level education
 - Lack of financial support for graduate students.
 - Lack of qualified candidates, and
 - Good employment opportunities for distinguished bachelor holders vs. unsatisfactory employment opportunities for Ph.D. holders.

- The sharp increase in the first level graduation rate in the last two years is a result of increases in enrollment rates (26% in 2001 to 40% in 2003 (indicator C2)) due to the relaxation of admission requirements to tertiary education and the expansion in this level of tertiary education in public and private universities.
- The decrease in Ph.D. science graduates as compared to total Ph.D. graduates in recent years is a result of two factors: the number of Ph.D. graduates increased, and most of them are products of local Ph.D. programs, which are primarily in the education and humanities rather than in sciences.
- The graduation rate of tertiary education is relatively high and most of that is in the non-scientific fields. Employment opportunities for these graduates in these areas are limited, with the possible exception of the field of education. A recent policy by the Ministry of Education to require teachers to hold a basic degree in specified areas of specialization and then seek a diploma or a master's degree in education is beginning to have an impact on the graduation rates at the second level of tertiary education, especially for females. The prevalence of non-science local programs at the master's and Ph.D. levels is expected to continue as it should, especially to guard against inbreeding in the quality of such graduates.

Benchmarking

Tertiary programs vary widely in structure and scope among countries. However, on the average, in the year 2003 (year of OECD data) the tertiary graduation rate for the first level is higher than half of the OECD countries including U.S., Spain, France, Germany, but the rate of higher tertiary levels is lower than most OECD countries.

Benchmarking of this indicator with OECD countries should take into consideration the following:

- The above charts represent graduation rate from Jordanian universities and does not include the sizable group that graduates from foreign universities at all levels. The number of students enrolled in foreign universities is estimated by the Ministry of Higher Education to be in the range of 20-25% of the number enrolled in state universities. The same percentage is expected to hold for graduation rates.

What 15-year-olds can do in mathematics?

This indicator examines the mathematical and scientific performance of 15-year-old students, drawing on data from the Third International Mathematics and Science Study (TIMSS 2003) carried out under the supervision of the International Association for the Evaluation of Educational Achievement. It describes both skills for students at Jordan public and private schools in terms of the percentage of students at each level of ability as well as in terms of the mean scores achieved by students on the overall exams in math and science. A total of 4489 Jordanian students (male & female) participated in this study.

Key results

Chart A4.1. Mean performance of students

This chart summarizes the mean overall performance of 15-year-old students in different countries as indicated by their mathematical scores.

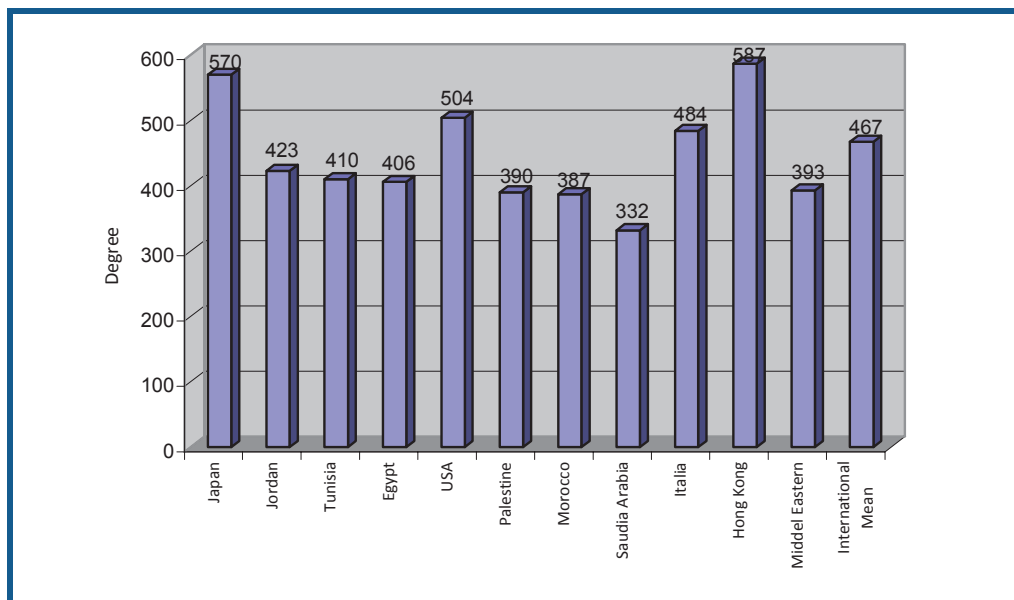


Chart A4.2. Mean performance of students in science

This chart summarizes the mean overall performance of 15-year-old students in different countries as indicated by their scores in science (2003 data).

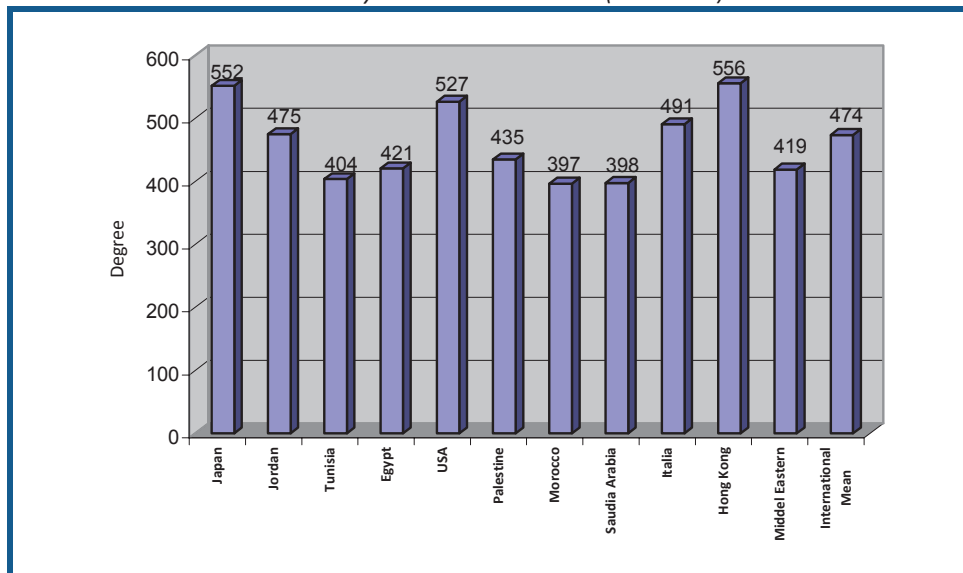
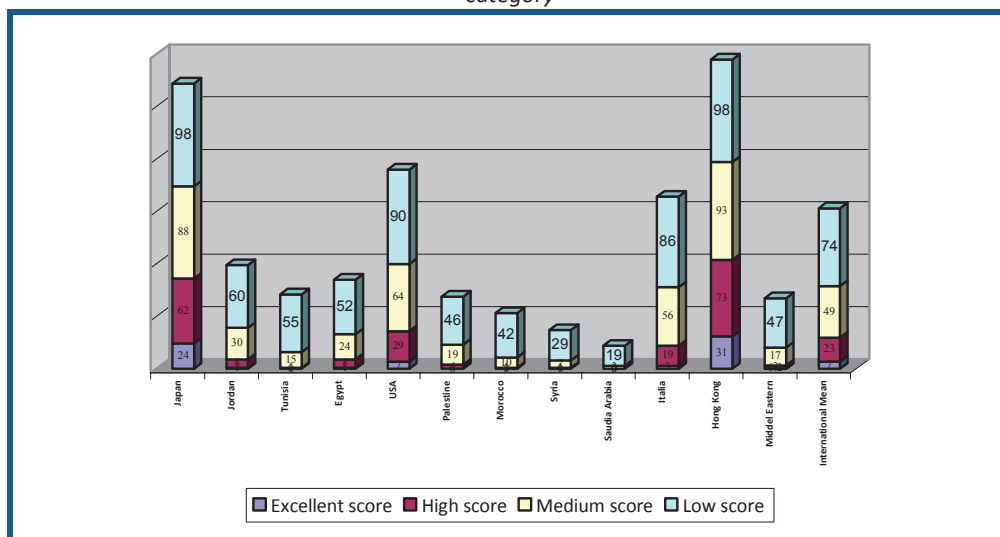


Chart A4.3. Distribution and percentage of student performance in mathematics
This chart shows the percentage of students who reached different levels of performance (excellent, high, medium or low). The numbers on the chart refer to the numbers of students scoring in each category



highlights of this indicator

The weak performance of students in mathematics and science in Jordan as compared to international standards should alert us to the need for reviewing these programs in our school system. It is important to note that 60% of the tested

A4

students scored low, 30% scored medium, and only 10% scored high and excellent. This indicates that deficiencies are most likely due to proficiency of teachers and efficacy of pedagogic processes rather than to program content. The review should focus more on qualification of teachers who teach these subjects. Perhaps a system of incentives needs to be devised to reward and retain good teachers.

Benchmarking

The performance of 15-year-olds in mathematics is significantly below the international mean and barely above it in science. Both scores are higher than the mean for Middle Eastern countries, but ranked best among Arab countries. Compared to OECD countries, Jordan ranked better than Turkey only in mathematics.

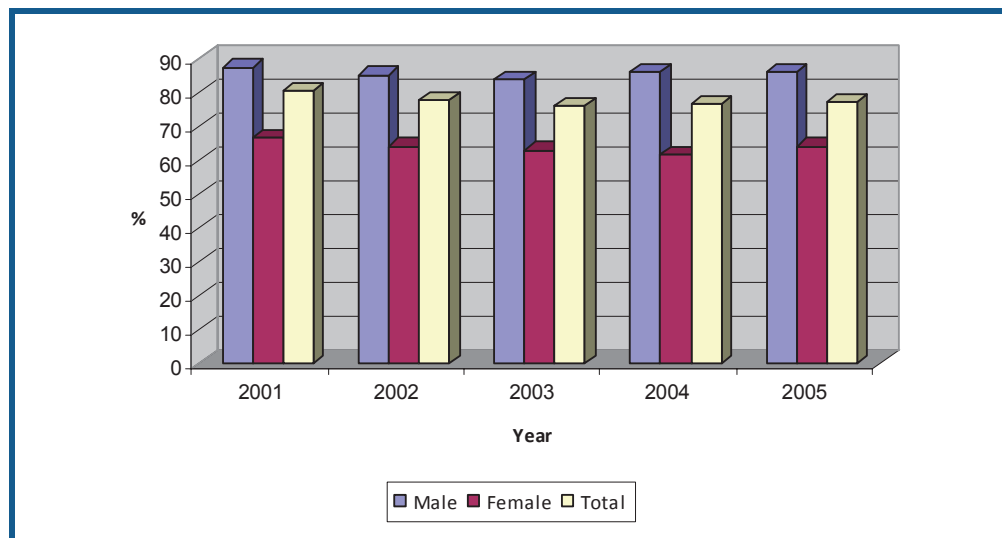
Performance is considered excellent if the score is >625, high if the score is 550-624, medium if the score is 475-549, and low if the score is 400-474. The maximum possible score is 700.

Labor force participation by level of educational attainment Employment/unemployment rates by level of educational attainment

These two indicators belong to a general group of indicators which describe the educational profile of employed and unemployed people (the labor force) of 25-64 year age groups in terms of the highest level of education attained. Individuals who have attained a given level of education may or may not seek or gain employment, and the first indicator measures the participation of individuals with that level of education in the labor force. The second indicator describes unemployment within each educational level by gender. It gives an assessment of the impact of all levels of education on the aptitude and skills of the labor force. The key results are presented in table formats for the years 2001-2005,

Key results

Chart A8.1a Percent participation of individuals in labor force for tertiary education by gender*



* Labor force is defined as the sum of those 25-64 years of age who are employed plus those who are unemployed and seeking employment. For example, 77.3 of all individuals who have attained the tertiary education level belonged to labor force in 2005, indicating that the rest of them (22.7%) were neither employed nor seeking employment.

