



THE FIELD RESEARCH ON THE READINESS OF FUTURE GENERATIONS TO ACCESS THE KNOWLEDGE SOCIETY: PROCEDURES AND FINDINGS

INTRODUCTION

Field research conducted on pilot basis in four Arab countries (Jordan, the UAE, Morocco and Yemen) aimed to explore students' skills, values and enabling environments. They are the three pillars set by the Second Arab Knowledge Report: as fundamental pillars for the preparation of future generations for the knowledge society. All field surveys have been conducted in cooperation and coordination with the concerned formal bodies in these countries.

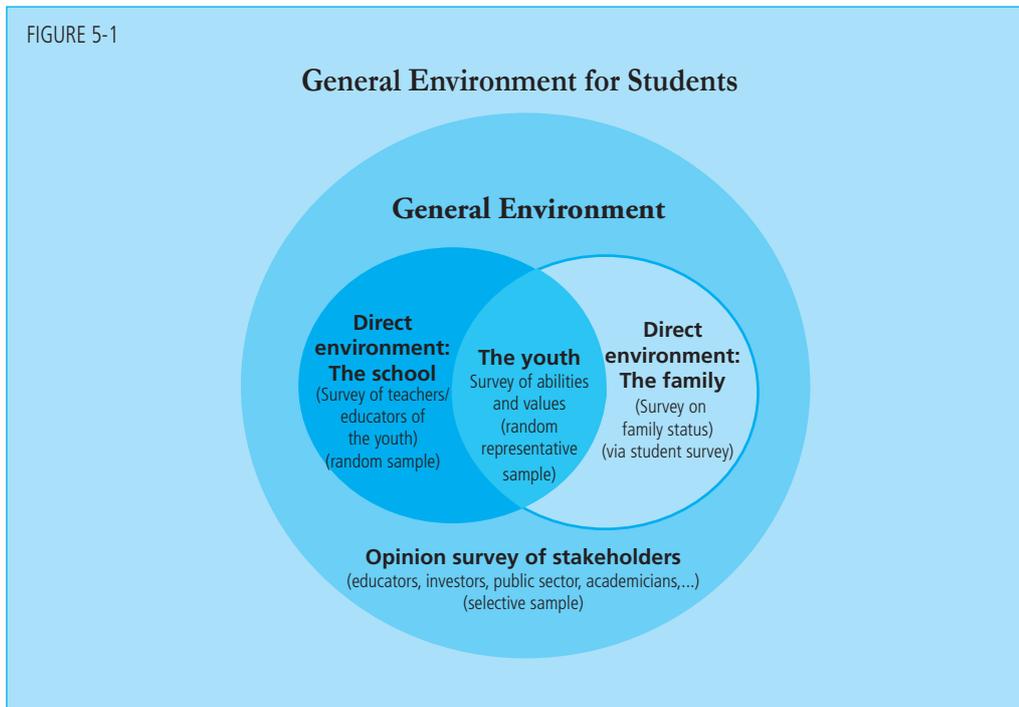
These topics have been approached according to the adopted conceptual

model (see Introductory Chapter) through two main parties:

- **Students**, primarily because they nourish the critical mass required for development of the knowledge society; and
- **Teachers**, as they represent the party directly responsible for the education of the young and the preparation of such critical mass.

In order to provide a broader vision of the issues targeted by research, the surveying process also included groups of intellectuals and experts involved in the preparation of young people, and were

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called upon to participate in workshops in the concerned countries.

This chapter focuses on introducing the findings of the different field surveys. Its content is organised as follows:

- Section I: introduction of methodology for building tools, statistical data processing, selection techniques for the two study samples, and workshop procedures in the case study countries;
- Section II: review of findings starting with students as the focal point of the research followed by teachers. Opinions formulated during workshops with intellectuals appearing in different locations of the analysis for the purpose of comparing viewpoints.

Given the central importance of students' skills and values, we decided to elaborate on each country's results while highlighting the total sample results to determine specific and general trends. As for findings related to the perceptions of students and teachers on enabling environments, we attempt to present total percentages, noting that the details appear in the four case studies.

SECTION I: METHODOLOGIES

Five tools were designed to fulfil the research objectives: three for the student, one for the teacher, and one for experts participating in workshops:

- Skills testing
- Scale of values
- Questionnaire on student enabling environment
- Questionnaire for teachers
- Questionnaire to gather the views of intellectuals during workshops

RESEARCH TOOLS

TEST OF STUDENT SKILLS

THE BASIC PRINCIPLES OF THE TEST DESIGN PROCESS.

This tool aims to evaluate students'

achievements in relation to their skills, thus, the test items are not related to concepts directly linked to educational curricula, but rather to a set of skills linked to daily life and presented in the form of compound positions to measure a 'problem-situation'. Construction of the test items was based on a set of principles and conditions, including:

- Conceptual reference: a concept of skills has been adopted as defined by relevant literature in education sciences and as defined by the theoretical framework of the current research (see Introductory Chapter).
- Item construction: since the main objective of the study relates to the measurement of skills, we have focused on formulating items that place students in front of a compound position that does not allow for an automatic answer as much as it requires thinking and recalling a variety of stored knowledge and capacities. Most of these items consist of:
 - Data: a text, table, graph or an image holding a function related to the field of interests of the target group;
 - Objective: questions or instructions requiring a student to accomplish a specific task or perform an activity reflected in a written product;
 - Tips: explanations of the work rules or conditions that must be taken into account when presenting the answer or the expected product, to be accompanied by the 'objective' when necessary.
- Item content: to achieve the objective of the study, we have taken into account the prerequisite of neutrality in the following aspects:
 - Adoption of 'neutrality of academic specialisation' in content selection, i.e., content should not contain information requiring a specific specialisation (e.g. scientific, literary or technical), given that the test does not measure a particular curriculum and in order not to let items serve a

Five tools were designed to fulfil the research objectives: three for the student, one for the teacher, and one for experts participating in workshops

certain specialisation to the exclusion of the other;

- Adoption of ‘neutrality of national affiliation’ in the selection of test items’ content so as not to be related to what is specific to a certain country to the exclusion of others, ensuring that all students are placed in the same position; and
- Adoption of ‘neutrality of lexicon’ in the selection of terms to be used, adhering to what is common across the Arab region, east and west.

characteristics and requirements of the knowledge society itself, we can induce the cognitive, conative and social features that must distinguish future generations to be qualified to effectively engage in the development and building of the knowledge society. In essence, they are skills related to higher intellectual levels which elevate students from the level of superficial memorisation of knowledge or mechanical application of skills to a higher level focusing on exerting the mind, using cognitive strategies, and expressing their views and attitudes toward themselves and the surrounding environment. These skills include the following:

Three types of skills have been targeted which recent pedagogical approaches agree that these skills are key to accessing the knowledge society

METHODOLOGY ADOPTED IN THE FORMULATION OF TEST ITEMS

The ‘Criterion-Referenced Test’ method has been used. Three types of skills have been targeted which recent pedagogical approaches many agree are key to accessing the knowledge society. Depending on the

- **Cognitive skills:** Related to the acquisition and use of knowledge, including the search for and processing of information, written communication, problem solving, and meaningful use of modern technologies (Table 5-1).

TABLE 5-1		
Cognitive skills		
Skill	Definition of skill and its components	Test Item Description
Searching and processing information	All knowledge, competencies and attitudes recalled by a learner in a situation of searching for and processing information (e.g. searching for relevant information, analysing and linking it, expressing an opinion on it, etc.)	Starting position 1: A drug brochure Starting position 2: A text tackling youth unemployment in Arab countries (written paragraph with a graph and table)
Written communication	All knowledge, competencies and attitudes recalled by a learner to produce a written message in a functional communication position (e.g. understanding of communication topic, choice of words and appropriate style, language integrity, clarity of meaning, etc.)	Starting position: Presentation of a group of environmental scenes Task: Writing banners highlighting threats facing the environment, and people’s roles in reducing them.
Problem solving	All knowledge, competencies and attitudes recalled by a learner to solve a problem relating to reality (e.g. interpreting the problem, analysing its elements and the relationship between them, identifying solution hypotheses, etc.)	Starting position: Presentation of a logical problem Task: Extracting the problem at hand and searching for an appropriate solution by adopting a thinking and searching methodology based on logical assumptions
Meaningful and effective use of modern technologies	All knowledge, competencies and attitudes recalled by a learner to use modern technologies and employ them to serve useful objectives (e.g. identify tools and their functions, determine the goal of using these means, know the ethics of using technologies, etc.)	Starting position: Variety of exercises on the numerous uses of computers and the internet in daily life

TABLE 5-2

Conative skills

Skill	Definition of skill and its components	Test item description
Self-knowledge and self-esteem	All knowledge, competencies and attitudes that a person needs to build a realistic and positive image of himself/herself (e.g. continuous review/evaluation of the self, diagnosis of strengths and weaknesses, self-control, emotions, etc.)	Items whose responses reflect a student's assessment of different dimensions of his/her character. We have adopted this pattern because we aim to find out how a student sees himself/herself, while fully aware that the transmitted image may not be a realistic one.
Promoting the motivation to learn and seek knowledge	All knowledge, competencies and attitudes recalled by a learner to maintain a high level of internal motivation constantly driving him/her towards acquiring knowledge (e.g. identification of real needs, perseverance until reaching the set goal/challenging of difficulties, self attribution.	This skill is indirectly approached through requesting the student to set a plan for a project of his/her choice and to highlight its requirements
Planning for the future	All the knowledge, competencies and attitudes needed by a learner to develop a realistic, executable vision or plan for the future (related to physical, mental and other qualifications), which takes into account the resources and surrounding constraints (e.g. setting realistic future targets, setting priorities, finding out and providing the appropriate means to achieve them, etc.)	

Example items: learning motivation skill	Fully applicable	Applicable to a great extent	Somewhat applicable	Not applicable
I find pleasure in searching for and knowing new information relevant to my studies	1	2	3	4
It does not bother me at all to ask, and I keep trying until I reach knowledge	1	2	3	4
I am well aware that study and learning are the only way to face the future	1	2	3	4

An example of a situation related to information searching and processing skill:

An actual drug prescription leaflet written in Arabic is presented, accompanied by three questions which require reading and understanding the brochure in order to be answered. The first question requires searching for the needed information which is found in different paragraphs of the brochure; the second question requires a simple calculation to determine the maximum allowed dosage; and the third question requires analysing and comparing

information to identify the different cases in which the drug must not be given.

- **Conative skills:** All aspects related to the direction and modification of behaviour, such as self-knowledge and self-esteem, promoting the motivation to learn or seek knowledge, and planning for the future (Table 5-2).
- **Social skills:** All aspects related to interaction with others, such as direct oral communication with others, teamwork, and participation in public life (Table 5-3).

TABLE 5-3

Social skills

Skill	Definition of skill and its components	Item Description
Oral communication	All knowledge, competencies and attitudes recalled by a student to produce a sound oral utterance (in terms of structure, meaning and relation) in a significant communication position (e.g. sound expression of ideas, good listening and proper use of verbal or non-verbal communication methods, acceptance of different opinions, influence and persuasion, etc.)	Despite our awareness of the cognitive competencies required by these skills, we focus in measuring them only on the dimensions relating to behaviour and interaction with others. Given that these skills do not show in reality except in social situations, they are difficult to measure in writing except through statements of the student himself/herself (by telling us how he/she has reacted in certain situations), and thus the research turns from a survey of the student's real skills to his/her view of his/her own skills. It should be taken into account that what a person tells about his skills does not necessarily reflect what they are in reality.
Teamwork	All the knowledge, competencies and attitudes recalled by a student to contribute to productive teamwork to benefit the team as a whole (e.g. identification of roles and tasks, punctuality and responsibilities, management of the conflicts that may arise between members of the group, etc.)	
Participation in public life (civil life)	All the knowledge, competencies and attitudes recalled by a student to engage in public life and contribute to building a civil society (e.g. contribution to voluntary activities, participation in elections, helping others, etc.)	

Example items: Teamwork skills

These items determine the degree of importance of a number of specific factors related to the success of teamwork, including:

It should be noted here that separation among the types of skills is only a methodological separation to control the measurement process. This is because they are, in fact, correlated. As already stated in

	Very important	Somewhat important	Not important	Not important at all
- We succeeded because we did well in distributing tasks among us from the start	1	2	3	4
- We succeeded because we knew each other before	1	2	3	4
- We succeeded because we were of the same gender and age	1	2	3	4

This section tests how the respondent would prioritise certain methods that can be adopted to settle differences within the team, including:

the Introductory Chapter, any cognitive process is not void of a conative load to drive or interact with it, and it is difficult to imagine a cognitive activity without a social context surrounding or involving it.

Order
Valuing all contributions to make every party feel that he/she is treated fairly
Breaking up the team and replacing it with other members
Negotiating for developing a contract governing relations between individuals
Withdrawing from the team

STUDENT VALUES SCALE

Unlike the questions measuring cognitive skills whereby students are expected to submit specific answers reflecting their actual abilities, the conative aspects, including values, require measurement tools involving phrases that have no specific stereotyped responses, therefore not relying on the 'right and wrong' principle. Hence, the scale's items are presented in the form of statements reflecting varying degrees

has been paid in this section to the exploration of values relevant to cognitive, conative and social skills. In building the vocabulary content, we have chosen to run between direct reference to the value and alluding to it through an opposite term, in order to urge the student to be focused as much as possible and prevent his/her answers from turning into mechanic and unaware responses.

The following table shows the distribution of values:

TABLE 5-4

Values distribution		
Cognitive dimension	Conative dimension	Social dimension
Love of knowledge / spirit of creativity and innovation / initiatives / interest in scientific developments / intellectual openness to accept the new / diligence and perseverance / independence of thought and action / scientific modesty / ambition	Sense of dignity / self-confidence / personal balance / love of life / conative and family stability / sense of social valuation (i.e. recognition) / sticking to personal freedom / honesty with the self / self-monitoring	Respect for codes of ethics, customs and traditions / respect for the rules of coexistence (civilisation) / sense of belonging: national and Arab belonging / respect for others: opinion and belief, etc. / tolerance and moderation / spirit of solidarity with others / social modesty / keeping of trust / will of participation in public life

In line with the orientations in the first section of the 'skills testing' tool, attention has been paid in this section to the exploration of values relevant to cognitive, conative and social skills

of importance to which respondents rank the values presented to them. Then the student is asked to determine the degree of similarity between the people described by the speakers and himself/herself. The response options extend from the minimum 'not at all like me' to the maximum 'much like me,' or he/she is provided with a set of opinions to which the students shows his/her degree of approval. We have selected this approach because when a person expresses a value, he/she is in fact talking about what seems valuable and important to him/her; that is, the situation necessarily involves a self-dimension, which is why we note that many of the values embraced by an individual or a group may be considered secondary or worthless to others (Schwartz, in French, 2008).

In line with the orientations in the first section of the 'skills testing' tool, attention

A number of 'universal' values have been added such as democracy, human rights, equality in rights and duties, world peace, food security, justice, freedom of opinion, environmental awareness, ethics, and equality between men and women (or gender equality). This is due to the fact that students are living today in an open world, and just as they need values to guide their behaviour and dealings within their immediate environment, they now need a system of values shared with those in other parts of the world to be a common framework for integration, peaceful coexistence and mutual respect.

Thus, the values scale contains 74 items covering the values mentioned above: the cognitive, conative, social and global ones. In terms of form, we collected items in two separate parts where they were distributed randomly. Also, in building the

Examples of items used in the Scale of Values

	100% Like Me	75% Like Me	50% Like Me	25% Like Me	0% Not Like Me
Certificates are not as important to me as wealth and high standing	1	2	3	4	5
I wish I belonged to a country other than my current one	1	2	3	4	5

	Fully Agree	Agree	Cannot tell	Do not agree	Do not agree at all
The principle of human rights contradicts public interest	1	2	3	4	5
Of the main reasons for failure in school is the lack of trust in one's abilities	1	2	3	4	5

survey's items, we placed some formulas indicating the existence of values and others indicating their absence.

QUESTIONNAIRE ON STUDENT PERCEPTIONS OF ENABLING ENVIRONMENTS

With the outlook of preparing the young for the desired knowledge society, the questionnaire aims to survey students' opinions and perceptions of the characteristics of the enabling environment in which they live, and to what extent it provides them with the intellectual, physical, social, political and other facilities they need. In the questionnaire, we have

focused on the factors that have a direct relationship with the skills to be achieved and the values to be developed. Thus, the items of the questionnaire have been related, as provided for in the conceptual reference of the research, to cognitive enabling, conative enabling, and societal enabling.

As for the content of the questionnaire, we have made sure that they have two basic conditions:

- To be truly linked to the Arab reality; to put under the microscope the cultural, economic, social and political factors and variables distinguishing Arab societies; and
- To relate to factors that are subject to

TABLE 5-5

Examples of major focus for cognitive enabling

Environment	Examples of environment components
Environment providing the necessary infrastructure for accessing knowledge	The spread of education and qualification institutions and their accessibility to the student Availability of essential educational materials Equipping education institutions with information technologies and expanding their use
Environment providing basic education that prepares for lifelong learning	Adoption of active educational methods (e.g. encouraging self-learning, training in self-assessment) Provision of treatment and support programmes for students suffering from learning difficulties Activation of internal motivation to learn (seeking knowledge while believing in its importance)
Environment providing incentives for knowledge-seekers	Assistance in covering the expenses incurred in learning or qualification (e.g. obtaining references or paying registration fees) Granting financial privileges to value learning and acquisition Available support to outstanding students

TABLE 5-6

Examples of major focus for conative enabling

Environment	Environment components
Environment providing health care necessary for forming sound mind	Regular health follow-up in all educational institutions at all stages Clinics at schools Dissemination of health culture (e.g. teaching health education, awareness campaigns, and establishment of health clubs)
Environment providing a sound family setting that helps to build a balanced personality	Stable and balanced family condition Good level of parents' education Continuous family profiling (e.g. continuous follow-up of children's study progress, integrated relationship with school, etc.)
Environment providing psychological and social care	Psychological and social counselling units at educational institutions to help students solve their problems

TABLE 5-7

Examples of major focus for societal enabling

Environment	Environment components
Environment supporting freedoms (of thought, opinion, belief, etc.)	Free choice of intellectual orientations and affiliations Free expression of opinion without fear or pressure Laws and legislation that protect rights-holders
Environment instilling the principle of equal rights and duties	Laws and legislation to deal with cases of breach of duties Assurance of objective considerations in certification, recruitment, promotion, and others
Environment giving a sense of trust / confidence	Honesty and integrity of the media Control and accountability structures

change, because the study does not only provide a descriptive survey of the phenomena, rather it goes beyond that to identify the strengths that should be reinforced as well as weaknesses that should be addressed in a timely and appropriate manner.

In order to ensure a positive response by students to the questionnaire, most questions are of the closed or semi-open type, where they can place a check mark (✓) before the answer that suits them, assign a degree on a scale reflecting the extent of their approval/disapproval of the opinion proposed to them, or note the availability/lack of the described factors and circumstances. This is in addition to some open questions to make room for explanation and commenting for those who wish to do so.

QUESTIONNAIRE ON TEACHERS' PERCEPTIONS ON ENABLING ENVIRONMENTS

The teachers' questionnaire aimed to gather information about teachers' perceptions and opinions about the skills and values of students, and their available enabling conditions to help them prepare the young to access the knowledge society. Also, the questionnaire aimed to explore teachers' attitudes with respect to some modern educational concepts, and detect their various educational practices. This is in order to determine to what extent teachers are aware of the characteristics and requirements of the knowledge society, as well as their self-assessment of their abilities to respond to them.

BASIC PRINCIPLES FOR THE SELECTION OF ITEMS

Items were chosen based on the following principles:

- Principles maintained by modern theories, particularly Constructivism and Cognitivism,²⁵ on the role of the teacher in facilitating the learning process, changes required in his/her practices, and forms of interaction with students.
- Qualities teachers should acquire in the 21st Century to be able to prepare new generations for the knowledge society as defined by exploratory research.

ASPECTS MEASURED IN THE TEACHER'S QUESTIONNAIRE

In line with the objectives of the questionnaire, items were focused on determining the academic, personal and professional identity of the teacher, and identifying his/her different educational practices and relations with other education parties, as well as exploring his/her perceptions towards the teaching

profession and its related matters (e.g. curricula, teaching aids, enabling conditions, etc.). Also, the tool has largely focused on identifying the teacher's opinion and attitudes towards the knowledge society and its requirements in general, and those related to his/her profession in particular. As for the issue of teacher's educational skills, given that they are of a practical nature and cannot be measured objectively except through field observation and direct surveying, we have tried to approach them indirectly through various items reflecting different educational orientations.

RESEARCH SAMPLES

STUDENT SAMPLE

The study targeted 12th grade students (who have completed the 11th grade) in the schools located in five major cities in the four case studies (Amman in Jordan, Abu Dhabi and Dubai in the UAE, Rabat in Morocco, and Sana'a in Yemen). A random stratified sample representative

A random sample representative of the community targeted in the study was selected using the relative distribution method

Testing, modifying, and verifying the tools

After developing the initial version of all tools in consultation with members of the central team, the tools were presented in a workshop to the authors of country case studies to discuss the appropriateness of each item in the questionnaires to the students' and teachers' level of comprehension or experience. It was agreed that the tools would measure the desired level, i.e., the skills level that the students and teachers should have. Moreover, the terms and phrases used were revised to ensure that they could be understood by the target respondents. Other observations were discussed with respect to the testing format and readability of images and figures contained.

Once the final version for the tools was approved (or authenticated), it was subjected to testing during May 2010 in three countries, namely, Jordan, the UAE and Yemen, covering 541 male and female students in the 11th grade. Also, the tools were later tested to a lesser extent in Morocco and reviewed by Moroccan technical specialists, including making sure that the terms used in the tools were suitable to common use in Morocco. The statistical analyses adopted to study various internal links (between items that fall under the same category) and external links (between the constituent groups of the tool), and to verify the authenticity and stability of tools included:

- ✓ Calculation of Alpha Cronbach coefficients ranging from 0.6320 (conative skills), 0.7610 (cognitive skills), and 0.666 (social skills, placed in-between). As for values, Alpha

coefficients reached 0.793, noting that we preferred covering as much as possible of the skills and values with only a paragraph or two (at best) for each skill or value, in order to compress size. This explains to some extent why Alpha Cronbach coefficients were not very high, but given the exploratory nature of the study and its objectives, they can be considered acceptable.

- ✓ Pearson's correlation coefficients were all positive links, and though they varied in strength, they were all statistically significant, revealing the presence of bilateral links among skills themselves, with values themselves on one side, and skills and values on the other. With regard to skills, correlation coefficients ranged between 0.359 (between cognitive and conative skills) and 0.596 (between conative and social skills), while values ranged between 0.384 (conative and social values) and 0.636 (conative and universal values), indicating that they positively affect and are affected by each other.

Accordingly, we can say that the tools maintained an acceptable degree of consistency and stability, which may not be very high, but for a prospective study designed to get a sense of reality away from all forms of generalisation, the results are sufficiently trustworthy. It remains an initial version for the tools we hope to further develop and improve the eudiometric standards of further projects.

TABLE 5-8

Distribution of respondents by country and gender variables**A. Students**

Gender	Jordan	UAE	Morocco	Yemen	Total
Males	855 49.09%	629 45.7%	725 46.1%	860 49.8%	3,069 47.8%
Females	887 50.91%	746 54.34%	849 53.9%	864 50.2%	3346 52.2%
Total	1,742	1,375	1,574	1,724	6,415

B. Teachers

Jordan	UAE	Morocco	Yemen	Total
103 20.4%	138 27.3%	147 29.1%	117 23.2%	505 100%

The sample was limited to students who were actual citizens of the concerned country enrolled in the 12th grade in schools teaching national curricula

of the community targeted in the study was selected using the relative distribution method. This method is useful as it does not require any information on category disparity or the cost of sampling units in different categories. It also leads to a higher degree of reliability in results compared to other methods.

Procedurally, the study relied on databases sent by the Ministries of Education in each country, which contain the names of schools and the number of classrooms and students in schools. The percentages of targeted categories have been specified in the current study, including: type of school, specialisation, and gender. The field research included 6,415 students, distributed as illustrated in table 5-8.

The samples of countries participating in the research share a common feature, i.e. the number of females exceeded the number of males with a difference ranging between approximately 1% in Jordan and 8.9 % in the UAE in favour of females.

TEACHER SAMPLE

The questionnaire targeted a sample of secondary school teachers from various disciplines from the same schools and for the same students who were selected to

participate in the students' questionnaire. This is in order to cover most disciplines in the school with an emphasis on following a random selection of teachers within each specialty.

LIMITS OF THE STUDY

In terms of sample selection, the research samples were selected from five major cities in four Arab countries (see the Methodology in the Introductory Chapter).²⁶ The sample was limited to students who were actual citizens of the concerned country enrolled in the 12th grade in schools teaching national curricula. Accordingly, the results are only valid with respect to the sample community and it does not accept generalisation to all Arab countries nor to the concerned countries themselves.

With regard to measuring conative and social skills and values: Contrary to the cognitive skills that can be measured by the students' answers through adopting the cognitive testing method, conative and social skills need direct observation of the student's behaviour in order to identify the skills he/she actually owns and practices. But since this process requires huge material resources and logistic procedures (a qualitative study based on observation and individual discussions, which require

time and material and human resources), the current research has relied on the questionnaire method. Therefore, the information provided by students reflect what they declare to exist; statements which may be driven by a tendency of 'social desirability,' and thus may or may not agree with reality. This requires dealing with results as general trends needing further confirmation.

In terms of the eudiometric characteristics of educational measurement: The classical theory of testing has been adopted, particularly in measuring the difficulty index. Although this approach enables examining the difficulty level of the targeted skill and helps in selecting items of homogeneous difficulty, the resulting index remains subject to the performance level of the sample, and therefore may vary from one group to another. On the other hand, consistency coefficients ranging between 0.632 and 0.793 should be appraised with caution to avoid generalising results to all countries. Here, we indicate that the weakness of Cronbach coefficients in previous studies has not prevented the adoption and application of tools and even generalisation of their results, such as the Schwartz Human Values Scale (Schwartz, in French, 2006), (which ranged between 0.47 and 0.80 with an average of 0.68), and the European Social Survey (where Cronbach coefficients ranged between 0.36 and 0.70 with an average of 0.56).

Given that the research targets the youth in their final year of secondary school which is a multidisciplinary group, emphasis has been placed on exploring a range of skills that apply to several fields. Thus we have tried as much as possible to neutralise the contents that address a certain specialisation to the exclusion of others. This does not mean that we have succeeded completely in doing so. To illustrate, the skill of written communication, for example, gives preference to students of literary disciplines, while the skill of information processing comes in favour of students of scientific disciplines, whereas the skill of using technology is in line

with students specialising in information and technology. But as long as the benefit is distributed among various disciplines, the impact of specialisation will not be decisive for any particular one of them.