Chart A8.1b Participation in labor force for Post Secondary non-Tertiary education by gender

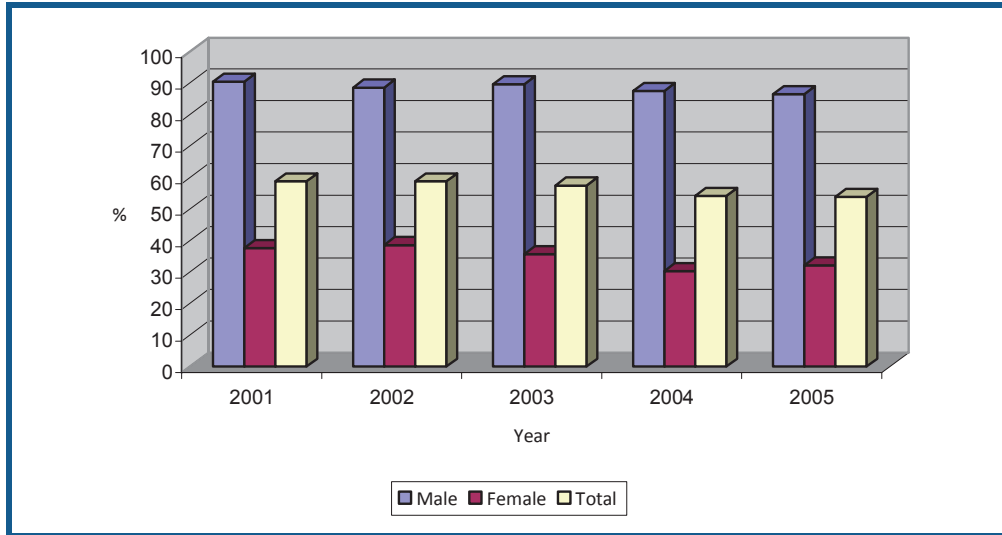


Chart A8.1c Participation rate in labor force for Secondary Education or Less by gender

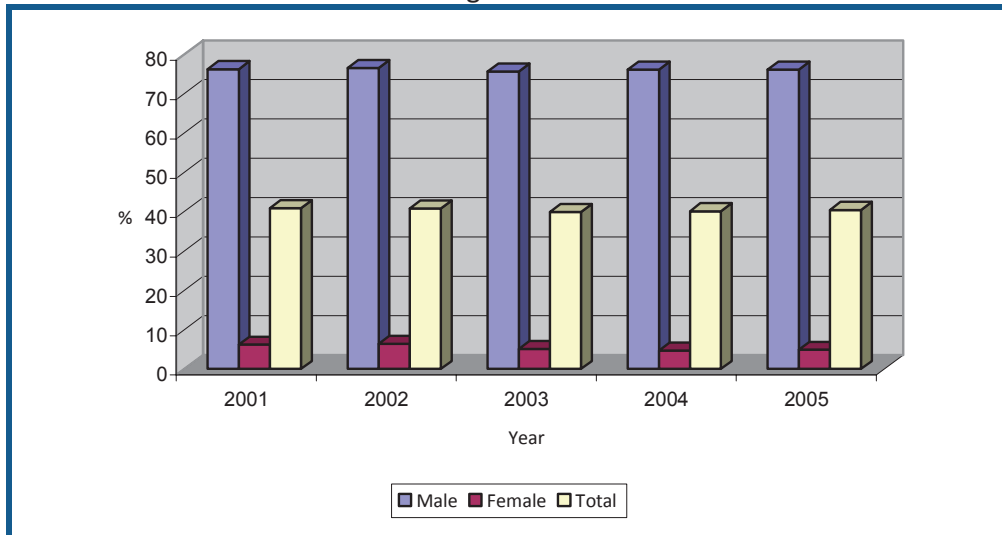


Chart A8.2a Percent Employment/unemployment Rates for upper Secondary Education by Gender

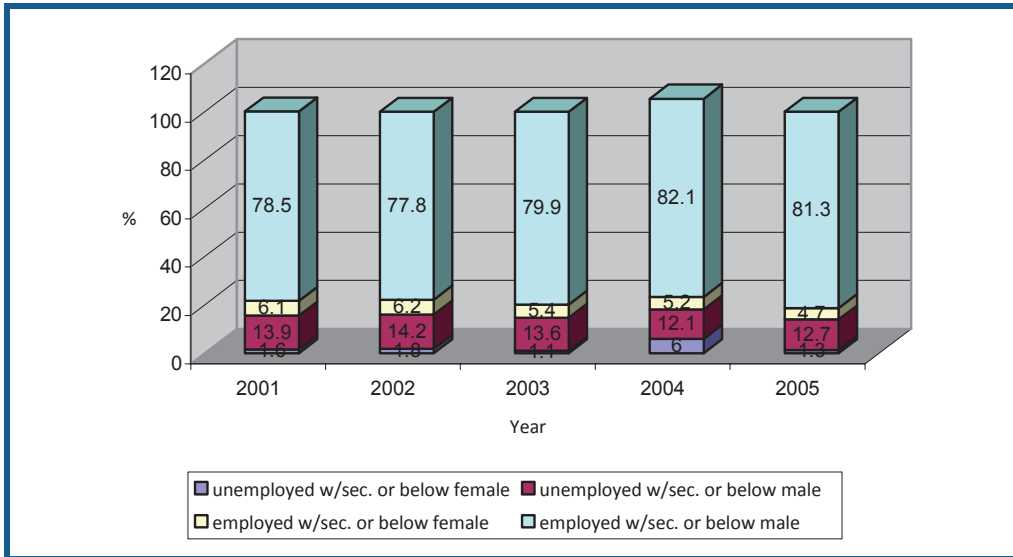


Chart A8.2b Percent Employment/unemployment Rates for Post Secondary non-Tertiary Education by Gender

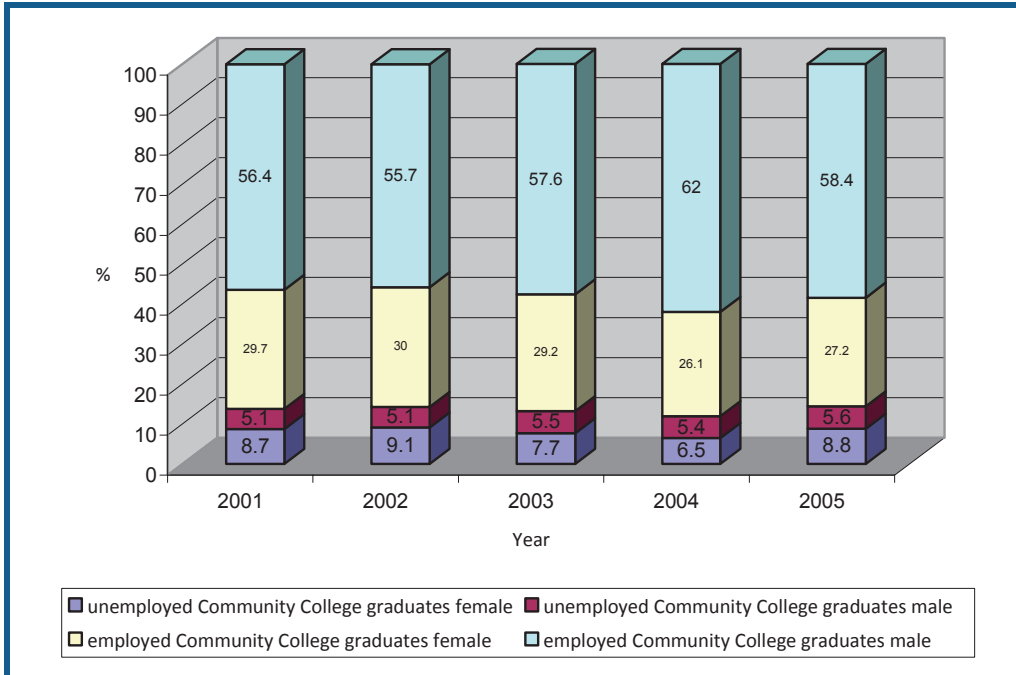
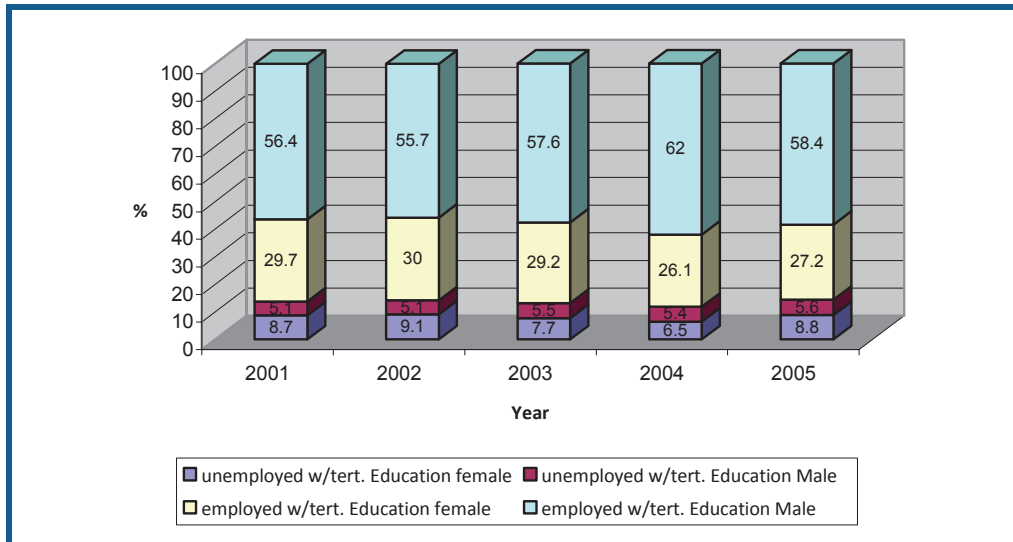


Chart A8.2c *Percent Employment/unemployment Rates for Tertiary Education by Gender*



highlights of this indicators

- Unemployment in the ranks of university graduates (tertiary education, male plus female) increased from around 12% in 2001 to around 18% in 2005. Unemployment in the ranks of graduates of upper secondary or post-secondary non-tertiary (community colleges) appeared to be steady at around 14.5% for the former and 13.6% for the latter.
- The convention has been to consider people between 25 and 64 years of age. Although those whose educational attainment is at the secondary or even the tertiary levels in Jordan may be employed before the age of 25, it was necessary to adopt the conventional age limits for the purpose of international benchmarking.
- Overall employment rates seem to hover around 85% for all levels of educational attainment. The gender breakdown, however, seems to indicate that a higher level of education improves the employability of females.
- Female unemployment rates of tertiary education graduates are substantially higher than the rate for females with secondary education or less. It is related to the much higher proportion of female college graduates who seek jobs as compared to those with secondary education or less.
- High unemployment rates of individuals with high levels of educational attainment indicate a mismatch between the skills required by the labor market and the skills acquired by the graduates.

Benchmarking

The foregoing charts cover the period from 2001 till 2005, and the data indicate that within the age group of 25-64 years, around 41% of those with high school education or less belonged to labor force, while 54-59% of those who were community college graduates belonged to labor force. The corresponding figures for university graduates ranged from 76-80%. Employment within these categories ranged from 80-82% for secondary education or less, from 86-88 for community college graduates, and from 82-88 for university graduates.

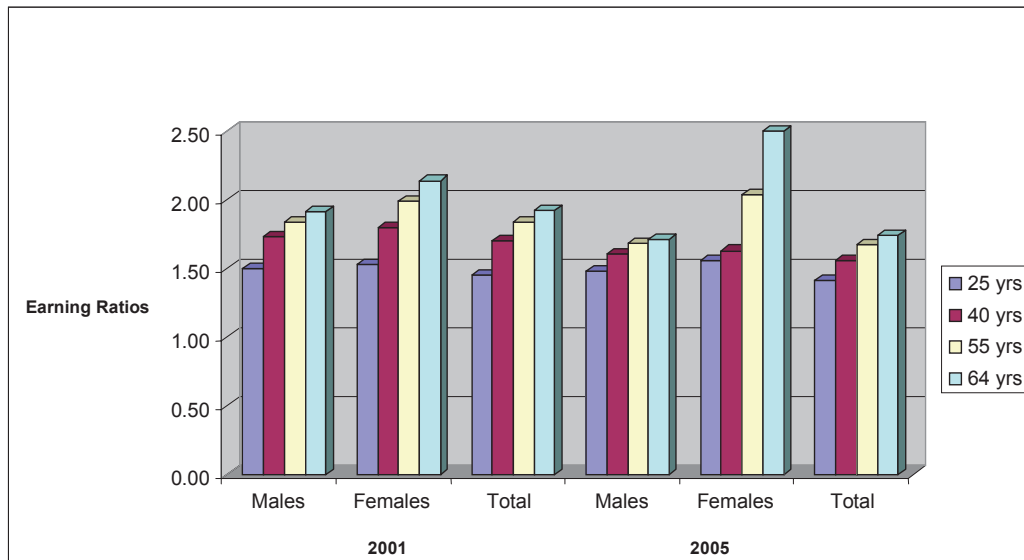
Employment rates in OECD countries in 2003 ranged from 60-80% upper secondary and post-secondary non-tertiary education and from 45-75% for below upper secondary education.

The returns of education: education and earnings

Higher levels of education lead to higher skills and increase the potential of a person to earn more than without these skills. The wage differential increases in a compounded fashion with time as more opportunities open up to the more educated person. This indicator, therefore, portrays the comparative advantage of education over time and shows the benefit of investing in human capital.

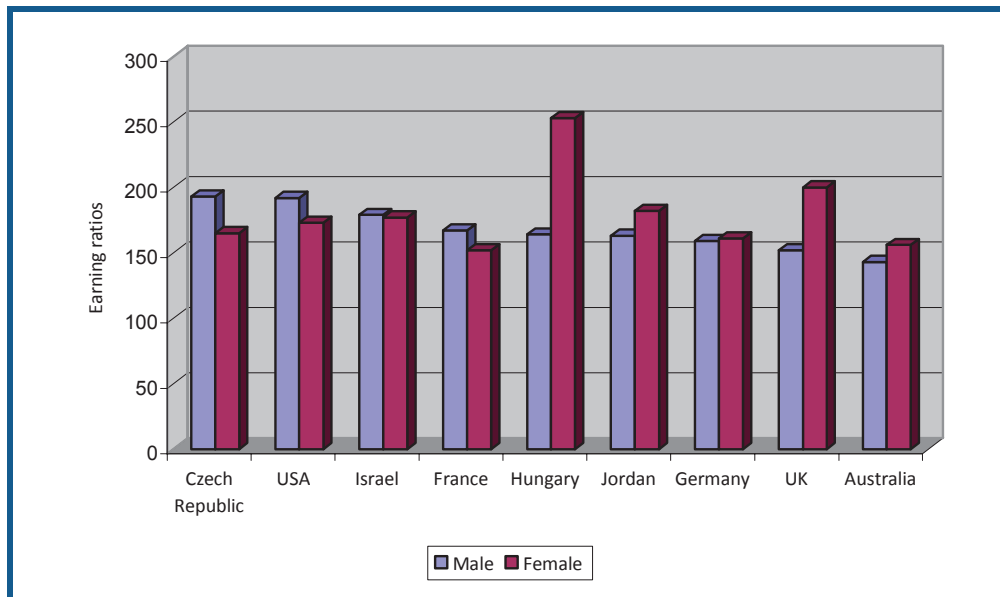
Key results

Chart A9.a1: Earning Ratios for University relative to Secondary Education by Age, Gender



These data were computed from trend lines smoothed by regression equations.

Chart A9.a2 Earning ratios for 25-64 age group in 2005



highlights of this indicator

- Earning ratios ranged between 1.4 and 2.4 for both genders at all age groups, indicating that investment in human capital is profitable to the individual because it will give him/her a wage advantage throughout his/her productive life.
- Earnings were quite variable and missing for some categories. A scatter plot of earnings versus age showed definite trends and when the trend line was smoothed by regression it became possible to estimate missing values for specific age groups.
- Earning ratios increased with age, indicating that wages for university graduates continued to rise while those of high school graduates tended to plateau out.
- Earning ratios average over the entire career range of 25-64 years was 1.76 and 1.63 for males in 2001 and 2005, and was 1.85 and 1.82 for females, respectively.
- Earning ratios for males relative to females, both with university education, were 1.21 in 2001 and 1.20 in 2005, while that of males relative to females with secondary education were 1.27 and 1.34, respectively.
- The ratios seemed to decrease between 2001 and 2005, and this is worth monitoring in the years to come.
- The comparison between levels of educational attainment is not only sensitive to age but also to the discipline studied in tertiary education. The effect of specialization on relative earnings is recognized here, but no index was developed for it, largely because of insufficient statistical data.

Benchmarking

A9

Higher education at the tertiary level (bachelor's degree) gives Jordanians a career advantage in wage earnings of 63% for males and 82% for females, which is quite comparable to many European and other countries. The advantage is better for females than for males, which is also the case for UK and Hungary.

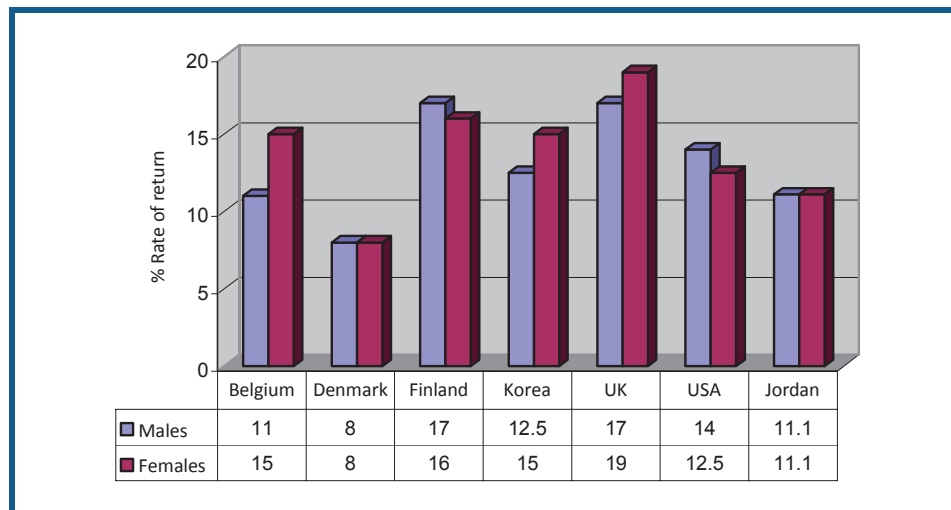
INDICATOR A9.b

Private internal rates of return to education

This indicator allows us to evaluate investment in education in a manner similar to the evaluation of business investments. It is based on an entirely hypothetical case of a 40 year old person with a high school education who decides to upgrade him/her self with a university education over the next 4 years. It is assumed that the cost of this education will comprise only the university fees for a full time student as well as the forfeited earnings during these 4 years. Upon graduation, it will be further assumed that earnings will be equal to his/her peers of college graduates of similar age. Other items of cost of living are assumed to remain the same whether he/she goes to college or not. The returns on investment in this person's education arise from wage advantages for a college graduate over a high school graduate over the next 20 years. These returns will be measured in the form of a rate of return on investment. The resulting indicator is actually a confirmation of what indicator 9a is telling us, though in a different format.

Key results

Chart A9.b Private internal rate of return for an individual obtaining a university level education from a secondary education level



highlights of this indicators

- This indicator is built around a hypothetical case, and the case is especially unrealistic for Jordan. The decision to go to college is made at a very early stage of the life of students, usually right after high school or no later than 2-3 years after that. A later decision will most likely be of the type of an individual pursuing university education on a part time basis or by enrolling in evening programs.
- The indicator seems to imply that if the prevailing discount rates are higher than 11%, then it will not be financially rewarding to go to college. This is misleading in at least two ways. First, this IROR is the average for all specialties, and some specialties will be more rewarding than others. Second, the stream of wages for people 25-64 years of age is not fixed, but keeps changing, mostly increasing. These changes did not enter into the computation because any presumption of how they will change will be highly conjectural. By comparison, indicator A9.a is more stable over the years and is less sensitive to inflationary fluctuations.
- The anticipated benefits of college education are more than its wage advantage over lower levels of education. College education opens up new vistas of opportunities throughout the productive life of the individual. The ceiling of wages that seems to prevail for individuals with secondary education or less is usually accompanied by another ceiling on career opportunities.

Chapter B

Financial and Human Resources Invested in Education

This chapter provides a comparative analysis of the financial and human resources invested in higher education. This chapter describes trends in spending patterns within institutions of higher learning, and compares spending on higher education to spending on other social priorities. Analysis covered the following indicators in this chapter:

1. Indicator B1: Educational expenditure per student
2. Indicator B2: Expenditure on educational institutions relative to Gross Domestic Product
3. Indicator B3: Public and private investment in educational institutions
4. Indicator B4: Total public expenditure on education
5. Indicator B5: Support for students and households through public subsidies
6. Indicator B6: Expenditures in institutions by service category and by resource category.

Educational expenditure per student

This indicator provides an assessment of the investment made on each student. Expenditures are averaged for all universities and all students in all disciplines. Expenditure per student is largely influenced by teacher salaries (see Indicators B6 and D3), pension systems and other fringe benefits, teaching materials and facilities, and participation in tertiary education, (see Indicator C2). Policies put in place to attract new teachers or to reduce average class size or change staffing patterns (see Indicator D2) have led to changes in expenditure per student.