SECTION II: DISPLAY OF RESEARCH RESULTS

In the following, we will review the key conclusions reached in the field research. Due to the absence of previous Arab studies dealing with the same dimensions that could be used as a reference point for comparing and judging the validity of research results, we will try to elaborate such results by focusing on three different points of reference:

- Theoretical Reference: Referring to literature and studies concerned with education in the context of the knowledge society;
- Research Reference: Referring, as possible, to international studies which Arab countries participated in. It should be noted that different objectives and methodologies require us to act with great caution so as not to fall into inaccurate comparisons or interpretations; and
- Contextual Reference: Referring to workshops and case studies of the participating countries that provide a description of the educational reality and its surrounding economic, social and cultural conditions.

The statistical measures we rely upon in reading results are represented in the following:

- For the descriptive analysis of skills and values, the arithmetic mean is used as a measure of central tendency indicating the general orientation of the group. The standard deviation is also used as a measure of variation indicating the extent of homogeneity or heterogeneity of the group, along with maximum scores as an indicator of variation.
- For the distribution of students on the readiness scale, we have adopted

Given that the research targets the youth in their final year of secondary school which is a multidisciplinary group, emphasis has been placed on exploring a range of skills that apply to several fields

percentages for the students in each degree of this scale, noting that the scale is built on the basis of the expected range of performance for each skill (e.g. from 0 to 25 for each skill). It is divided into 4 equal categories reflecting 4 levels of gradual performance towards acquiring the feature of readiness to access the knowledge society:

Under 25% of the total score	[25% - 50% [of the total score	[50% - 75%[of the total score	[75% and above of the total score
Not ready	In the beginning	In the process	Ready

For comparison between females and males, we adopt the 'T Student Test' for two independent groups. This is a statistical test comparing the average scores obtained by the two groups (a group of male students and another of female students) to determine the extent of significant differences between them.

For comparison between the scores of skills among themselves, and values among themselves, the Analysis of Variance (ANOVA) is used. This is a statistical test enabling comparison between more than two averages to ascertain the significant differences between them.

For analysis of the impact of environmental factors on skills and values, we adopt the Regression Analysis, a statistical analysis method enabling the selection of variables with denotative influence and estimation of each variable's weight.

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STUDY OF STUDENTS' SKILLS

COGNITIVE SKILLS

COLLECTIVE COGNITIVE SKILLS

Averages recorded in the level of collective cognitive skills ranged between 27.72 and 36.33, with an overall average of 32.67. This reveals a poor level of cognitive skill for the participating students in the four concerned countries alike. If we consider that the score 50 of 100 is the minimum limit to acknowledge the existence of an acceptable level of cognitive skills, we note that the overall average is below that by about 17 degrees, taking into account that only 8.2% of the total students were able to reach the medium score of 50 points or higher. This is a troubling result because the students' non-acquisition at the end of secondary school of a minimum of cognitive skills necessary to continue learning is a shortcoming that threatens the 'security of knowledge' for these countries and prevents their youth from engaging and participating in the knowledge society.

DETAILED COGNITIVE SKILLS

Searching and processing information skill

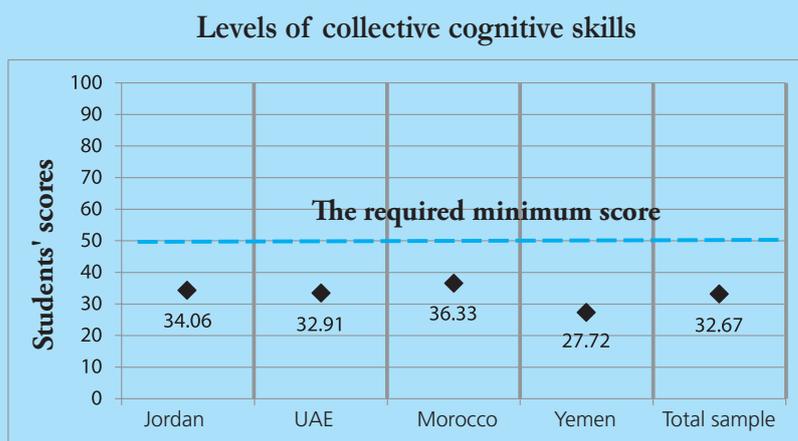
Averages for the participating countries ranged between 9.37 in Yemen and 10.53 in Morocco, with an overall average of 9.88

TABLE 5-9

Descriptive measures for collective cognitive skills (Total score ranging from 0 to 100)

	Average (Arithmetic Mean of 100)	Standard Deviation	Minimum Score	Maximum Score
Jordan	34.06	12.02	1.19	72.94
UAE	32.91	11.54	3.61	72.45
Morocco	36.33	10.86	0	71
Yemen	27.72	10.16	3.57	64.49
Total Sample	32.67	11.61	0	72.94

FIGURE 5-2



out of 25, which indicates a significant weakness in the skill of searching for and processing information in view of the vast majority of the tested students who failed to reach the medium score, i.e. 12.5 of 25. In fact, intellectuals and experts concerned with educational affairs expected this result. They unanimously agreed during the national workshops on the importance of the skill of searching for and processing information, at the same time admitting, with the exception of participants in the Moroccan workshop, that most students currently lack this skill.

This result poses concern, especially if viewed from the perspective of the International Adult Literacy Survey IALS²⁷ (1997) issued by the Organisation for Economic Cooperation and Development), which stresses the importance of ‘document literacy’ and places it in the third level (of five

levels of performance), considering it as the minimum level required for the knowledge economy. Plainly, the skill of information processing, with all that it involves of the student’s ability to search for specific information, understand its meaning, identify relationships therein, place it in its contexts, and invest it to provide specific responses, is one of the keys to acquiring knowledge and continuing life-long learning. Therefore, we find international attention to this dimension. Also, the Programme for International Student Assessment (PISA), in its last session of 2009, paid special attention to it (see Chapter 2). The findings reveal the significant deficiency of the participating Arab countries, which have failed to reach the international average and actually appear in the lower ranks. This correlates with the results of the current study despite differences in methodology.

The findings reveal the significant deficiency of the participating Arab countries, which have failed to reach the international average and actually appear in the lower ranks

TABLE 5-10

Descriptive measures for searching and processing information skill
(Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	10.00	3.59	0	20.24
UAE	9.65	3.71	0	20.24
Morocco	10.53	3.58	0	19.05
Yemen	9.37	3.35	0	20.24
Total Sample	9.88	3.58	0	20.24

The averages of Dubai, Jordan, Tunisia and Qatar in the PISA study came below the international averages in all target areas

The averages of Dubai, Jordan, Tunisia and Qatar in the PISA study came below the international averages in all target areas (e.g. understanding written information, identifying and extracting information, integration and interpretation, thinking and evaluation, and connected and disconnected texts). See Chapter 2 of the General Report.

Written communication skill

The average of the total samples for the

four case countries did not exceed 5.12, revealing a major weakness in writing skills. This is surprising for at least two reasons. First, the required activity was relatively simple, as it was not a rhetorical literature text or an analytical article, but it was mere expression in limited and separate sentences on some ideas on a common subject, i.e. the environment. Second, this skill is important for the acquisition, production and communication of knowledge. To explain, 'prose literacy' is not less important than the

FIGURE 5-3

Views of participants in workshops on the status of skills in the case study countries

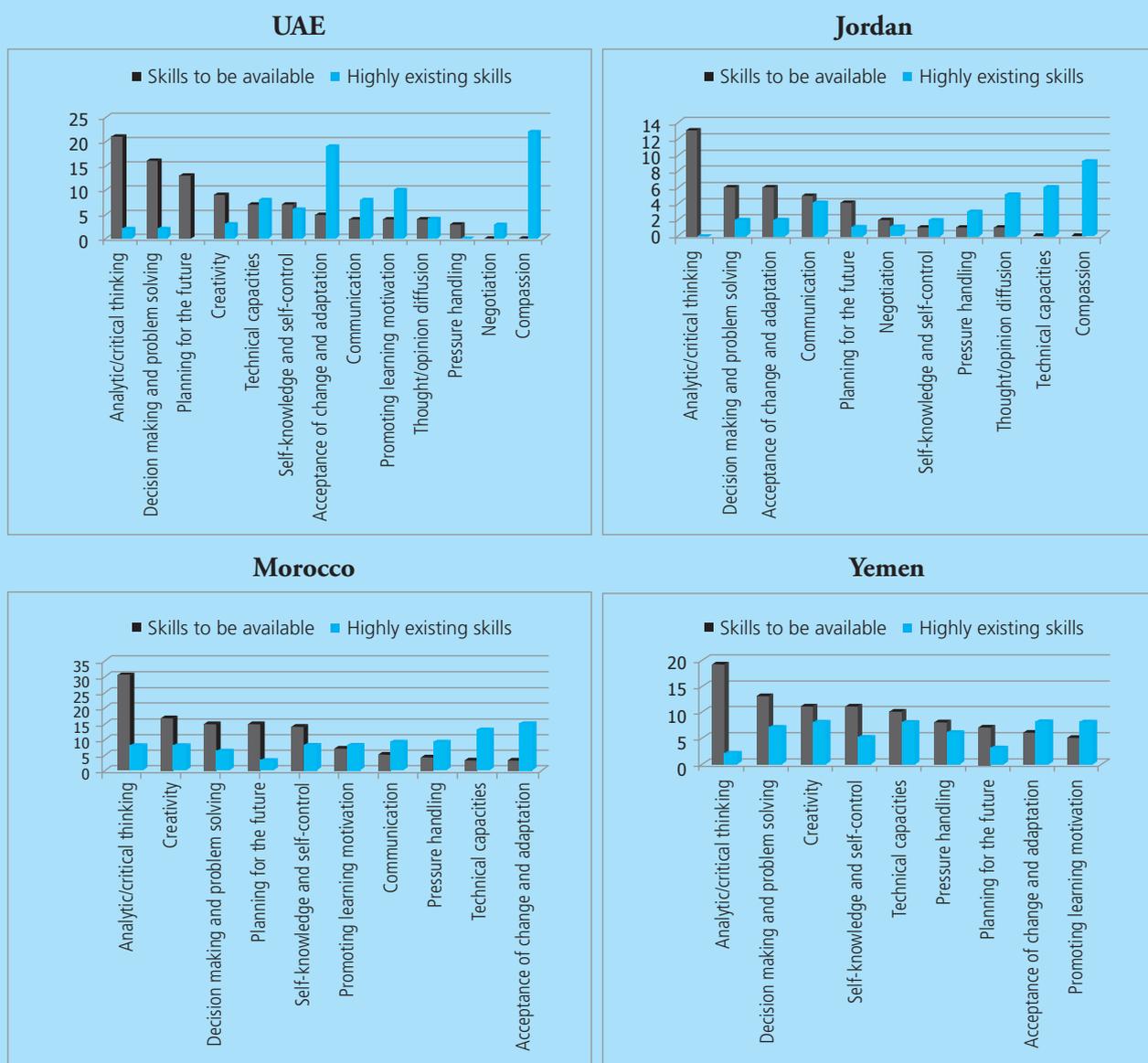


TABLE 5-11

Descriptive measures for written communication skill
(Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	5.38	6.34	0	25
UAE	5	5.39	0	25
Morocco	5.29	4.84	0	25
Yemen	4.79	5.11	0	25
Total Sample	5.12	5.47	0	25

skill of reading and processing it; rather, it may even exceed it in importance if viewed from the perspective of its importance in facilitating the process of communication with others. That is, without having a minimum level of language and ability to use and employ it in communication situations, one will not be able to communicate one's purposes effectively.

In this context, it should be noted that this skill was not highlighted in the workshops held with the academic experts as part of the skills required for the knowledge society, with the exception of Moroccan experts who have classified it as among the skills possessed by students, which indicates the existence of a gap between what is expected by those experts and reality.

Problem solving skill

The status of the problem solving skill

does not differ from its predecessors. That is, results revealed the low ability of participating students to deal with situations that involve a problem derived from everyday life. The averages ranged between 5.89 in Yemen and 8.09 in Morocco, and the overall average did not exceed 6.66 of 25, which confirms the presence of difficulties among students in understanding the dimensions of a problem, performing simple mathematical operations, and applying logical thinking in the possible solutions and choosing the most suitable of them to the situation. This result reminds us of the findings reached by another research conducted in 1994. Despite the passage of more than a decade and a half on that research, it seems that the situation has not differed much. That research, analysing the methods of teaching sciences in eleven Arab countries selected randomly, revealed that: "They focus on the theoretical aspects of sciences and neglect

The status of the problem solving skill does not differ from its predecessors. That is, results revealed the low ability of participating students to deal with situations that involve a problem derived from everyday life

TABLE 5-12

Descriptive measures for the problem solving skill
(Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	6.56	4.01	0	22.22
UAE	6.09	3.81	0	22.22
Morocco	8.09	4.72	0	25
Yemen	5.89	3.61	0	19.44
Total Sample	6.66	4.15	0	25

the application of sciences in unusual and everyday circumstances, and do not seek to develop the students' ability to use the skills of inquiry, problem-solving and thinking."²⁸

With respect to the experts in the countries surveyed in the study, they emphasised the critical importance of problem solving skills, but did not acknowledge its possession by students. Rather, the participants in the UAE and Morocco workshops classified it as one of the skills least possessed by students, attributing this to the educational system and methods of familial and societal upbringing.