Key results

Chart B1.1 Annual expenditure per student in public and private universities

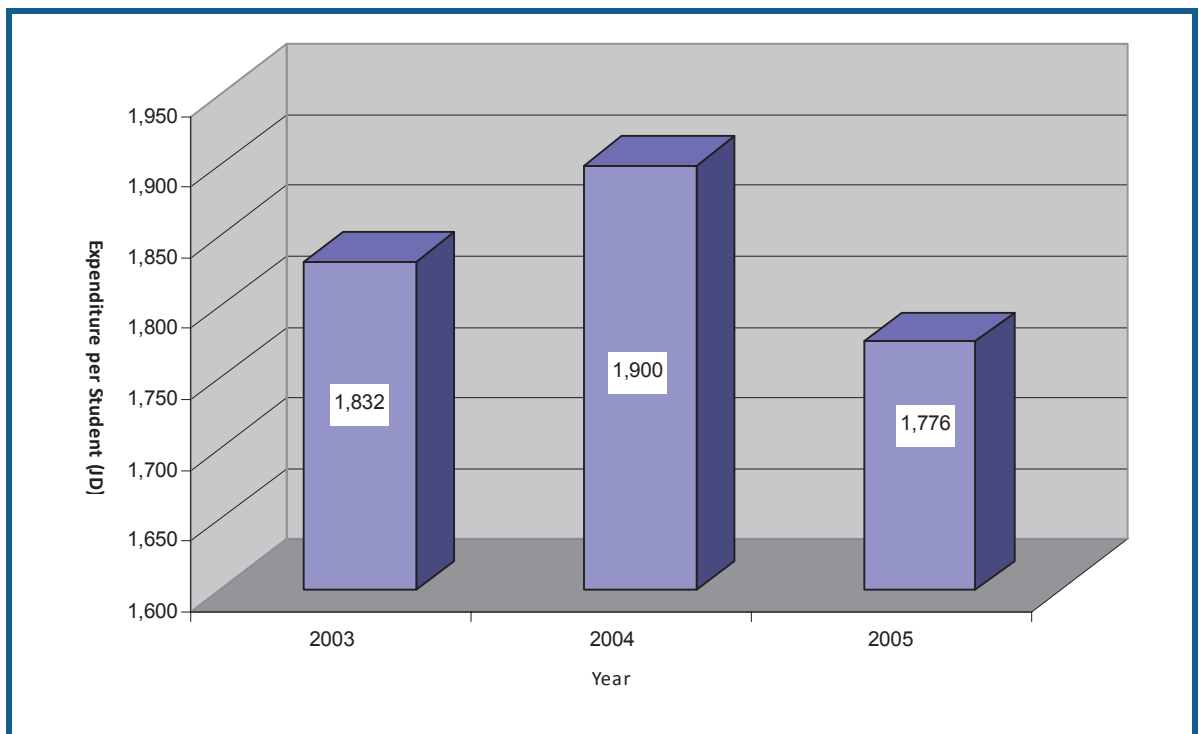
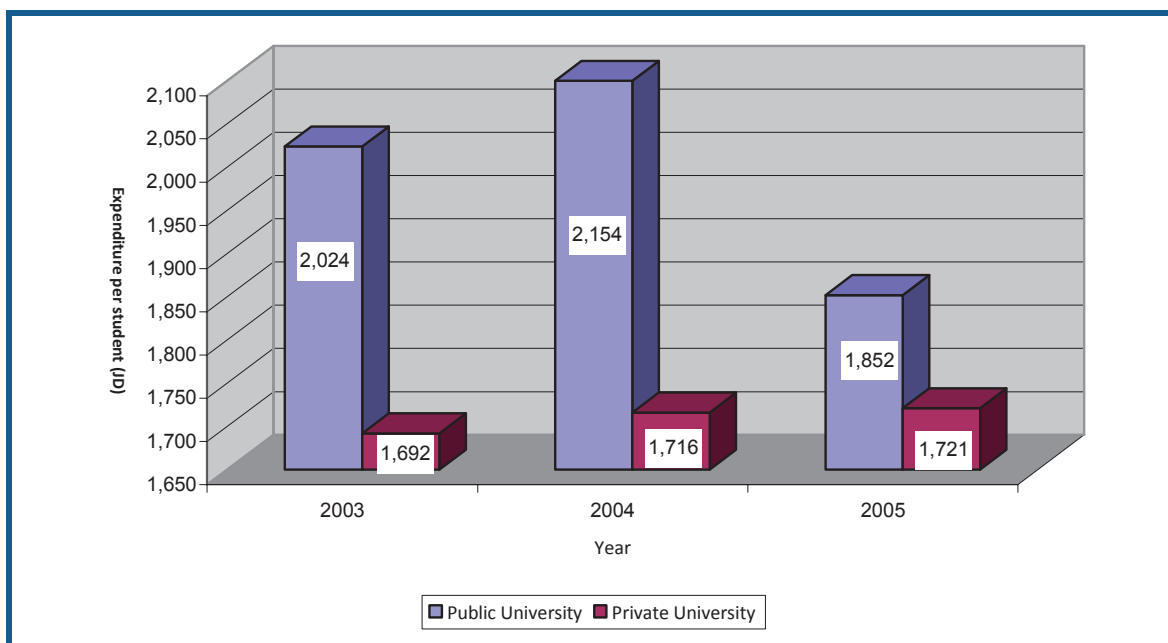


Chart B1.2 Annual expenditure per tertiary student distributed by university type (public, private universities)



highlight of this indicator

- Private universities make significantly lower expenditures per student as compared to public universities.

Benchmarking

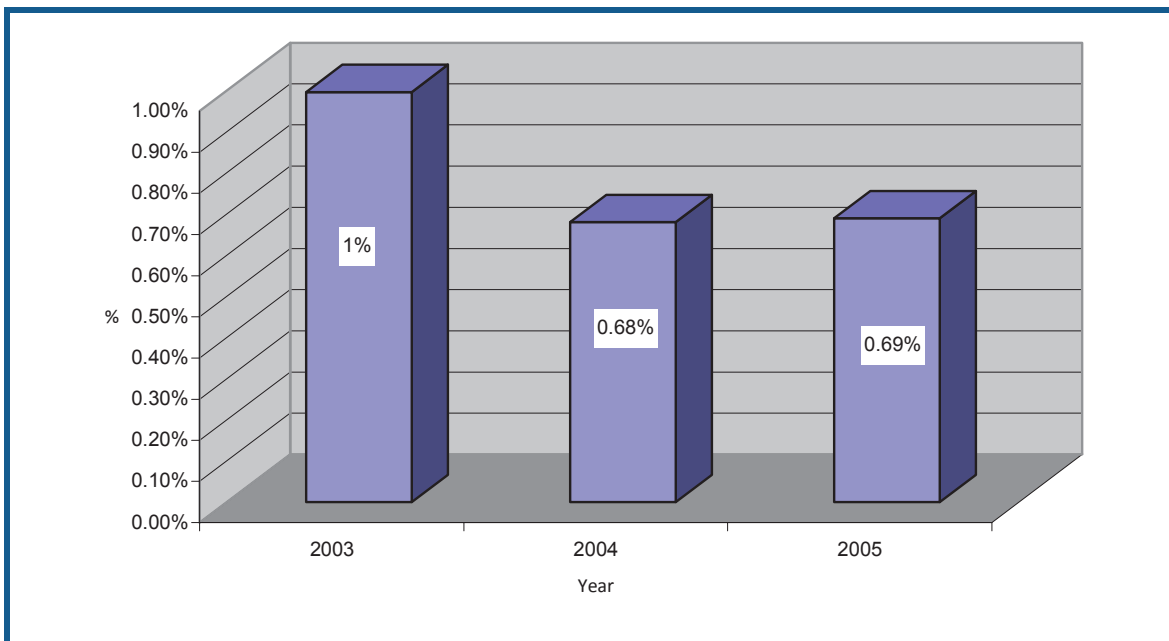
- Average expenditure per student in tertiary level in Jordan is JD **1776**, which is equivalent to **US\$2506**, while the average annual expenditure per student in the tertiary education in OECD countries is **US\$ 13343**. This figure for OECD countries was calculated after converting the actual figures using “purchasing power parity” data. The figure for Jordan is from raw data.
- Compared to OECD countries, only the Slovak Republic spends less than Jordan. Mexico's annual expenditure per student in all educational levels including primary, secondary and tertiary is around **US\$ 1900**, while in Slovak Republic it is around **US\$ 2200** (see comment above).

Expenditure on Institutions of Higher Education Relative to Gross Domestic Product

Education expenditure as a percentage of GDP shows how a country prioritizes education in relation to its overall allocation of resources. Expenditures on state institutions of higher education in Jordan consist of tuition fees, government allocations (transfers), and donations from private entities other than households (see Indicator B3). Expenditures on private universities consist of student fees exclusively. Two state universities, Jordan University and Yarmouk University, have also benefited over the last few years from returns accrued to their modest investment funds.

Key results

Chart B2.1 Expenditure on Institutions of Higher Education Relative to Gross Domestic Product



highlights of this indicators

- This chart measures educational investment through the share of national income that each country devotes to spending on institutions of higher education. It captures both direct and indirect expenditures on these institutions.
- The apparent parity of expenditures in relative terms indicates that Jordan gives an equivalent priority to higher education. This is misleading, however, because the difference in absolute numbers is huge due to differences in GDP between Jordan and OECD countries
- If we take into account that 80-85% of expenditures on universities cover primarily wages and that local wages are sharply less than their counterparts in OECD countries, the disparity becomes problematic rather than just significant. The matter is further exacerbated by the fact that the second most important item of expenditures goes to cover the cost of laboratory equipment, supplies, library resources, all of which are imported at costs comparable to the costs incurred by OECD universities.

Benchmarking

Expenditures on public universities in Jordan amounted, on average, to 0.79% of GDP between 2003 and 2005. By comparison, OECD countries spent 2.4% of their collective GDP in 2003 on institutions of higher education. In as much as most OECD universities are tuition free, spending is primarily from public sources. In Jordan, by contrast, spending is shared between public spending (government allocations) and tuition fees paid by students or their sponsors.

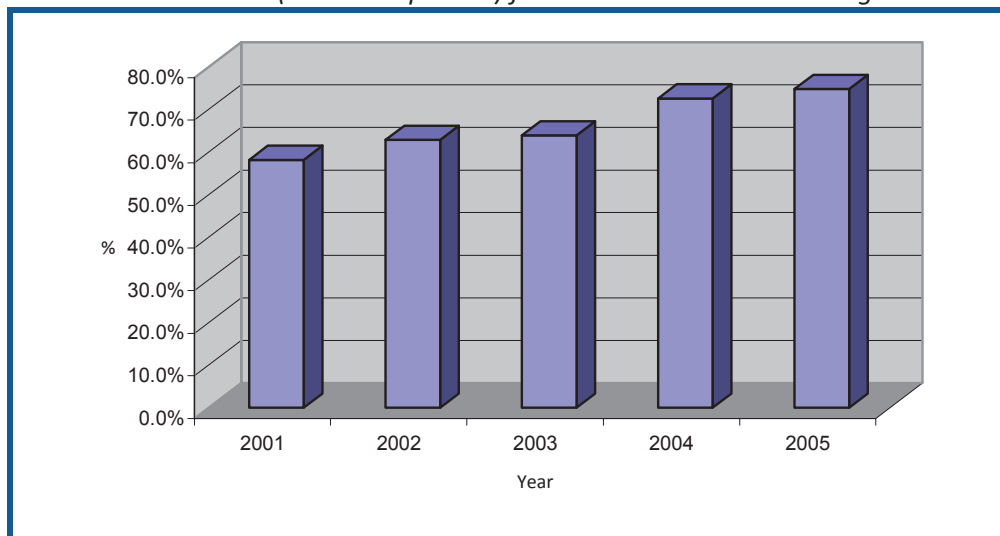
Public and private investment in institutions of higher education

This indicator examines the proportion of funds expended on universities that are derived from public and private sources. It also provides the breakdown of private funds between household expenditure and expenditure from private entities other than households. This indicator sheds some light on the status regarding the level of public-private sharing in covering the cost of tertiary education in Jordan. The higher the amount of household expenditure required for educational institutions, the stronger the pressure on families. Thus, access to tertiary studies may be influenced both by the amount of private expenditure needed and by the financial transfers to households that are analyzed in indicator B5.

Key results

Chart B3.1. Share of private expenditure on tertiary institutions

The chart shows private spending on educational institutions as a percentage of total spending on educational institutions. This includes all money transferred to higher education institutions (state and private) from sources other than the government.



highlights of this indicators

- The rising share of private spending on tertiary education has been due to increasing enrollment over the last five years in private universities as well as in the parallel programs at state universities, both having higher tuition fees, with a corresponding decrease in public spending.

B3

- The rising share of private spending poses an equity problem related to the affordability of higher education to the less advantaged students. Mitigation measures need to be instituted to preclude the inevitable social distortions and inequity that will be generated.