With respect to the experts in the countries surveyed in the study, they emphasised the critical importance of problem solving skills, but did not acknowledge its possession by students

Using technology skill

The total sample average did not exceed a score of 11, with some disparities among the participating countries. This result was below the desired level for this skill (61.2% of the students received marks below 12.5 of 25), in spite of the rapid spread of technologies and their growing role in disseminating knowledge and facilitating access to it.

Some surveys (ALECSO, 2003) have indicated that internet usage by the age group (14-19) is almost exclusively for entertainment or communication (e.g. social networks) and that the use of the internet for the purpose of research, capacity development and facilitation of business remains very limited, despite the disparities between countries in the level of accessibility (Hafeez, Abdul-Wahhab, background paper for the report).

ANALYSIS OF DIFFERENCES BETWEEN THE AVERAGE PERFORMANCES IN COGNITIVE SKILLS

According to the descriptive criteria mentioned earlier, we note a discrepancy between the surveyed cognitive skills as shown in Figure 5-4.

The statistical analysis proved the existence of significant differences between overall averages in the four skills. Though they share the feature of weakness, they differ in degree with respect to the pooled sample or for each country separately. On this basis, these skills can be arranged according to students' possession of the skill, as follows: (I) the skill of using technology, (II) the skill of searching for and processing information, (III) the skill of problem solving, and (IV) the skill of written communication. This does not seem surprising as there is a growing demand by the young to use modern technologies unlike the writing skill, which is now threatened due to the proliferation of communication methods and codes that do not require possessing language or being able to compose and generate it.

READINESS OF STUDENTS IN TERMS OF COGNITIVE SKILLS

Collective cognitive skills

According to the readiness measure adopted in this research, almost two-thirds of the sample was concentrated at the early

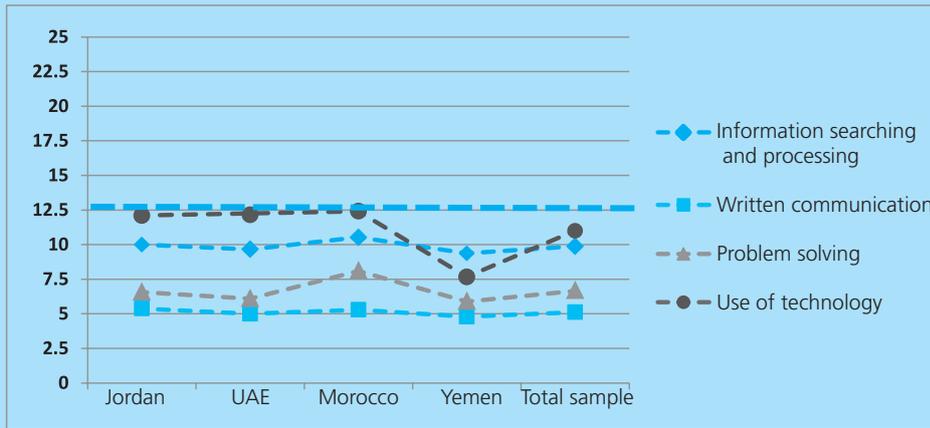
TABLE 5-13

Descriptive measures for the skill of using technology (Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	12.10	3.89	0	21.72
UAE	12.15	3.92	0	22.13
Morocco	12.41	3.62	0	20.9
Yemen	7.67	3.71	0	20.28
Total Sample	11.00	4.29	0	22.13

FIGURE 5-4

Comparison of cognitive skills in the participating countries



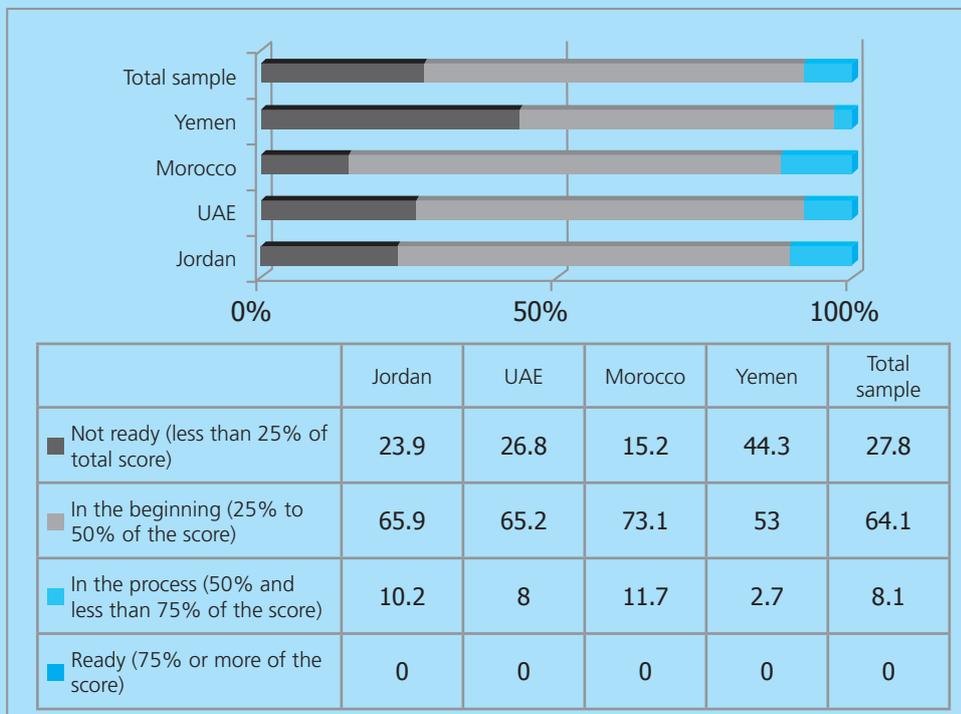
stage of readiness, while none of the tested students reached the level of full readiness in cognitive skills. We also noted that more than one quarter of the sample was not ready at all. This means that the components of knowledge required to access the knowledge society are not possessed by the vast majority of students (91.9 %).

This result reminds us of the findings of the international assessments, such as TIMSS 2007, wherein a very limited percentage of 8th grade students were able to reach an advanced level of performance (science: 6% in Dubai, 5% in Jordan and 0% in Morocco; and mathematics: 3% in Dubai, 1% in Jordan and 0% in Morocco).

In mathematics, 0% of Arab students reached an advanced level of achievement compared to 7% of students worldwide

FIGURE 5-5

Levels of cognitive readiness in the participating countries (%)



In this respect, the results showed that 1% of Arab students in the 8th grade reached an advanced level of achievement compared to 6% of students worldwide. In mathematics, 0% of Arab students reached an advanced level of achievement compared to 7% of students worldwide. This indicates that the Arab educational systems could not produce students (after eight years of involvement in school education) able to master the scientific and mathematical skills that would make them able to compete with their colleagues in the world (see Chapter 2 of the General Report.)

process of', with a very small minority in the category of 'ready'.

For the two skills of written communication and problem solving, the majority were concentrated in the bottom two categories ('not ready' and 'in the beginning' of acquiring readiness) against two small minorities in the top two categories ('in the process' and 'ready').

Overall, it can be said that the responding students are still far behind the desired level of readiness; most of them did not prove that they possess the basic cognitive skills to the extent that prepares them to respond to the requirements of the knowledge society and participate effectively therein. It should be noted that the issue of poor skills is not found in the Arab region alone, as previous reports of UNESCO show it is a problem in developing and developed countries with varying degrees. These reports also confirmed that students' lack of necessary knowledge and skills would prevent them from playing their roles effectively in the modern world (UNESCO, 2003). The underlying reasons of this problem are often attributable to deficiencies in current educational curricula which are

It should be noted that the issue of poor skills is not found in the Arab region alone, as previous reports of UNESCO show it is a problem in developing and developed countries with varying degrees

Detailed cognitive skills

For an accurate diagnosis of weaknesses, we looked for the levels of readiness of each cognitive skill separately. We found distributions that did not differ much from the previous distribution based on the overall result, but with the emergence of two features:

For the two skills of processing information and using technology, the majority were concentrated in the two categories 'in the beginning' and 'in the

TABLE 5-14

Levels of readiness for the information processing skill (%)

	Not ready	In the beginning	In the process	Ready
Jordan	16.6	58.3	24.5	0.6
UAE	20.8	56.0	22.8	0.4
Morocco	13.0	55.5	31.0	0.5
Yemen	20.4	61.5	17.8	0.3
Total Sample	17.6	58.0	23.9	0.5

TABLE 5-15

Levels of readiness for the skill of using technology (%)

	Not ready	In the beginning	In the process	Ready
Jordan	7.6	42.8	46.2	3.4
UAE	7.6	44.1	44.3	4.0
Morocco	4.3	46.9	44.5	4.3
Yemen	36.9	51.9	10.9	0.3
Total Sample	14.7	46.5	35.9	2.9

TABLE 5-16

Levels of readiness for the written communication skill (%)

	Not ready	In the beginning	In the process	Ready
Jordan	65.3	19.5	9.7	5.5
UAE	69.4	19.5	8.3	2.8
Morocco	62.8	27.4	9.0	0.8
Yemen	68.3	22.0	7.7	2.0
Total Sample	66.4	22.1	8.7	2.8

TABLE 5-17

Levels of readiness for the problem solving skill (%)

	Not ready	In the beginning	In the process	Ready
Jordan	56.1	36.5	7.2	0.2
UAE	60.5	34.5	4.7	0.3
Morocco	44.7	38.9	12.5	3.9
Yemen	63.9	32.0	3.9	0.2
Total Sample	56.4	35.4	7.1	1.1

based on rote learning and memorisation, known as ‘banking education’, as well as the backwardness of assessment systems encouraging such curricula. This leads to the formation of the so-called ‘mechanical mind’. Perhaps the most important reason as mentioned is the absence of national projects for a methodological upbringing to achieve cognitive mastery. This is either due to the lack of material resources to implement these projects, or the lack of comprehension of the urgent need for them when resources are available. Thus, there is no serious determination to accomplish these projects in both cases.

CONATIVE SKILLS

COLLECTIVE CONATIVE SKILLS

The average scores of collective conative skills range between 37.33 (Morocco) and 43.17 (Jordan), with an overall average of 40.41, a score exceeding the medium level (37.5 of 75) by more than two points. This indicates that students possess a minimum level of the targeted conative skills, unlike the case with respect to cognitive skills. Although this result does not reach the desired maximum level, it remains positive as it indicates a degree of psychological

Perhaps the most important reason as mentioned is the absence of national projects for a methodological upbringing to achieve cognitive mastery

TABLE 5-18

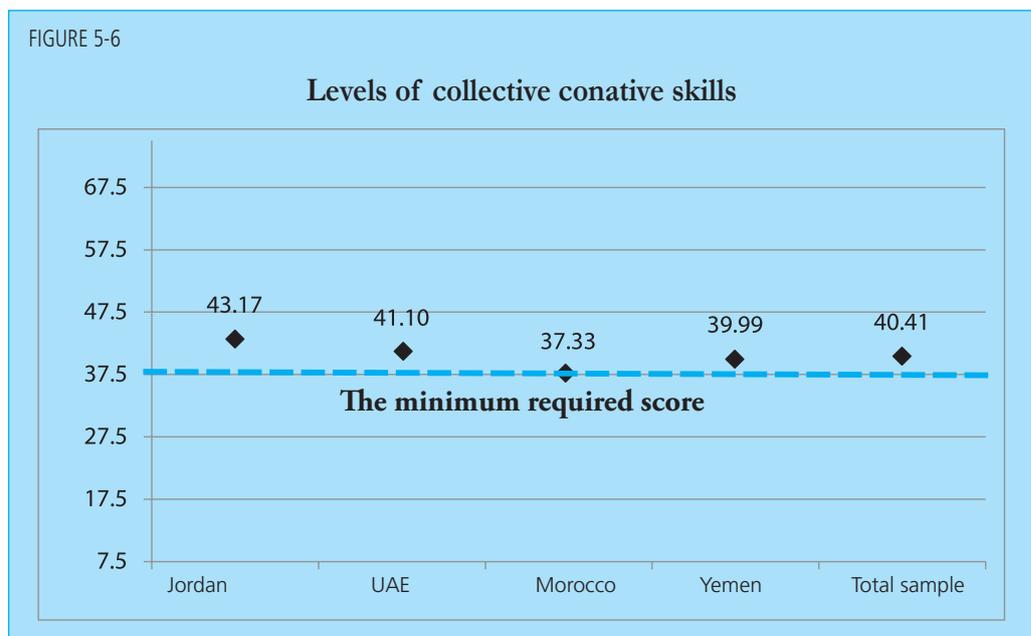
Descriptive measures for collective conative skills

(Total score ranging from 0 to 75)

	Average (Arithmetic Mean of 75)	Standard Deviation	Minimum Score	Maximum Score
Jordan	43.17	11.45	0	69.94
UAE	41.10	13.6	0	66.77
Morocco	37.33	16.8	0	66.27
Yemen	39.99	13.68	0	63.10
Total Sample	40.41	14.16	0	69.94

In this context, psychological studies have shown that the age group 12-18 is characterised as being a stage of conflict between dependency imposed by the remnants of childhood and independency promised by adulthood

FIGURE 5-6



and personal readiness, which can be the base for building a character respecting itself and capable of learning, especially when talking about an age group still passing through adolescence and thus has not yet completed its self-identity features. In this context, psychological studies have shown that the age group 12-18 is characterised as being a stage of conflict between dependency imposed by the remnants of childhood and independency promised by adulthood. Accordingly, the adolescent experiences a state of double rejection: (a) his/her rejection of the image of the 'child' attributed to him/her by the older age group, and (b) the rejection by the latter group of the image of the 'adult' which he/she is trying to impose on them. This leads in many cases to internal tensions (psychological conflicts) and

external tensions (conflicts with others) which might reflect negatively on his/her psychological and conative balance.