Benchmarking

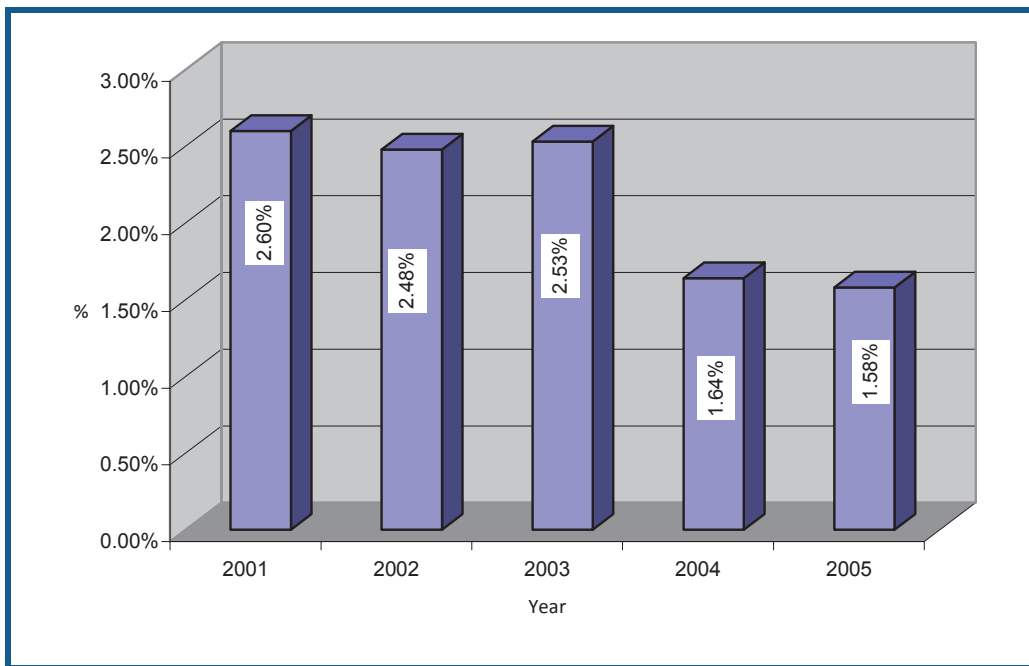
Private expenditure on higher education institutions averaged around 67% over the study period, and show a definite increasing trend. This was nearly exclusively as student fees. Benchmarking with OECD countries is not valid in this case because universities there are mostly tuition free, but yet private spending amounted to 24%. Private spending in Jordan was less than Chile and Korea, but more than Japan, USA, Australia, Canada, and New Zealand.

Total public expenditure on tertiary education

Public expenditure on education as a percentage of total public expenditure indicates the value placed on education relative to that of other public investments such as health care, social security, defense and security. It provides an important context for the other indicators on expenditure, particularly for Indicator B3 (the public and private shares of educational expenditure), as well as quantification of an important policy lever in its own right.

Key results

Chart B4.1 Total public expenditure on tertiary education as a percentage of total public expenditure



highlights of this indicators

- Public expenditure on tertiary education in Jordan is limited to state universities. It is derived from four main sources:
 - Revenues on imported goods tagged specifically for public universities. These revenues are assessed on the total values of imported goods, and are not tied to rates or amounts of custom duties on imports.

- Revenues from an earmarked national university tax on various services provided by the government or by utility companies that were formerly governmental entities.

Funds collected from both of these sources make up what has been referred to as government budgetary allocations.

- A government grant, discontinued after 2003..
 - Allocations from the Socio-Economic Transformation Program (SETP), also discontinued after 2003.
-
- The decline in public expenditure on tertiary education in 2004 and 2005 was due to the cessation of the governmental grant and the allocations from the (SETP) program in 2004 and 2005.
-
- Revenues derived from tagged taxes are not exclusively allocated to higher education as they were intended, and part of these revenues are allocated to other sectors. This policy needs to be re-evaluated to ensure that these revenues are used for the purpose for which they were collected.

Benchmarking

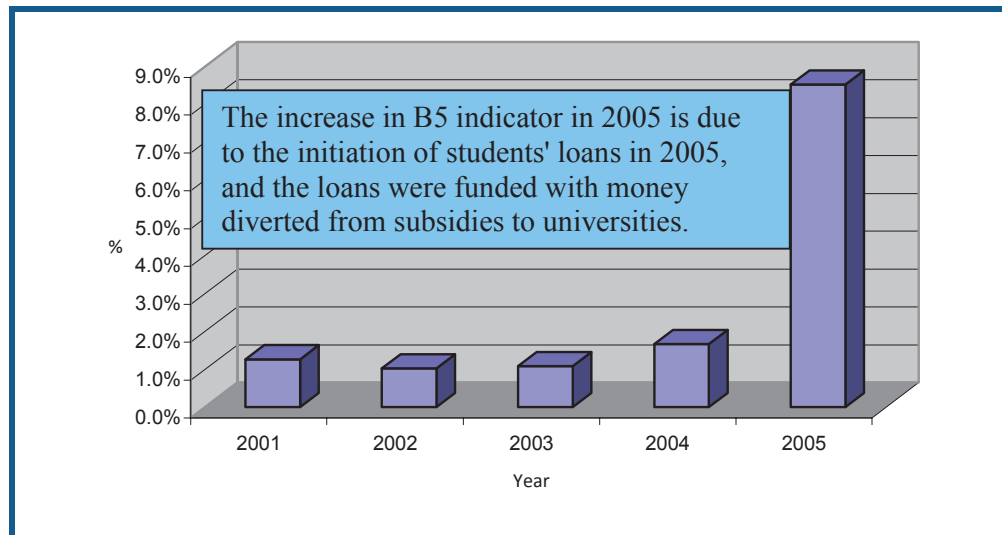
- The OECD country mean for public expenditure of all levels of education was 13.3% of total government expenditures in 2003, with nearly 25% of that devoted to tertiary education. The share of tertiary education was on the average around 3.3% of public expenditure .
- The corresponding figure for Jordan was around 2.5% in 2001 - 2003, and it dropped to around 1.6% in 2004 and 2005.

Support for students and households through public subsidies

This indicator examines direct and indirect public spending on educational institutions which is channeled through public subsidies to students and households for student fees, living costs, and considers whether financial subsidies are provided in the form of grants or loans. Expenditures in the form of grants, scholarships, or loans are included, whereas expenditures made directly to universities are not..

Key results

Chart B5.1 Public transfers as a percentage of total expenditure for tertiary education



highlights of this indicators

- Support for students through subsidies to their households to defray the students cost of living does not exist in Jordan.
- Support for students in all its forms can be used to entice them to study certain subjects that are deemed necessary by the government.
- Support to students in the form of loans should obviate the need to make a standing commitment to subsidies because in the long term the pay back on these loans should make the program self sustaining. This makes it a very good investment in the short term.
- There are many cases of tuition waiver legislations that do not specifically designate the university as the party that covers these waivers, yet universities

have always been required to do so by default. The burden of covering such waivers should revert back to the government.

Benchmarking

- In the OECD countries there are five types of public subsidies to tertiary education:
 - Students' grants/scholarships;
 - Students' loans;
 - Family or child allowances contingent on student status;
 - Public subsidies in cash or kind expenses such as housing or transport;
 - And subsidies to permit low-interest loans from private lenders.
- In Jordan, public subsidies to tertiary education are in the form of students' grants/scholarships, students' loans; tuition waivers, and tax exemptions for households with enrolled students. The first two types are measurable, while the last two are not for lack of sufficient data.
- Prior to 2005, student subsidies were in the form of scholarships only. Beginning with 2005, student subsidies in the form of loans were adopted. That boosted subsidies from around 1.5% to around 8.5%.
- OECD country mean for this indicator was 17% in 2002. Most of this must go to household expenses, because most universities in OECD countries are tuition free. The benchmarking, therefore, is not straight forward.

Expenditure in institutions by service category and by resource category

This indicator compares universities with respect to the division of spending between current and capital expenditure, and the distribution of current expenditure by resource category. This indicator is largely influenced by salaries of faculty members (see Indicator D1), their pension and other fringe benefits of monetary value, the proportion of new faculty members (see Indicator D7) and the size of the non-teaching staff employed in universities (see Indicator D3).

Key results

Chart B6.1 Current expenditures in institutions of tertiary education as a percentage of their total expenditures

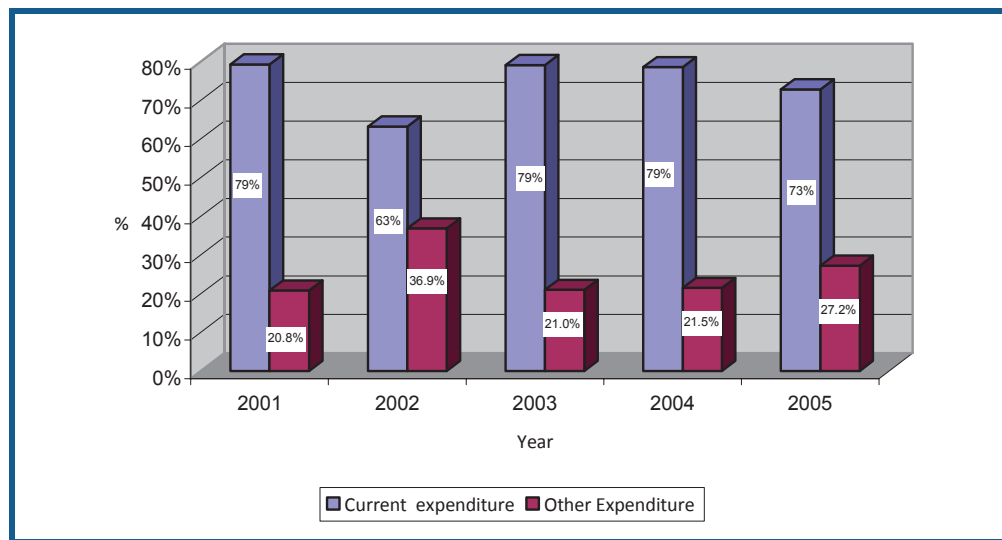
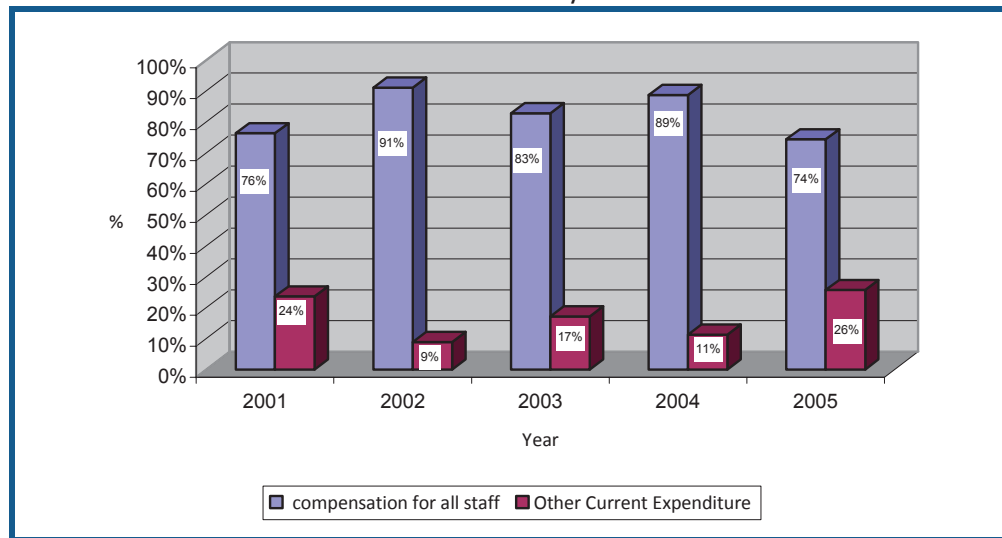


Chart B6.2 Compensation of all staff as a percentage of current expenditures in institutions of tertiary education



highlights of this indicators

- The indicator values shown in the charts above were the average for all public and private universities. There is a substantial difference, however, between public and private universities in terms of the allocation of expenditures within the current category (i.e. salaries and compensations vs. the rest). Public universities spend a lower percentage on salaries and compensations.
- The classification of budget items in university budgets does not lend itself easily to extract categories that correspond to internationally accepted classification. For example, the item on salaries and compensation should be differentiated to show that which goes to the faculty members, full time and part time lecturers, teaching assistants, supervisors of teaching laboratories, and all who are involved directly in teaching. Salaries and compensation of administrative staff like clerical employees, support services employees of all types and all who are not directly involved in teaching should be listed under a separate title.
- It would be very enlightening to break down some of these items in budget documents even further. For example, compensations include direct and indirect items, tangible and intangible items, monetary and in kind items, and so on. They comprise such items as social security contributions, pension fund contributions, sabbatical leave payments, and severance pay perquisites. Other benefits include health insurance at highly subsidized rates for the whole family and dependants, group life insurance, subsidized schooling for children, admission privileges for the children into public universities, and housing privileges in some cases.
- It would also be enlightening if university expenditures could be differentiated into the major categories of salaries, benefits, maintenance and upgrading of facilities, maintenance, and acquisition of laboratory and office equipment.

B6

- Analytical studies on current expenditure distribution in tertiary institutions in Jordan are needed to understand how decisions are made regarding budget items.
- Budget allocated to capacity building purposes for educational staff in tertiary institutions of Jordan is minor in comparison to other segments of current expenditures, which indicates that this area should be explored in regards to quality and quantity of capacity building programs implemented.
- The calculation process of B6 indicator, shows that universities of Jordan have no trend in how they segment their expenditures, there was no clear growth rate that matches the increase of living cost and decrease of currency value which could be considered as an alarm that urges policy makers to allocate fund for financial analyses to tertiary institutions' expenditure, budgeting process and planning.

Benchmarking

- On the average, 74% of the total expenditures by Jordan's institutions of tertiary education over the period 2001-2005 are for current expenditures, and 83% of that went to salaries and compensations (or 61% of the total), while the corresponding average current expenditures value for 2002 in OECD countries was 66%.

Chapter C

Access to Education, Participation and Progression

This indicator gives a picture of the average number of years a person expects to be formally enrolled as a student of tertiary education and of the participation rates at this level of education, whether full time or part time. It also presents data on enrollment of non-Jordanian students in Jordanian universities.

The following indicators are analyzed in this chapter.

1. Indicator C2: Participation in tertiary education.
2. Indicator C3: Foreign students in tertiary education.
3. Indicator C4: Education and work status of the youth population.
4. Indicator C6: Participation in continuing education and training*

**Due to non-availability of data on continuing education and training only a general statement is included.*

Participation in tertiary education

This indicator measures the entry rate as a percentage of the population of the same age group who enters into tertiary education for the first time (first year entrants). It also shows the enrollment rate as a percentage of the population (ages 19-22) that participates, full time, in tertiary education.

Key results

Chart C2.1. Entry rates into tertiary education

The chart shows the percentage of population, age 18 entering for the first time in tertiary level.

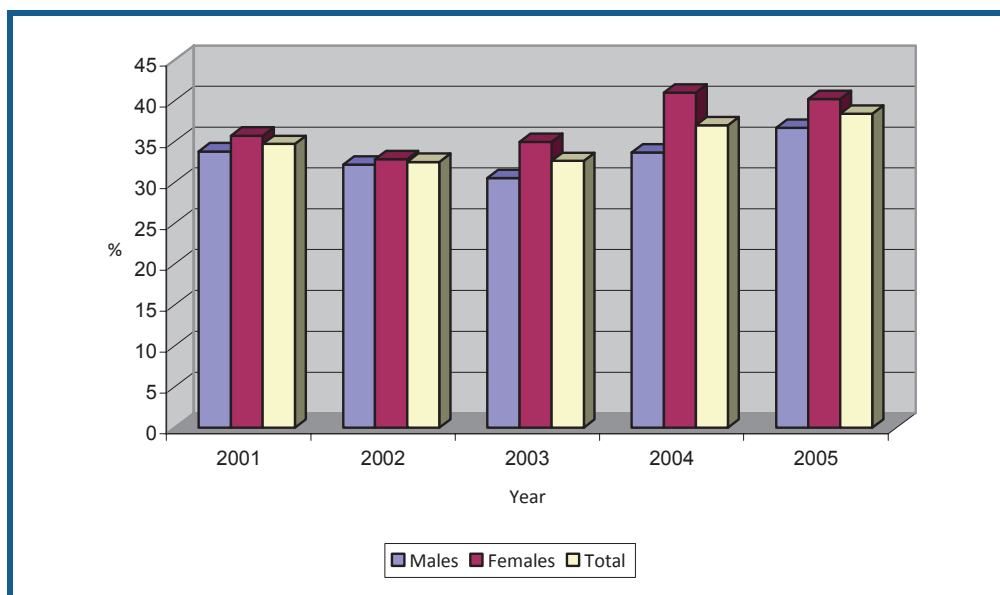


Chart C2.2. Enrollment rates into tertiary education

This chart shows the percentage of the population ages 19-22 enrolled in higher education.

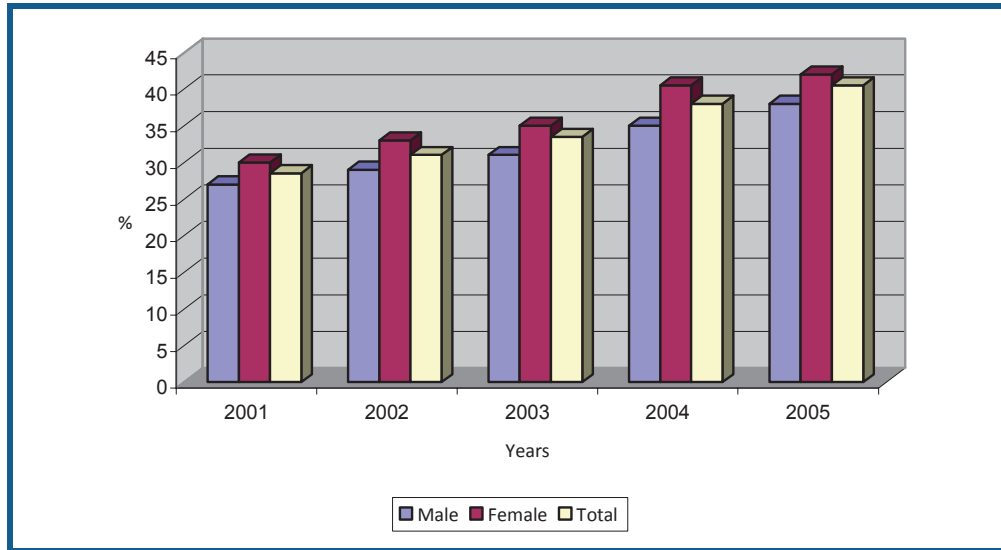
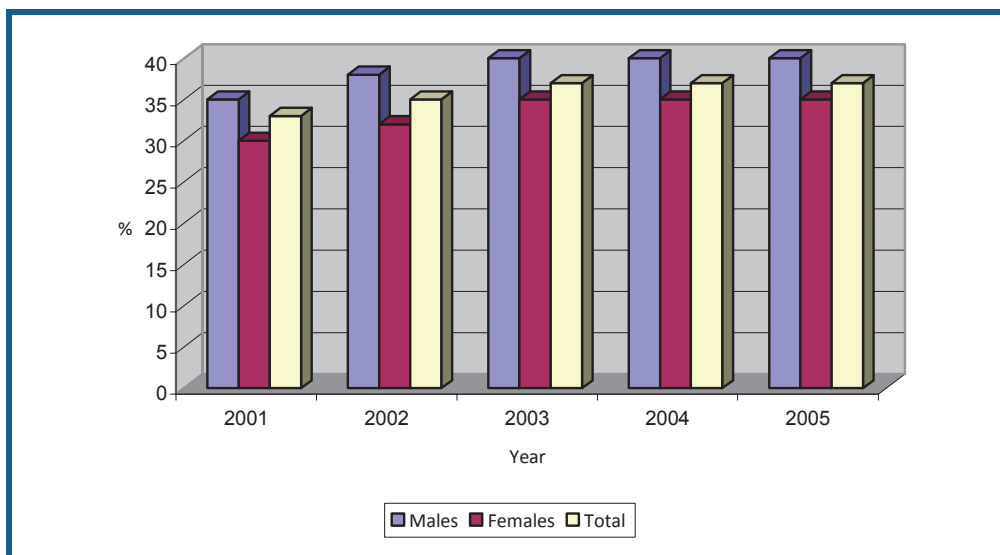


Chart C2.3. Local enrollment rates into tertiary education

This chart shows the percentage of the population ages 19-22 enrolled in higher education. Foreign enrollment is excluded (Indicator C3)



Highlights of this indicator

Entry rate was nearly steady at around 34% until 2003 then started to rise steadily afterwards (37.0% in 2004 and 38.4% in 2005). Enrollment rates, on the other hand, began to rise all through this period (28.1% in 2001 to 40.5% in 2005). Admission

standards were relaxed to allow top graduates from community colleges to be admitted into universities, and then in 2003 they were relaxed further to allow Tawjihi scores of 50-55% to be admitted into private universities. In addition there was a deliberate policy over the last 2-3 years of admitting more students into universities to placate public demand.

Entry and enrollment figures here do not include Jordanian students studying in foreign universities. Therefore, entry and enrollment data actually underestimate the numbers for the corresponding age groups as a result of not including those who are studying outside Jordan. These numbers have been steady at around 20% of those entering or enrolled in state universities. Roughly speaking this should add 5 percentage points to the males and 2 percentage points to the females, which would place this indicator among the high in the world, but still well below the OECD mean.

The entry rates for females are a little higher than males, although in overall numbers of enrollment males are more than females. This is probably due to longer stays for males and larger proportions of males transferring from community colleges.

Benchmarking

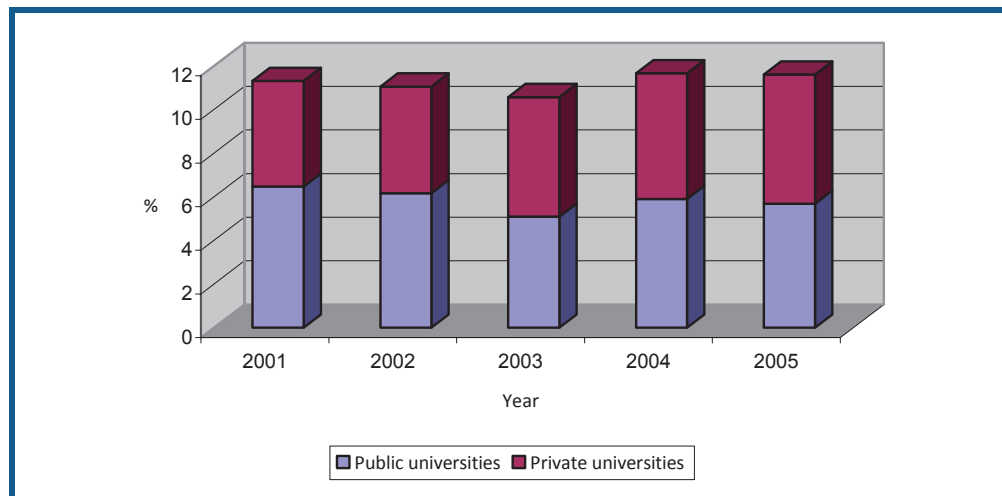
The entry rate in Jordan for the year 2003 (33%) was comparable to Austria, Belgium and the Czech Republic, higher than Mexico and Turkey, but lower than the rest of the OECD countries, and lower than the OECD mean of 53%. In 2005, Jordan is comparable to Japan, Ireland, Slovak Republic, France, Switzerland and Germany.

Foreign students in tertiary education

This indicator reflects on the internationalization of tertiary education and measures the competitiveness of the higher education system of the country over recent years. It also highlights the destination of foreign students to state vs. private universities.

Key results

Chart C3.1. Enrollment of foreign students in tertiary education as a percentage of total enrollment.