DETAILED CONATIVE SKILLS

Self-knowledge and self-esteem skills

We note that the students' averages for self-knowledge and self-esteem are almost equal across the board at about 20 points, thus approaching the maximum score of 25. This indicates a high degree of self-confidence and a positive perception towards self-capacity. However, it remains vital to verify the objectivity and truthfulness of students' answers to make sure that the depicted image conforms to reality, and that this confidence is not a kind of self-favouritism. In general, it

TABLE 5-19

Descriptive measures for the skill of self-knowledge and self-esteem
(Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	20.71	2.93	2.68	25
UAE	20.73	2.91	3.57	25
Morocco	20.61	2.89	2.68	25
Yemen	20.42	3.27	0.89	25
Total Sample	20.61	3.02	0.89	25

seems that this tendency towards ‘self-esteem’ is a widespread characteristic among Arab students. A TIMSS study revealed that Arab students do not suffer from a lack of self-confidence, nor from a lack of positive attitudes towards science and mathematics; rather, they surpass their counterparts worldwide (the percentage of Arab students’ high confidence was 67% in mathematics versus 43% globally, and 73% in science versus 65% globally). However, these indicators remain the product of questionnaires asking about points of view, which, as acknowledged by those who have conducted the TIMSS study, do not enable accurate judging of the success of education reform programmes. This is because the culture of questionnaires is still unfamiliar to the Arab student. If these results were realistic, the results of Arab students’ achievement would have the highest level of conformity with the quality of their attitudes and self-confidence.

According to the education-related experts belonging to the surveyed countries, it seems that the skill of self-knowledge and self-esteem does not represent an essential skill for accessing the knowledge society. None of them referred to it other than the Moroccan intellectuals who considered it among the students’ weakest skills. Once again, there rises a contradiction between the skills possessed by students and those expected by experts familiar with the subject. Perhaps this emphasises the existence of a gap making the older

age group unable to understand the capabilities and attitudes stored by the young, and, consequently, unable to predict the actions they may take.

Skill of promoting learning motivation

The averages of students’ skill of promoting learning motivation in the four case studies range between 18.58 and 19.24, with an overall average of 18.86. Students combine self-esteem with an interest in learning and accessing knowledge, which is a very important element consensually agreed by specialists to have a positive impact on the continuity of educational efforts and success. However, we note that this skill was not strongly present in the minds of educational experts participating in the national workshops. With the exception of UAE experts who strongly recognised that students possess this skill, none of the others referred to it at all.

Skill of planning for the future

The average of the total sample for the skill of planning for the future did not reach 5 degrees, with a large disparity among students. During workshops held in the participating countries, experts affirmed that this skill was only found to a very weak degree in students. This can be ascribed to several reasons including:

- The phase of adolescence experienced by the sample students and its distinct psychological state of conflict between

According to the education-related experts belonging to the surveyed countries, it seems that the skill of self-knowledge and self-esteem does not represent an essential skill for accessing the knowledge society

TABLE 5-20

Descriptive measures for the skill of promoting learning motivation (Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	19.24	3.05	2.08	25
UAE	18.82	3.04	2.08	25
Morocco	18.73	3.33	1.39	25
Yemen	18.58	3.22	1.39	25
Total	18.86	3.17	1.39	25

Whatever the reason is, the ability to overcome the present and envision and prepare for the future is not inborn but rather acquired through interactions with the environment

the desire for independence and the state of moral and financial dependency to the family, leads to a lack of clarity of vision;

- Educational stage in which students are enrolled, i.e. late secondary school; this may be a strong deterrent to thinking about the future which often depends on the results of the general secondary school examination;
- School and university counselling or advisory systems that link the fate of a student to the score he/she achieves in the exam, and disregards his/her real tendencies and aptitudes, thus closing the prospects of choice and free planning for the future; and
- Upbringing methods prevailing in the region, which are exaggerated through coddling children, making choices for them and planning for their future. An analytical study focusing on several Arab countries stated: “The upbringing methods followed by the majority of Arab families have a negative impact on the growth of independence, self-confidence and social competence, and accustom the child to submission and evasion of responsibility, and thus lead to increased negativity and poor decision-making skills not only in behaviour, but also in the way of thinking.”²⁹

Whatever the reason is, the ability to overcome the present and envision and prepare for the future is not inborn but rather acquired through interactions with

the environment. This ability is also affected by the prevailing culture in society. There is a growing need for this ability more than ever due to the current knowledge explosion as well as rapid intellectual, social and cultural changes. Hence, future generations must acquire the ability to anticipate these changes and plan to address them. It is a prerequisite to, “prepare men and women to possess fertile thinking, recall different alternatives, weigh and judge them, and explain consequences.”³⁰

ANALYSIS OF DIFFERENCES BETWEEN AVERAGE PERFORMANCE SCORES IN CONATIVE SKILLS

Concerning the descriptive measures, we observe a discrepancy between the conative skills studied, especially between the skills of self-esteem and motivation and the skill of planning for the future. This is shown clearly in Figure 5-7.

The statistical analysis has confirmed the significance of these differences, which is applicable to all countries participating in the research. If we assume that this result is true, we find it carrying two faces: a positive face represented in the students’ level of confidence in themselves and their abilities and their level of motivation to seek and update knowledge; and a negative face in the absence of what is called in literature as ‘Savoir-devenir’ (knowledge for the future), which is no less important in

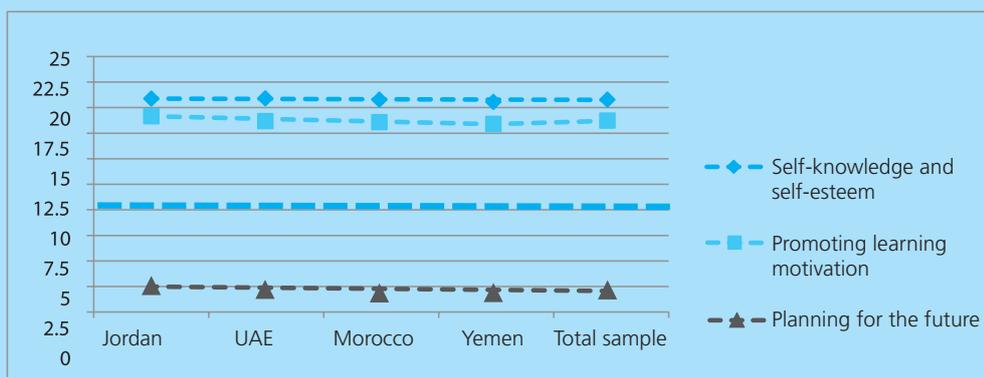
TABLE 5-21

Descriptive measures for the skill of planning for the future (Total score ranging from 0 to 25)

	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	5.03	4.03	0	25
UAE	4.72	4.38	0	25
Morocco	4.41	3.65	0	17.86
Yemen	4.48	3.62	0	25
Total Sample	4.66	3.92	0	25

FIGURE 5-7

Results of conative skills in the participating countries



the preparation of an individual than all other fields of knowledge related to action (Savoir-faire) and trends and behaviour (Savoir-être).

THE READINESS OF STUDENTS IN TERMS OF CONATIVE SKILLS

Collective conative skills

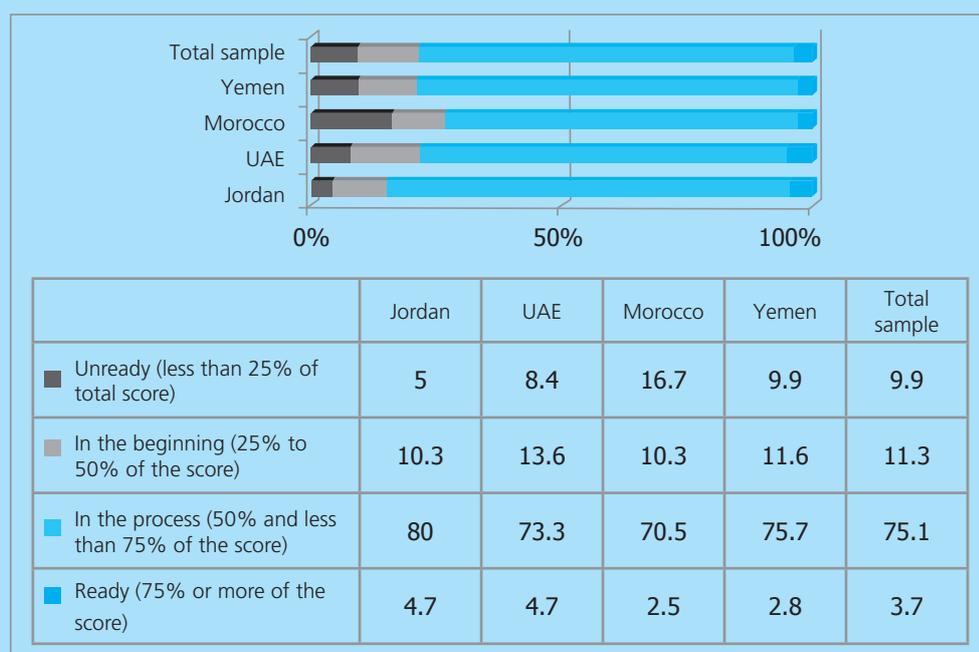
With regard to collective conative skills,

students are distributed on the scale of readiness in greatly varying degrees. While about two-thirds of the sample is concentrated in the 'in process' category, we find two small groups at both ends of the scale; a small group in the 'not ready' category and an even smaller one in the 'ready' category where the sample is qualified to access the knowledge society. Figure (5-8) reveals the size of discrepancy between the different categories on the scale:

Concerning the descriptive measures, we observe a discrepancy between the conative skills studied, especially between the skills of self-esteem and motivation and the skill of planning for the future

FIGURE 5-8

Levels of conative readiness in the participating countries (%)



Detailed conative skills

Individual analysis shows a significant discrepancy among students in terms of conative readiness. Regarding the skill of self-esteem the following tables show that while the vast majority have proven to be ready (about 75%) or in the process of being ready (about 20%) the situation has reversed completely with respect to the skill of planning for the future. As for the skill of promoting learning motivation, the majority were distributed between the two categories: 'in process' and 'ready'

Individual analysis shows a significant discrepancy among students in terms of conative readiness

SOCIAL SKILLS

COLLECTIVE SOCIAL SKILLS

The students' averages for collective social skills ranged between 36.39 and 44.43, with an overall average of approximately 39.5 of 75 degrees. 60.5% of the total students reached this score and above, which indicates that nearly two-thirds of them possess the minimum or higher of social skills. On the other hand, we note that the scores of students in social skills are closer to their scores in conative skills than to cognitive skills; that is, students' level of social and conative skills is much

TABLE 5-22

Levels of readiness for the skill of self-knowledge and self-esteem (%)

Country	Not ready	In the beginning	In process	Ready
Jordan	0.7	1.3	21.8	76.2
UAE	0.6	0.9	22.6	75.9
Morocco	0.5	1.9	19.2	78.4
Yemen	0.9	1.8	23.8	73.5
Total Sample	0.7	1.5	21.9	75.9

TABLE 5-23

Levels of readiness for the skill of promoting learning motivation (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	0.4	2.8	38.3	58.5
UAE	0.5	2.6	46.1	50.8
Morocco	1.4	3.1	45.1	50.4
Yemen	1.0	3.6	47.4	48.0
Total Sample	0.8	3.1	44.0	52.1

TABLE 5-24

Levels of readiness for the skill of planning for the future (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	70.7	23.2	5.8	0.3
UAE	70.3	22.4	7.1	0.2
Morocco	75.5	20.2	4.3	0
Yemen	76.0	19.4	4.5	0.1
Total Sample	73.2	21.3	5.4	0.1

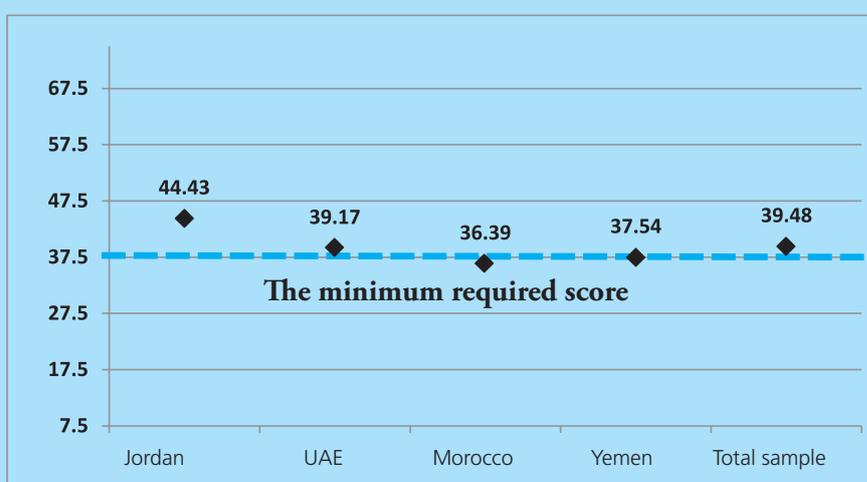
TABLE 5-25

Descriptive measures for collective social skills
(Total score ranging from 0 to 75)

Country	Average (Arithmetic Mean of 75)	Standard Deviation	Minimum Score	Maximum Score
Jordan	44.43	16.54	0	72.81
UAE	39.17	17.43	0	69.84
Morocco	36.39	22.37	0	73.25
Yemen	37.54	19.93	0	71.10
Total Sample	39.48	19.47	0	73.25

FIGURE 5-9

Levels of Collective Social Skills



However, this conclusion needs further investigation, as we are dealing with information that is not subject to the same logic

higher than their level of cognitive skills. However, this conclusion needs further investigation, as we are dealing with information that is not subject to the same logic: our judgment on cognitive skills is based on ‘real’ achievements by students while our judgment on conative and social skills is based on students’ statements (i.e. perceptions).

skill at least to a minimum. In fact, this view was announced by the majority of participants in national workshops where the skill of communication came on top of the list of skills believed to be strongly possessed by students in all the surveyed countries.

DETAILED SOCIAL SKILLS

Skill of direct communication with others

The overall average reached 17.10 of 25 with disparities between participating countries. Generally speaking, statistics indicate that most students possess this

TABLE 5-26

Descriptive measures for the skill of direct communication with others
(Total score ranging from 0 to 25)

Country	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	17.58	5.66	0	25
UAE	16.8	6.03	0	25
Morocco	18.19	4.63	0	25
Yemen	15.86	5.94	0	25
Total Sample	17.10	5.69	0	25

TABLE 5-27

Descriptive measures for the teamwork skill
(Total score ranging from 0 to 25)

Country	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	15.36	6.07	0	23.68
UAE	14.17	6.70	0	24.12
Morocco	12.70	8.52	0	24.56
Yemen	13.05	7.68	0	24.12
Total Sample	13.82	7.38	0	24.56

Teamwork skills

Averages of countries with respect to the teamwork skill ranged between 12.70 and 15.36, with an overall average of 13.82, which is a score below the average for the skill of direct communication with others, indicating relative possession of the teamwork skill. This score may be a logical product of the absence of the culture of teamwork in the school environment in the Arab region, where educational methods are still subject to top-down organisation, which instils the spirit of individualism more than of cooperation and collaborative work. This is in addition to the role of political systems prevailing in the region whose way of management and decision-making, even for highly crucial issues, reflect individual and isolated performance, spreading a general atmosphere avoiding cooperation, participation, and the exchange of experiences.

The risks facing the young generation in modern societies do not exclude anyone and individual efforts remain unable to find solutions to the emerging and growing problems

But if this situation was acceptable in the past, it is a shortcoming today, because the changes occurring in all walks of life are of concern to everyone. The risks facing the young generation in modern societies do not exclude anyone and individual efforts remain unable to find solutions to the emerging and growing problems. Therefore, we find that all modern educational approaches emphasise the need to empower students to master the mechanisms of collaborative action, involving the concepts of active participation and cooperation, but without sacrificing independence.

Participation in public life skill

Averages of countries for this skill ranged between 11.57 and 14.33, with an overall average not exceeding 13.50, which is close to the average score of the skill of teamwork. This result shows that there is a relative interest in participation in public life (within the limits of the average), but with disparities among countries and even among students in the same country. This may be due to prevailing social, political and cultural factors.

ANALYSIS OF DIFFERENCES BETWEEN AVERAGE PERFORMANCE SCORES IN SOCIAL SKILLS

Based on the previous descriptive measures, we realise there is a relative discrepancy between social skills as seen

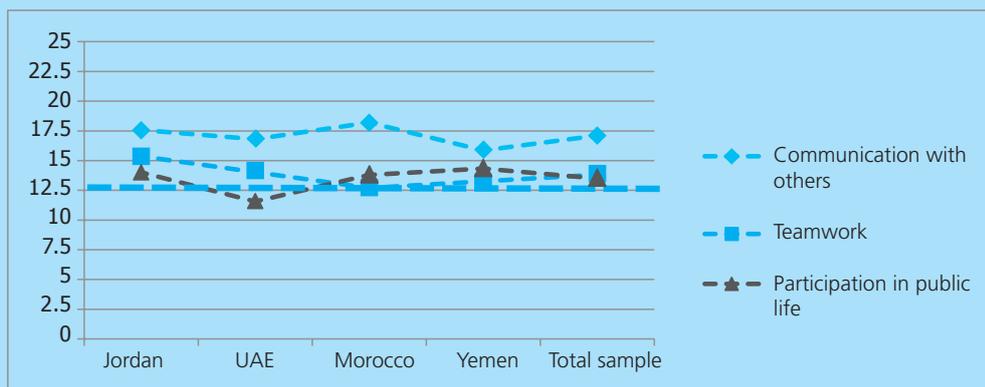
TABLE 5-28

Descriptive measures for the skill of participation in public life
(Total score ranging from 0 to 25)

Country	Average (Arithmetic Mean of 25)	Standard Deviation	Minimum Score	Maximum Score
Jordan	14.01	6.79	0	25
UAE	11.57	6.74	0	25
Morocco	13.80	7.13	0	25
Yemen	14.33	6.73	0	25
Total Sample	13.50	6.92	0	25

FIGURE 5-10

Results of social skills in the participating countries



through Figure 5-10.

The process of analysing the averages of social skills revealed statistically significant differences therein, giving precedence to the skill of direct communication with others over the two skills of teamwork and participation in public life. This may be attributable to cultural factors, as the Arab environment depends on oral, rather than written, communication, favours individual work to teamwork, and does not provide avenues for youth involvement in public life.

THE READINESS OF STUDENTS IN TERMS OF SOCIAL SKILLS

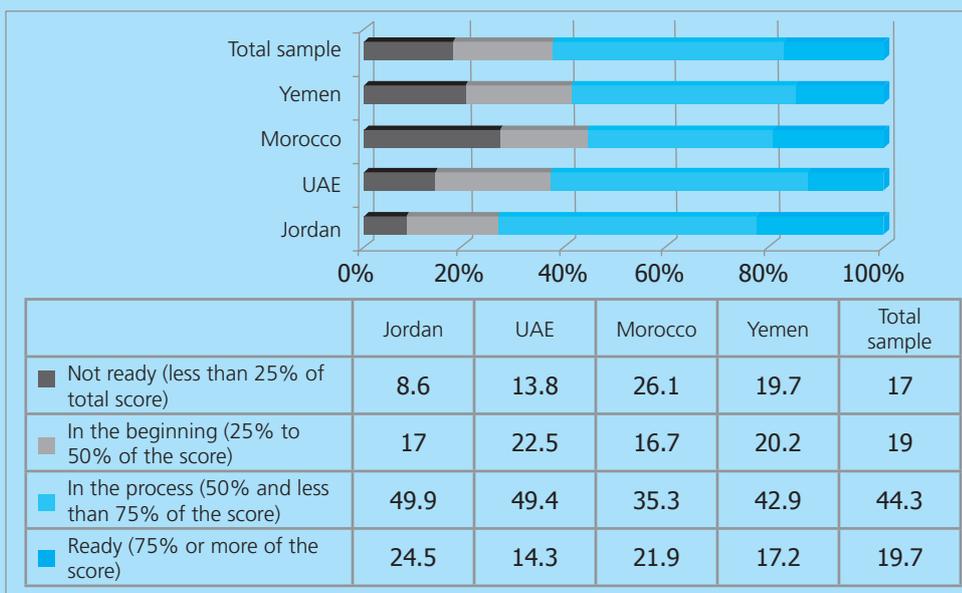
Collective social skills

We note that the percentage of those ‘ready’ in terms of social skills to access the knowledge society did not exceed a quarter of the sample in the best cases, while it was concentrated between 40% and 50% in the category of ‘in the process’. In fact, it is a distribution better than that of the cognitive readiness, but remains below the level of conative readiness.

The process of analysing the averages of social skills revealed statistically significant differences therein, giving precedence to the skill of direct communication with others over the two skills of teamwork and participation in public life

FIGURE 5-11

Levels of social readiness in the countries participating in the research



Detailed social skills

As for the skill of communication with others, the highest percentage of students was concentrated in the 'ready' category

Tables (5-29, 5-30 and 5-31) show that students' distribution on the scale of readiness varies relatively from one skill to another. As for the skill of communication with others, the highest percentage of students was concentrated in the 'ready' category, and declined to the 'in process' category for the skill of teamwork, and 'in the beginning' category for the skill of participation in public life. But this dominant feature does not conceal the

existence of differences at the country level.

If we compare these results to statements made by experts who participated in workshops on the basic skills to access the knowledge society, we note that they have completely missed the skill of participation in public life, unlike a skill they called the 'skill of empathy' (involving the ability to understand others and respect their opinions and the skill of teamwork), which they have emphasised to be strongly possessed by students.

In the end, we realise that the performance level of the sample of respondents indicates that they do not possess adequate cognitive skills required for accessing the knowledge society, while they enjoy a better status with respect to conative and social skills. This is a result that may seem surprising, given the known intimate link between cognitive and conative aspects. In this regard, we can offer two explanations:

- The theory of Multiple Intellects suggests that humans have a variety of intellects for the multiple capabilities they display, but when missing any of them, he or she can employ the remaining ones according to ability (Howard Gardner, in French, 2009). Conative and social intelligence are one of these intellects and an integral part of the life skills considered by the World Health Organisation to be essential for achieving adaptive and positive behaviour and dealing effectively with the demands and challenges of daily life. Consequently, if respondents' statements are true, the possession of these conative and social skills can be beneficial in developing cognitive skills.

- Methodological interpretation manifested in the variety of tools used to measure these skills reveals another explanation. The measurement of cognitive skills depends on situations that truly require mind exertion, recalling and utilising cognitive capacities; thus, there is no room for pretending to possess such skill. However, the measurement of conative and social skills depends, for reasons already mentioned, on students' responses to a number of

TABLE 5-29

Levels of readiness for the skill of direct communication with others (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	6	7.6	35.9	50.5
UAE	7.2	10.8	36.9	45.1
Morocco	2.6	8.9	35.6	52.9
Yemen	8.2	12.9	44.4	34.5
Total Sample	6.1	10	38.3	45.6

TABLE 5-30

Levels of readiness for the skill of teamwork (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	10.3	12.9	40.0	36.8
UAE	15.5	12.4	41.7	30.4
Morocco	28.4	11.2	22.7	37.7
Yemen	23.5	12.8	33.3	30.4
Total Sample	19.4	12.4	34.3	33.9

TABLE 5-31

Levels of readiness for the skill of participation in public life (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	16.2	22.4	33.9	27.5
UAE	23.6	42.0	18.3	16.1
Morocco	18.3	33.3	18.7	29.7
Yemen	13.4	36.2	20.2	30.2
Total Sample	17.6	35.7	20.5	26.2

TABLE 5-32

Descriptive measures for collective values
(Total score ranging from 1 to 5)

Country	Average (Arithmetic Mean of 5)	Standard Deviation	Minimum Score	Maximum Score
Jordan	3.80	0.34	2.33	4.72
UAE	3.77	0.34	2.41	4.66
Morocco	3.94	0.33	2.54	4.77
Yemen	3.94	0.27	2.22	4.65
Total Sample	3.86	0.33	2.26	4.77

questions relating to personality, attitudes and actions in certain situations, and thus the question of the compatibility of these answers with reality remains questionable. That is, the cognitive skills are a kind of academic intelligence, which can be measured through artificial situations, while social and conative skills are a kind of practical intelligence used in everyday situations which are not easily measured due to the difficulty of listing life situations and measuring them theoretically.

EXAMINING STUDENTS' VALUES

COLLECTIVE VALUES

The average of the total sample scored by respondents reached 3.86 of 5, a high

score indicating a significant possession of values. Students' scores are consistent in this respect regardless of their country.

DETAILED VALUES

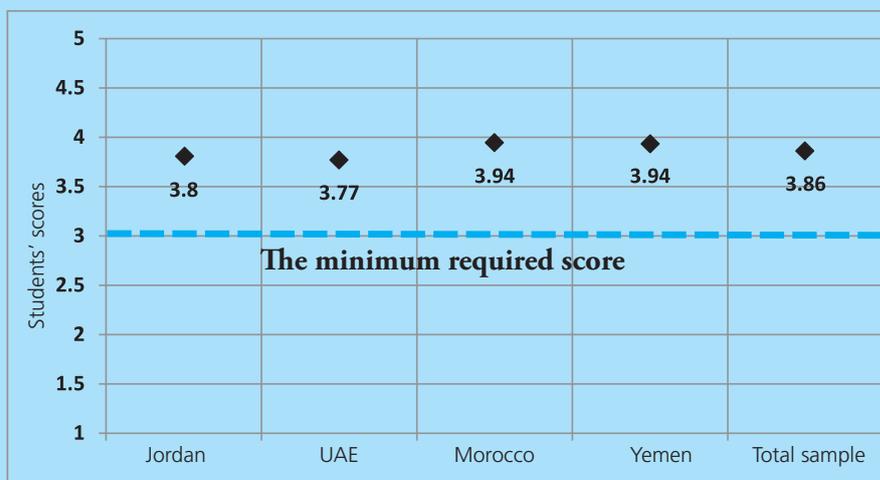
The average scores achieved by respondents in cognitive values reached 3.98, 3.96 in conative values, 3.68 in social values and 3.87 in universal values. These high scores indicate the attention paid to these values. Most students agree on this regardless of their country.