Highlights of this indicator

- The positive effects of internationalization of tertiary education calls for a policy for admission which leads to recruitment of outstanding foreign students in public and private universities.
- Quotas on foreign student admission are applicable to state universities in the regular program, but are not in the parallel program or at private universities.
- The share of foreign student's in public universities is declining (6.5% in 2001 to 5.7 in 2005), whereas that of private universities is rising (4.8% in 2001 to 5.9% in 2005). This trend needs monitoring to understand why this is happening. It is in the national interest that foreign students are attracted to public Jordanian universities because of the quality of education they expect to get rather than

C3

because of the laxity of admission requirements or higher expectancy to graduate.

Benchmarking

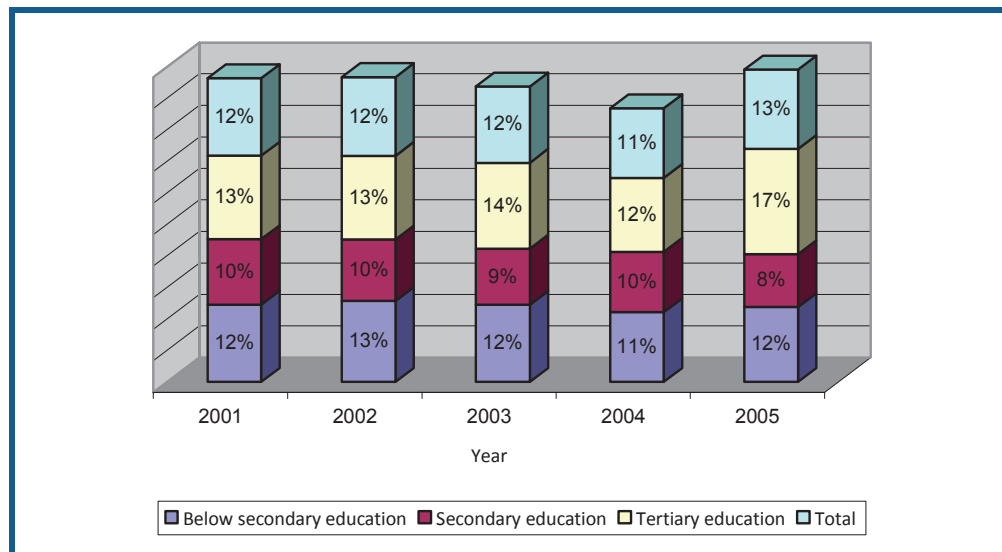
An enrolment of foreign students of around 11% compares well with OECD countries like United Kingdom, Belgium, Germany and France. It is higher than 70% of the OECD countries.

Education and work status of the youth population

This indicator examines the education and employment status of young people. It shows the extent of unemployment among the 25-29 year-olds who are not in education by gender and level of education attained.

Key results

Chart C4.1. Percentage of the male youth (25-29 year-olds) who are unemployed and not enrolled in some form of education.



C4

Chart C4.2. Percentage of the female youth (25-29 year-olds) who are unemployed and not enrolled in some form of education.

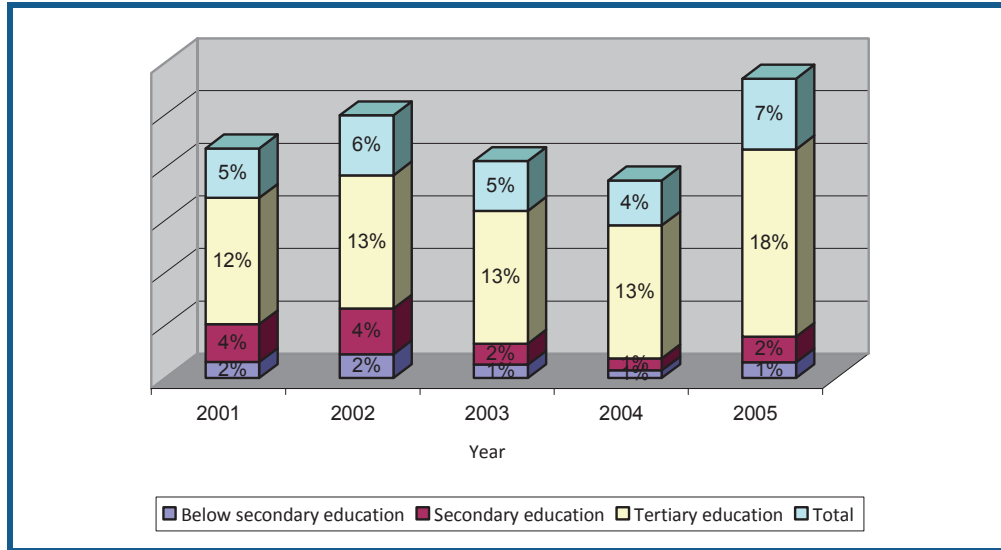
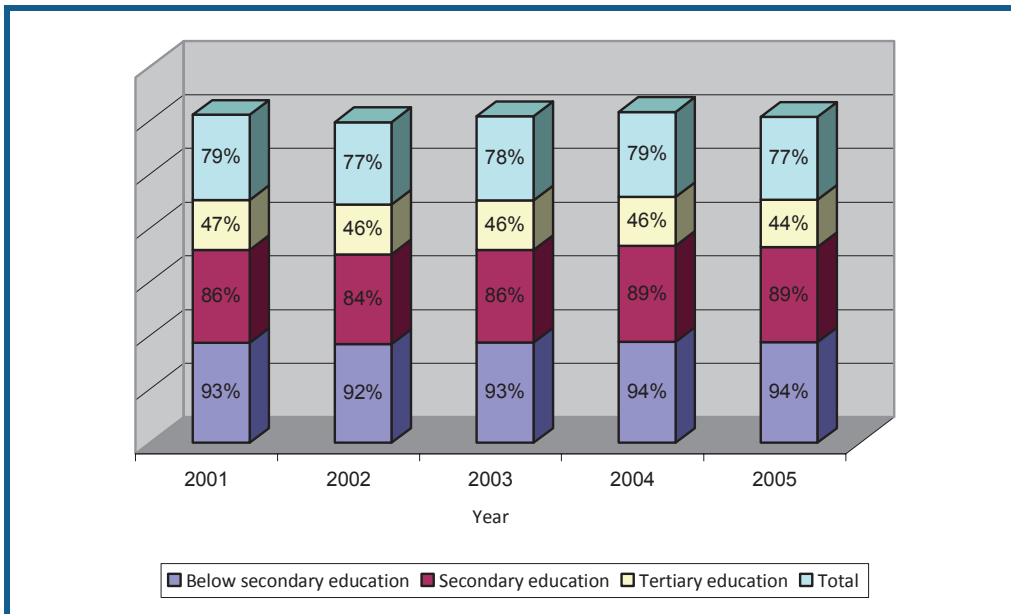


Chart C4.3. Percentage of the female youth (25-29 year-olds) who are not seeking employment(i.e. do not belong to the labor force) and are not in education.



Highlights of this indicators

- Total unemployment among male youth age 25-29 years remained nearly constant but relatively high in recent years, averaging around 12.3%. A general decrease in unemployment is noticeable among attainees of secondary education (10.4% in 2001 to 8.4% in 2005), but this is counterbalanced by an increase in unemployment among attainees of tertiary education (13.3% in 2001 to 16.7% in 2005). This is an indication of an increase in tertiary education which is not balanced by job creation.
- A large proportion of females in this age group are not job seekers, especially among attainees of secondary education, and they are not counted in the employment/unemployment ranks. Females go into tertiary education with the objective of seeking jobs, and their unemployment rate is similar to that of males. Females whose secondary education is terminal are not generally job seekers. This explains the low overall unemployment rate among female youth (4.7% in 2001, 6.8% in 2005).

Benchmarking

Combining unemployed males with unemployed females in Jordan will not be revealing since most females are not job seekers, in particular those with secondary education or less. Taking into consideration this trend, benchmarking with OECD countries is relatively valid only for the tertiary level attainees (males & females). For the reference year of 2003, the estimated unemployment among this level in Jordan is around 13.2%, which is close to that in Turkey and Hungary and higher than all other OECD countries.

Participation in continuing education and training

This indicator examines the participation of labor force members in continuing education and training, as well as their investment according to the form and purpose of the learning undertaken. It concentrates on the non-formal job-related learning activities of the labor force.

The importance of lifelong learning for a continuing working life is unquestionable. The technology involved in today's jobs is constantly changing and becoming more complicated, and there is a definite need for staying up-to-date through the various forms of learning and training. There is an ongoing need for on the job training and retraining to increase efficiency, to facilitate mobility between jobs, and to respond quickly to world-wide advances in technology.

In Jordan continuing education and training is conducted in a variety of forms, venues, and levels. It ranges from few-days seminars to few-months courses, from technical vocational workshops to leadership level administration. Some are conducted on site (in-house), some in academic institutions, and some in specialized training institutes. In spite of the many types of training activities there are no records or monitoring systems that make available relevant data, and there is no mechanism to recognize and log these activities in the form of continuing education credits that are used elsewhere in the developed world for certification. This deficiency needs to be remedied according to best practices and world standards.

Chapter D

The Learning Environment and Organization of “Universities”

Chapter D examines the factors that shape the teaching and learning environment and that can therefore have an influence on learning outcomes. The amount and type of instruction time received in a university, the students learning time outside the university, the average class size, and the student-teacher ratios are examined. Chapter D also considers instructors working conditions in terms of their teaching and working times and salaries. Performance of public and private universities is compared, and the policies and practices employed by universities to differentiate among students are examined.

The following indicators are presented:

1. Indicator D1: Total intended instruction time for students in higher education
2. Indicator D2: Class size and ratio of students to teaching staff
3. Indicator D3: Teachers' salaries
4. Indicator D4: Teaching time and teachers' working time

Total intended instruction time for students in higher education

The total instruction time received by students of tertiary education varies from one discipline to another, but is usually standard for certain disciplines. Interaction between teachers and students and among students does not take place in class rooms and laboratories or seminars alone, but it is highly related to the time spent in formal group contact with instructors. This indicator examines the amount of instruction time that students are supposed to receive in their course of study in different colleges. It also discusses the relationship between instruction time and student learning outcomes.

Key results

Chart D1.1. Cumulative number of credit hours for selected majors in different universities.

The table shows the total number of credit hours of instruction a student can expect to receive in different universities.

	Engineering		Social Sciences	Accounting
Michigan State University	130	120	120	120
University of Ottawa	123	106- 134(honor)	90-120	130
American University of Cairo	162	131	120	127
Cairo University	180	146		
American University of Beirut	143*	120	120	120
United Arab Emirates	168	119	132	132
University of Sharjah	142 **	129	129	129
King Fahad University of Petroleum and Minerals	133	124		127
Jordan Universities	162	132	132	132

* plus 36 hours in the freshman year.

** 140-143 credit hours except for architecture where it is 167

highlights of this indicators

The process of teaching and learning is influenced by several factors other than the number of class room hours attended by the student, like the number of course hours in the specialized field of study and the number of general education courses, course content, and scope of coverage of other knowledge and skills such as communication, team work, critical thinking, and self learning.

Benchmarking

The intended instruction hours are comparable to those in different countries except for engineering, which is similar to those in the region and about 25 credit hours more than universities in the USA.

Class size and ratio of students to teaching staff

This indicator examines the ratio of students to teaching staff, the teachers' average working time and average loading, and the breakdown of teachers' time between teaching and other non-teaching duties.

Key results

Chart D2.1. The ratio of students to teaching staff

This chart shows the ratio of students to teaching staff in all universities in Jordan.