The findings concerning cognitive, conative, social and universal values differ from those stated in other reports with regard to the existence of a gap between scientific and technological development which is moving upwards and the system of human values which is moving downwards

The cognitive skills are a kind of academic intelligence, which can be measured through artificial situations

FIGURE 5-12

Levels of Aggregate Values



*The human race
“is undergoing a
cultural, spiritual,
moral, and
even existential
degradation.”*

TABLE 5-33

Descriptive measures for cognitive values (Total score ranging from 1 to 5)

	Average (Arithmetic Mean of 5)	Standard Deviation	Minimum Score	Maximum Score
Jordan	3.94	0.47	2.05	5
UAE	3.86	0.45	1.84	4.89
Morocco	4.01	0.44	2.06	5
Yemen	4.05	0.39	1.84	5
Total Sample	3.98	0.44	1.84	5

TABLE 5-34

Descriptive measures for conative values (Total score ranging from 1 to 5)

Country	Average (Arithmetic Mean of 5)	Standard Deviation	Minimum Score	Maximum Score
Jordan	3.94	0.45	2.00	5
UAE	3.86	0.44	2.26	5
Morocco	4.00	0.38	2.37	5
Yemen	4.03	0.35	2.74	5
Total Sample	3.96	0.41	2.00	5

TABLE 5-35

Descriptive measures for social values (Total score ranging from 1 to 5)

Country	Average (Arithmetic Mean of 5)	Standard Deviation	Minimum Score	Maximum Score
Jordan	3.55	0.38	2.17	4.72
UAE	3.70	0.39	2.38	4.75
Morocco	3.75	0.42	2.00	4.88
Yemen	3.75	0.36	1.67	4.72
Total Sample	3.68	0.40	1.67	4.88

at the world level, including in the Arab region. This has led some to warn that the human race “is undergoing a cultural, spiritual, moral, and even existential degradation.”³¹

Though we are aware that the expression of interest in a value does not necessarily mean acting according to it, we consider this finding a sign of students’ awareness of the importance of values. Put differently, when a student declares that he/she possesses or agrees with a certain value, this is either because he/she possesses it in reality or he/she realises that it involves a positive, personally and socially acceptable meaning. In this regard, the experts participating in the workshops

held in sample countries have confirmed, in part, this comprehensive interest in values among students. They have done so indirectly through their answers to the question on the values that they believe to be strongly possessed by students; they have submitted a list containing a mixture of cognitive, personal and social values, but missing universal values. This is despite the fact that when they were asked about the values they deemed necessary for the knowledge society, most of their choices focused on the cognitive values, especially the love of knowledge, scientific ambition, and the spirit of creation and creativity.

On the other hand, the findings of the current research are contradictory to those

TABLE 5-36

Descriptive measures for universal values
(Total score ranging from 1 to 5)

Country	Average (Arithmetic Mean of 5)	Standard Deviation	Minimum Score	Maximum Score
Jordan	3.83	0.47	2.21	5.00
UAE	3.72	0.43	1.00	4.85
Morocco	3.98	0.44	2.00	5.00
Yemen	3.93	0.39	2.47	5.00
Total Sample	3.87	0.44	1.00	5.00

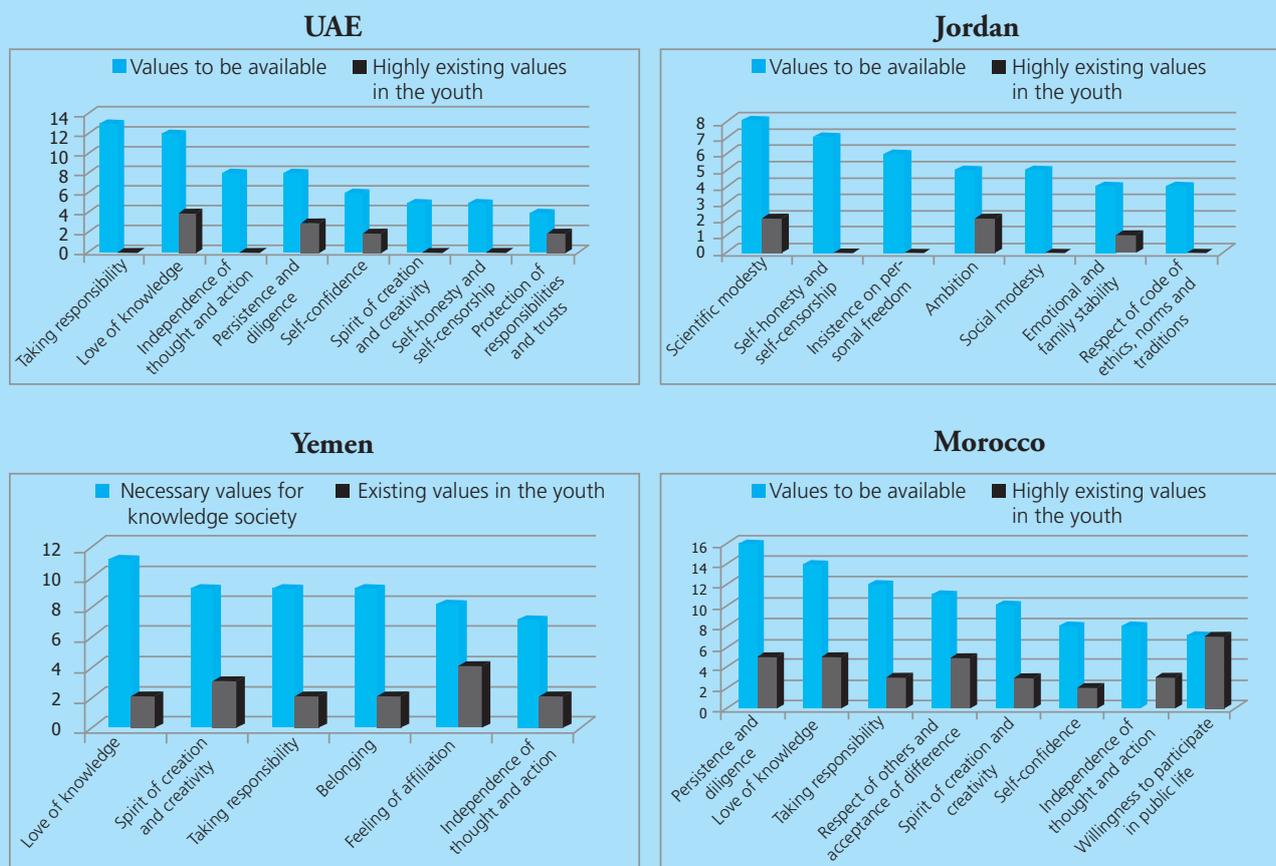
We hear increasing appeals to make curricula more concerned with the issue of values, but not to compartmentalise them in a number of ethical rules implicitly or explicitly taught to the young

reached by some previous studies with respect to the erosion of the system of values in recent decades, or what some call ‘normless’ or ‘anomie’, as popularised by Durkheim, under the influence of political, economic and social factors. Therefore, we hear increasing appeals to make curricula more concerned with the issue of values, but not to compartmentalise them in a number

of ethical rules implicitly or explicitly taught to the young. In this respect, a study published by ISESCO in 2008 on Islamic values and the mechanisms of reinforcing them stated: “The overall perspective of the educational mission means configuring the learner’s personality in its various dimensions. In addition to knowledge and skills, the learner is in need now, more

FIGURE 5-13

Views of workshop participants on the status of values in the case study countries



than ever, of a system of values that enables him/her to absorb his/her culture and civilisation and open up consciously to other cultures and civilisations. The learner also needs standards to weigh out whatever principles, behaviours and ideas coming to him/her in order to distinguish the wicked from the good. Moreover, the learner needs to know others in the context of open communication regulated by his/her system of values stemming from his/her religion and civilisation” (Khaled Al Samadi, in Arabic, 2008).

DIFFERENTIAL ANALYSIS OF THE AVERAGE SCORES FOR VALUES

Based on the above-mentioned descriptive measures, we note a degree of closeness between the scores of the surveyed values, which all exceeded the average (3 of 5).

The statistical comparison between values revealed a statistically significant difference in the degree of attention paid to them. Cognitive values came first, followed by conative values, then universal values, and finally social values.

THE READINESS OF STUDENTS IN TERMS OF VALUES

COLLECTIVE VALUES

Through the figure 5-15, we observe

that most students are ‘in the process of’ readiness with a significant proportion of them in the ‘ready’ category. Accordingly, we conclude that the status of respondents in the four countries with respect to the values aspect is much better than their skills aspect.

DETAILED VALUES

The students’ level of readiness regarding values exceeds their level of readiness with respect to skills; when we compare the rates of those ‘ready’ in each category of skills to the rates of those ‘ready’ in each category of values, we find a wide gap between them:

- The percentage of those ‘ready’ in the cognitive skills is 0% versus 50.4% in the cognitive values.

- The percentage of those ‘ready’ in the conative skills is 3.7% versus 48.8% in the conative values.

- The percentage of those ‘ready’ in the social skills is 19.7% versus 19.5% in the social values.

When considering the distribution of students on the scale of readiness in the various values, we note that the vast majority of students are concentrated in the two upper levels of the readiness scale. Therefore, it can be said that the value balance held by participants qualify them to adapt to the requirements of the knowledge society.

Previous analyses showed the openness

The statistical comparison between values revealed a statistically significant difference in the degree of attention paid to them. Cognitive values came first, followed by conative values, then universal values, and finally social values

FIGURE 5-14

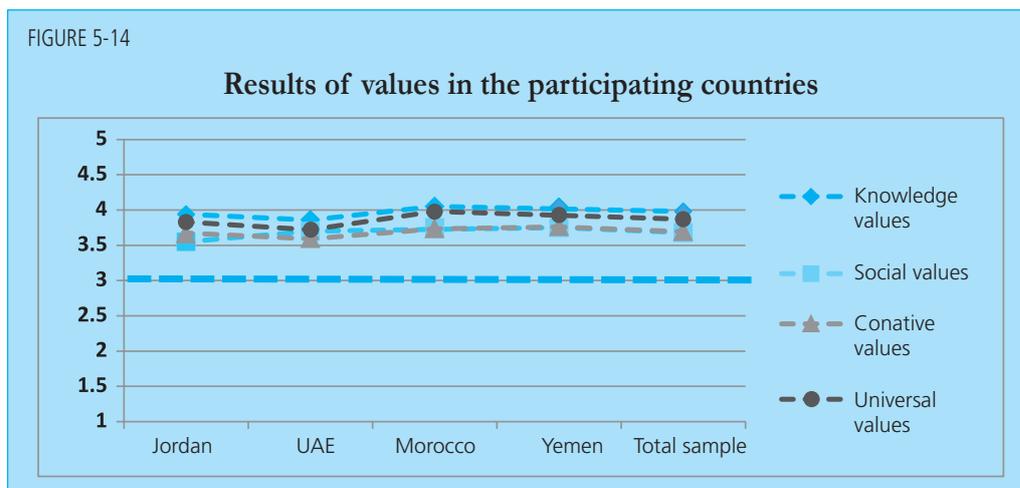
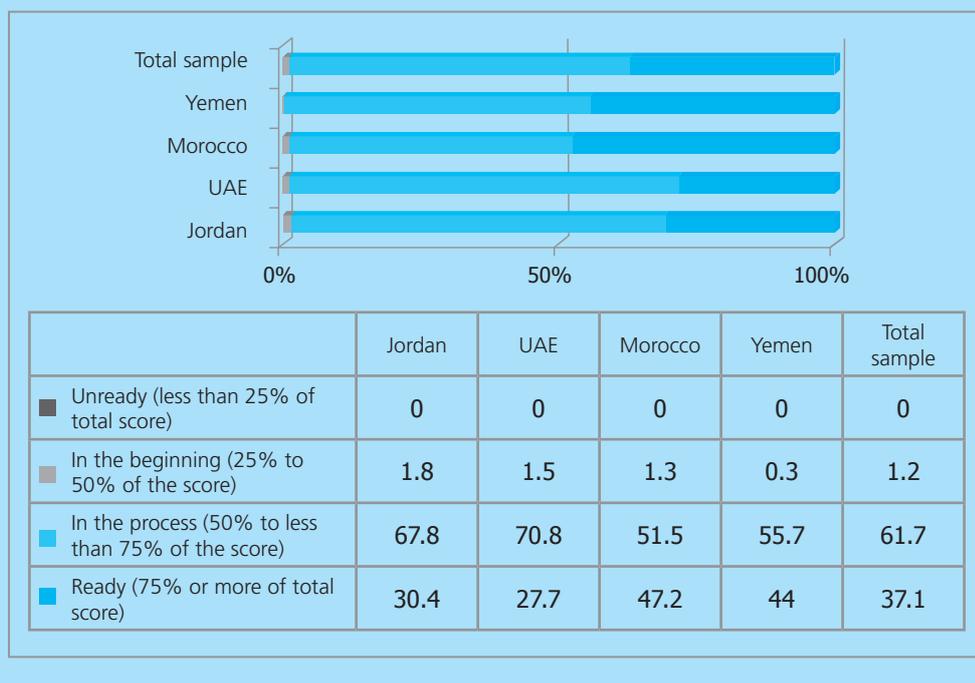


FIGURE 5-15

Levels of values readiness in participating countries (%)



Previous analyses showed the openness of students to universal values, which is a basic requirement for engaging in the knowledge society. However, social values seem less present at the level of readiness

of students to universal values, which is a basic requirement for engaging in the knowledge society. However, social values seem less present at the level of readiness. That calls attention to the interpretation of the relationship between what is social and what is universal. This problematic issue was addressed by many experts. In this regard, the report of the 47th International Conference for Education states, “Young people are increasingly drawn towards a consumer culture and transnational lifestyles, which tends to detach them from their traditional heritage and culture. Although this could make them more open to the world, this ‘estrangement’

of people away from their historical roots could have explosive consequences in many regions of the world.”