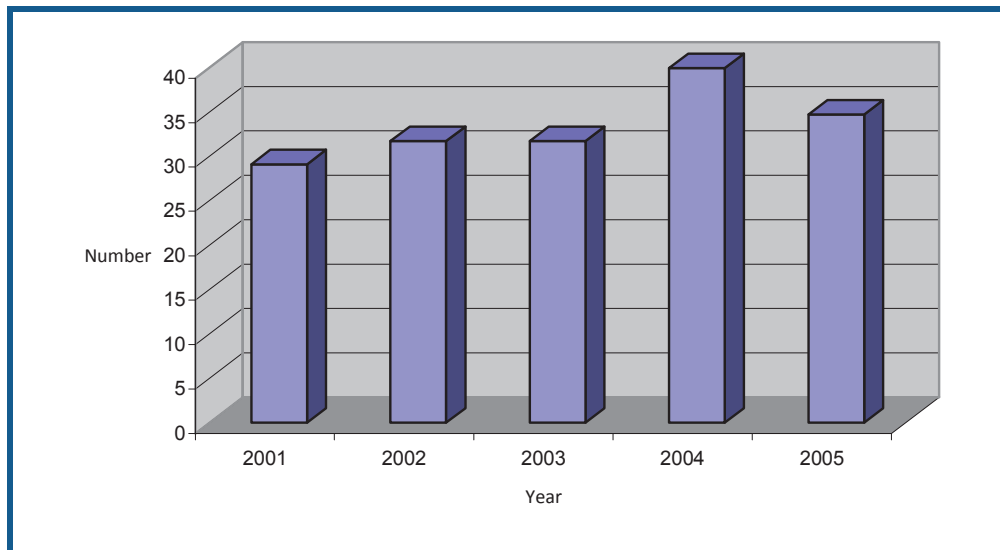
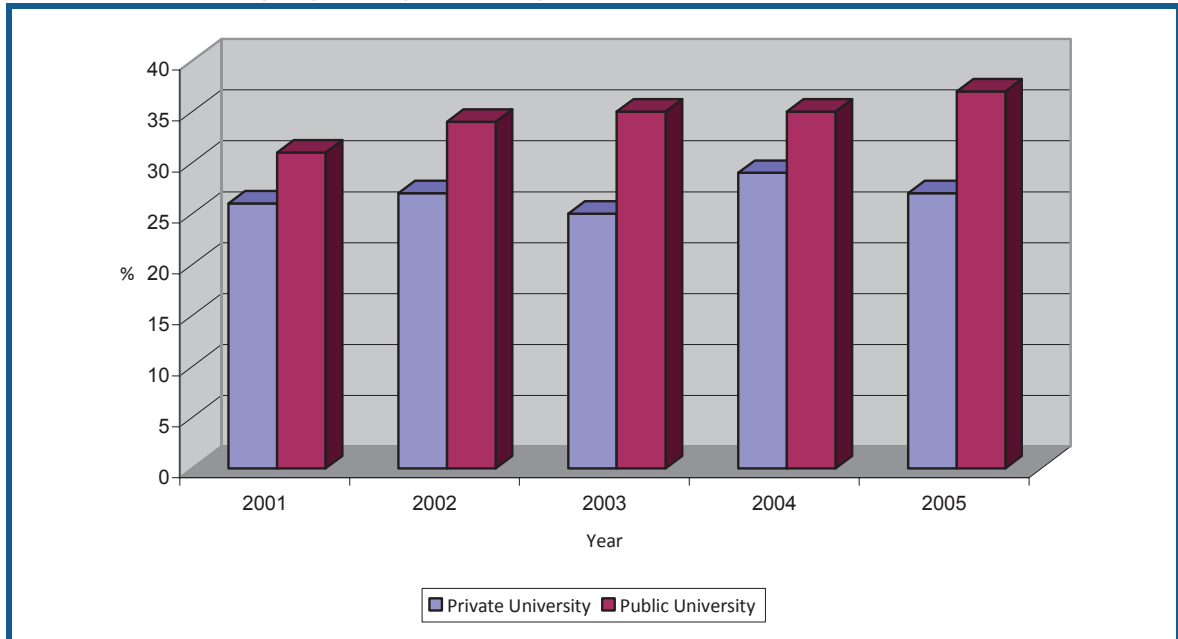


Chart D2.2. The ratio of students to teaching staff in private and public universities

This chart shows the ratio of full time equivalent (FTE) students to FTE teaching staff for the last five years in private and public universities in Jordan.



highlights of this indicators

- The students to teaching staff ratio in Jordan exceeds the international standards.
- Private universities have better students to teaching staff ratio and they are close to the international standards. An action must be taken to attract more faculties with high quality to our higher education system.

Benchmarking

The worldwide standard for the ratio of FTE Students to FTE faculty is 17-20:1.

Teachers' salaries

This indicator presents total gross salaries of faculty members along with other benefits, in cash or in kind, and relates them to the average national per capita income. Together with the average class size (see Indicator D2) and teachers' working time (see Indicator D4), this indicator presents some key measures of the working conditions of teachers. Furthermore, differences in teachers' salaries, along with other factors such as student to staff ratios (see Indicator D2), will provide some of the explanation for differences in expenditure per student (see Indicator B1).

Key results

Chart D3.1. The average yearly gross income for faculty members in Jordanian universities in JD

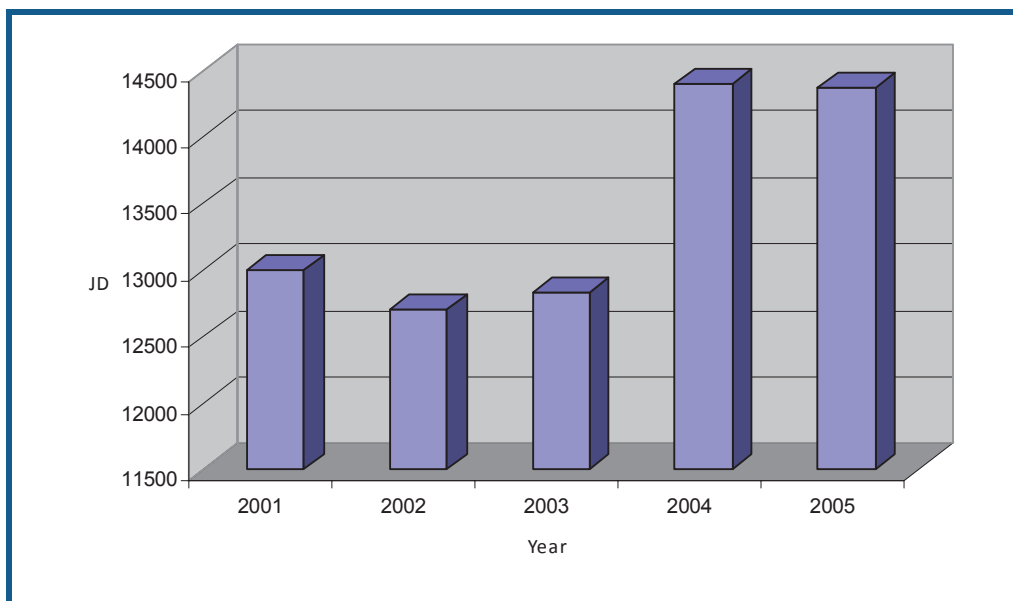
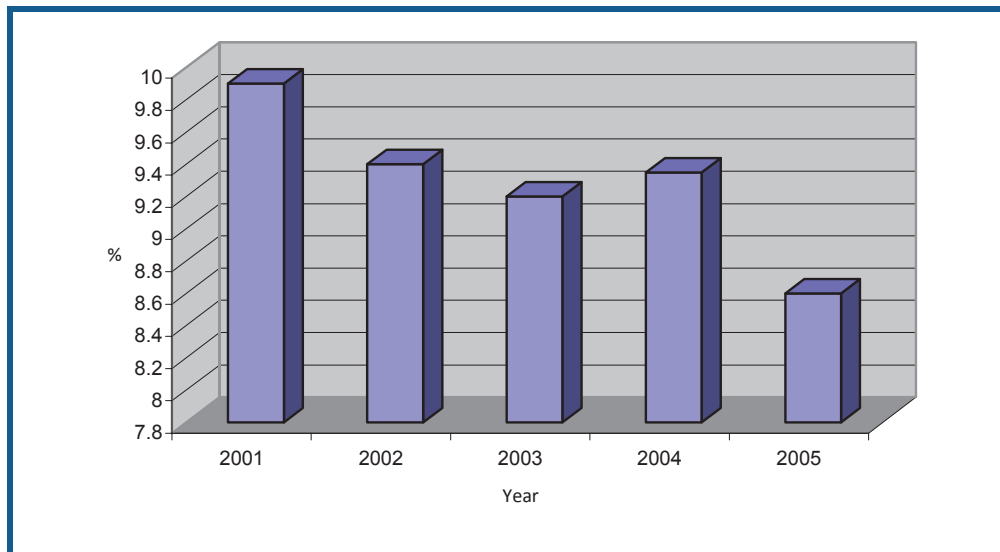


Chart D3.2. Ratio of teachers' salaries to GDP per capita in Jordan



highlights of the indicator

- In addition to the statutory salaries, cash compensations to faculty members include matching contributions to the social security fund and a saving fund amounting to 15% of the salary, a graduated end of service payment that is nominally set aside amounting to 8.3% of the salary and reaching 12.5% at the end of 15 years of service, and growing at the rate of 25% of the annual salary for each additional year of service.
- Salaries of faculty members are set on a rigid scale with essentially no variation between one university and another. Salaries at the top of the scale are on the average 50% higher than starting salaries, indicating a narrow span.
- Scale adjustments require the consent of the government via an amendment of the respective bylaw and they occur once every four or five years. Salaries therefore tend to be steady except for the slow rise due to annual salary adjustments and faculty promotions. When the scale is adjusted, there is a sudden rise in the trend curve. This is evident in the sharp rise in 2004.
- When related to the per capita GDP, the salaries have been declining even when salaries were raised in absolute numbers in 2004.
- There is an overall shortage of quality faculty members throughout the region, and they all compete to attract the better ones through higher salaries and better benefits. This is a serious consideration for policy makers who make decisions on salary adjustments lest we lose our top faculty members to other universities in the region.
- The rigid nature of the salary scale precludes any performance based differentiation between faculty members, except for some allowances given to categories of faculty members whose specialization is rare. Such an allowance cannot be given to individuals.

Teaching time and teachers' working time

This indicator focuses on the statutory working time of faculty members as well as their statutory teaching time. Although working time and teaching time only partly determine the actual workload of faculty members, they do give some valuable insights into differences between countries in what is demanded of faculty members. Together with salaries (see Indicator D3) and student to staff ratios (see Indicator D2), this indicator presents some key measures of working conditions for faculty members.

Key results

No data were available from any university, public or private. The general picture is outlined below, where a distinction is made between statutory and actual work load.

highlights of the indicator

- The statutory working time for faculty members is 40 hours per week for 41 weeks per academic year of nearly nine calendar months. Faculty members have the option of spending their summers engaged in research at the University or at some other location. They can also accept a teaching load in the summer for additional pay.
- The statutory teaching time depends on the rank; it is 15 credit hours per semester for instructors, 12 credit hours per semester for assistant and associate professors, and 9 credit hours for full professors. These loads are reduced for faculty members who hold administrative posts..
- In addition to the statutory teaching time, a faculty member devotes the rest of the statutory work time in preparing and updating of lectures, intellectual activity and research, preparing and grading of examinations, student counseling, and other departmental assignments.
- Some of the teaching load is rendered in the form of laboratories, where actual contact hours with students are logged, and where one credit hour is equal to 2-3 contact hours.
- Faculty members are allowed to take on 6 additional credit hours of teaching within the university or at another university. This requires the consent of the university president. Most universities will pay overtime if the faculty member is asked to carry additional teaching load.
- The statutory working time for non-teaching staff in a university is 40 hours a week throughout the year with the exception of vacation time.
- Data were not provided on the actual teaching time to be related to the statutory time. The availability of such data makes it possible to estimate the utilization index of faculty members which is one of the parameters of the internal efficiency of the institution.