This view raises a question: Has the current generation become more convinced of or attached to the values linking it to the far wider world than to the values linking it to others in the social context that surrounds it? If so, does this mean that understanding and responding to the different ‘other’ belonging to another culture have become more likely than understanding and responding between neighbours, inhabitants of the same area, and the people of one nation? Or is it a natural result of societal changes

TABLE 5-37

Levels of readiness in cognitive values (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	0	4.1	49.1	46.8
UAE	0.1	4.3	56.8	38.8
Morocco	0	3.4	42.3	54.3
Yemen	0.1	1.3	42.0	56.6
Total Sample	0	3.3	46.3	50.4

Teachers expressed interest in almost all kinds of educational practices, and their responses did not reflect as much difference in type as in degree.

TABLE 5-38

Levels of readiness in conative values (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	0.1	3.7	48.2	48
UAE	0	4.5	56.3	39.2
Morocco	0	1.9	45.6	52.5
Yemen	0	0.8	45.3	53.9
Total Sample	0	2.6	48.6	48.8

TABLE 5-39

Levels of readiness in social values (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	0	10.2	80.1	9.7
UAE	0	5.9	73.9	20.2
Morocco	0.1	5.5	67.6	26.8
Yemen	0.1	3.1	74.5	22.3
Total Sample	0	6.2	74.3	19.5

TABLE 5-40

Levels of readiness in universal values (%)

Country	Not ready	In the beginning	In the process	Ready
Jordan	0	5.0	58.0	37.0
UAE	0.1	4.9	69.3	25.7
Morocco	0.1	2.7	47.5	49.7
Yemen	0	1.7	55.8	42.5
Total Sample	0	3.5	57.2	39.3

taking place in the Arab environment due to globalisation.

TEACHERS' OPINIONS ON VALUES

IMPORTANCE OF VALUES FROM THE VIEWPOINT OF TEACHERS

Teachers expressed interest in all values, without exception and with close degrees. This is something positive as it reminds us of the role of the teacher-educator whose mission is not confined to the formation of minds but also the development of emotion. Yet, a question remains: To what extent do those teachers translate this

remarkable attention paid to values into an educational practice that implants such values in students and encourages them to act accordingly?

Also the analysis revealed the existence of statistically significant differences between values; universal values came in first place while cognitive values came last, and both conative and social values came in the middle without a significant difference between them. Hence, the difference lies in the degree and not in type, which indicates the presence of a ground that can prepare these teachers to deal positively with the issue of values. This is what is called for by recent educational approaches which stress, "It is essential that nurturing values in students becomes a part of

TABLE 5-41

Comparison between values in terms of their importance from the viewpoint of teachers (Total score ranging from 1 to 5)

Values	Cognitive Values	Conative Values	Social Values	Universal Values
Average	4.21	4.28	4.26	4.30
Standard Deviation	0.87	0.77	0.90	0.90
Minimum	1	1	1	1
Maximum	5	5	5	5

every educational activity in the various school subjects within the context of an integrated project format. Educational institutions should have a clear mission and vision of how to complete this task and thus produce graduates who are well-educated and balanced, have a sense of identity and belonging, skills to master work, updated knowledge, and able to continue improving themselves in all of these qualities” (Khaled Al-Samadi, in Arabic, 2008).

However, the order of values according to their importance from teachers’ perspectives, compared to their order by students showed a difference in the type and degree summarised in the following:

- Cognitive values take first place for students with an average of 3.98, while it ranks fourth for teachers with an average of 4.21.
- Universal values take third place for students with an average of 3.87, while it ranks first for teachers with an average of 4.30.
- Conative and social values come in the third and fourth places with averages of 3.96 and 3.68, respectively, according to students, while they share

the second place according to teachers with averages having no significant difference, 4.28 and 4.26, respectively.

STUDENTS’ POSSESSION OF VALUES FROM TEACHERS’ PERSPECTIVE

As for the extent of students’ possession of values from the perspective of teachers, the analysis revealed the presence of statistically significant differences between the cognitive values and other values. In other words, students possess cognitive values less than other values. Moreover, the comparison showed that there is no equivalence between the importance of values in the eyes of teachers and their judgment on the existence of such values among students. In fact, this trend is not restricted to the teachers belonging to the concerned countries only; that is, there were previous studies that addressed the same subject in other Arab countries and almost reached the same conclusion represented in value deficiency among Arab youth. There were attempts to explain this issue and most of them concluded that there was a state of

The comparison showed that there is no equivalence between the importance of values in the eyes of teachers and their judgment on the existence of such values among students

TABLE 5-42

Comparison between students’ possession of values from teachers’ perspective (Total score ranging from 1 to 5)

Values	Cognitive Values	Conative Values	Social Values	Universal Values
Average	2.56	3.01	2.89	2.96
Standard Deviation	0.82	0.81	0.90	0.93
Minimum	1	1	1	1
Maximum	5	5	5	5

More than 70% of students fully agree on the existence of good relations with their colleagues as well as their teachers

‘cultural rupture’ between a conservative environment and a trend of openness to other civilisations, resulting in an imbalance at the level of references, not to mention the decline in the educational role of the family (Fahmy Howaidi, background paper for the report). But we can add another reason related to educational curricula. Namely, when considering the reforms made during the last ten years, we note that most of them (at least in the countries that have undergone the experience of essential reform in curricula, such as Morocco, Tunisia, Jordan and Egypt) have summarised knowledge and school values, which are in fact skills primarily concerned with the preparation for life, to the point where such values have become mere ready-made forms packed in books and transferred to the young through strict instruction (i.e. replacing the old dictation with new instruction), (Hafeez, Abdul-Wahhab, background paper for the report). Even in the countries where we observe the presence of values in legal educational texts, whether through declared objectives or the lessons and content included in textbooks, it remains restricted to the extent and method of applying such values. This is because values require free will and personal conviction separate from dictations and external instructions whereas Arab schools still operate according to an authoritarian principle in which students are subject to superior choices. Indeed, this would put into question the ability of

students to conatively and actively engage in the proposed system of values.

STUDYING ENABLING ENVIRONMENTS

ENABLING ENVIRONMENTS FROM STUDENTS’ PERSPECTIVE

We note that more than 70% of students fully agree on the existence of good relations with their colleagues as well as their teachers. The strong degree of agreement reduces with respect to the ideas relating to the understanding of educational materials and the role of schools in encouraging seeking knowledge and preparing for the future. This reveals a relative uncertainty in students’ confidence in school and in the content it provides.

STUDENTS’ OPINIONS ON HEALTH ENABLING ENVIRONMENT

The health enabling environment does not seem to have a consensus among students; the percentage of those supporting the statement that “school provides regular health checks for students” does not exceed 37%, while 39.7% of students agree that there is an equipped school clinic. At the counselling level, services seem relatively better from students’ perspective, wherein the percentage of those ‘fully agreeing’ on

TABLE 5-43

Students’ opinions on the school and their relationship with its components (%)

	Fully Agree	Somewhat agree	Do not agree	Do not agree at all
(a) I can easily understand subjects.	25.1	64.7	8.3	1.9
(b) School strengthens my desire to seek knowledge and excel in it.	42.3	41.3	10.7	5.7
(c) I feel comfortable and secure in school.	50.3	34.3	10.1	5.3
(d) I have a good relationship with my teachers (mutual respect).	70	24.1	3.3	2.6
(e) I have a good relationship with my classmates in school.	73.8	22.3	2.6	1.3
(f) The school prepares me well for the future.	50.3	36.2	8.2	5.3

TABLE 5-44

Students' opinions on health enabling environment

	Fully Agree	Somewhat agree	Do not agree	Do not agree at all
(a) The school provides regular health checks for students.	37.0	26.6	16.7	19.7
(b) The school provides free treatment for all students.	34.7	22.2	19.2	23.9
(c) School clinics have all the necessary supplies and equipment.	39.7	21.3	14.5	24.5
(d) Health campaigns against emergency epidemics are organised in schools.	41.2	29.4	13.8	15.6
(e) The school offers awareness programmes against serious diseases.	47.8	30.4	11.5	10.3
(f) The school has a social worker to help students solve their problems.	46.5	24	12.6	16.9
(g) The school has an educational advisor/psychologist to help students solve their problems.	41.5	22.5	14.7	21.3
(h) Topics related to health education are taught.	35.7	30.5	17.2	16.6

the provision of awareness programmes reached 47.8%. However, though these percentages are encouraging, they should not make us lose sight of the percentages of those who deny the availability of the necessary components for a healthy enabling environment.

In this context, international reports indicate that public expenditure on health as a percentage of total government spending is high in Jordan (9.5%) and the UAE (8.7%), while it is low in Morocco and Yemen (5.5%), (UNDP, 2009). Speaking about the importance of the health dimension, we refer here to the FRESH initiative involving WHO, UNICEF, UNESCO, World Bank, the Association of International Educators, the Partnership for Child Development and the Education Development Centre. This initiative aims to create healthy school environments covering four key components: health-related school policies, healthy environments for learning, skill-based health education, and school health and nutrition services (Abdul Samee', Mustafa, background paper for the report).

STUDENTS' OPINIONS ON POLITICAL PARTICIPATION

As for political activity and the desire for

political participation, the percentage of supporters did not exceed 30.7 and 31.8%, respectively, with a significant percentage of not less than 11.3% of those who abstained from responding (see Table m-1 in the Annex). This result corresponds with those of several European studies proving that the youth in this age group are more interested in all that concerns humans, such as wars, natural disasters, racism, than in public affairs.

This situation is almost normal in view of the political environment prevailing in the Arab region and which does not provide, in many cases, an atmosphere of trust that encourages the involvement in political activities and announcing this without fear. In fact, this issue was addressed in the Human Development Report (2003) which stated that the unstable status of freedoms and human rights, oppression, and marginalisation experienced by most peoples of the Arab region have contributed to suppressing aspirations for achievement, happiness, and belonging, creating a sense of indifference and political depression, and thus citizens' abandonment of political participation. However, the mobility currently witnessed in the Arab region now proves that dictatorial practices may have alienated young people from political activity, but

In this context, international reports indicate that public expenditure on health as a percentage of total government spending is high in Jordan (9.5%) and the UAE (8.7%), while it is low in Morocco and Yemen (5.5%)

has not deprived them of a political sense and the desire to bring about change.

STUDENT OPINIONS ON LEGAL AND SOCIAL ENABLING ENVIRONMENTS

It seems that trust in laws, and the seriousness of their application in school, is not very widespread among students. That is, the percentage of those fully agreeing on the existence and strict application of laws did not exceed 46.3%, and is actually below that with respect to the laws in society as a whole (34%). With regard to social justice in education and employment, the percentage is worse, as those fully agreeing with the statement “adoption of objective criteria and considerations in employment and promotion” did not exceed 30%. Also, 52% of students expressed their decisive support for the idea of “who has money has a better opportunity to receive education,” and this is partially supported by 23.1% (see Table m-3 in the Annex). This perception by students shows that educational systems do not play their developmental role in achieving equity and justice, a role which we hope to be achieved by these systems in order to act as a mechanism for realising social mobility based on justice and equal opportunities (see chapter 1).

STUDENTS' OPINIONS ON THE GOVERNMENT AND NON-GOVERNMENTAL MEDIA

Students' opinion on government media does not differ from their opinion on the legal environment; only 35.1% confirmed its integrity and 38.3% supported the idea that “the media transmits various views to society”. Moreover, their opinions on non-governmental media were no more positive; only 32.4% confirmed its integrity (see Tables m-4 and m-5 in the Annex). This refers to students' lack of confidence in the Arab media which

seems, from their point of view, lacking in objectivity, neutrality, and real diversity of views. Here a question is raised about the media's ability to practice its role in preparing the young for the knowledge society.

TEACHERS' PERSPECTIVES OF ENABLING ENVIRONMENTS

TEACHERS' OPINIONS ON THE EDUCATIONAL SYSTEM AND ITS COMPONENTS

The quality of education in the Arab region does not seem to enjoy a consensus among teachers. To elaborate, while 20.6% of them confirmed an improvement in quality, the rest were divided between those doubting it (46.2%) and those denying it (33.2%), (see Table m-12 in the Annex). These views agree with the image depicted by international reports on the low quality of education in the Arab region. It is enough to refer to the World Bank's report ‘The Road Not Travelled’ and UNESCO's ‘EFA Global Monitoring Report 2010’ to reveal the reality of educational systems and the gaps separating them from their counterparts in developed countries (see Chapter 2 of the General Report).

Since we cannot approach the quality of education without talking about the school as the institution entrusted with the achievement of educational goals, we have asked teachers about their opinion on it and their answers have reflected a sense of dissatisfaction. 58.1% of teachers agreed with the statement that “the role of school has become secondary with respect to providing students with sciences and knowledge” (14.1% fully agreed and 44% somewhat agreed). Also, 79.1% of them agreed on the idea that “the educational methods adopted in schools do not motivate students to seek knowledge” (34.2% fully agreed and 44.9% somewhat agreed), (see Table m-15 in the Annex).

From the above we conclude that school image and school role witnessed a

The quality of education in the Arab region does not seem to enjoy a consensus among teachers. To elaborate, while 20.6% of them confirmed an improvement in quality, the rest were divided between those doubting it (46.2%) and those denying it (33.2%)

decline among teachers. Perhaps the main reason that has led to this ‘questioning is the broad availability of educational alternatives, topped by the media and recent communication technologies which compete with formal education, especially since the latter has failed to keep up with the evolving/developing reality and actual needs of students. The UNESCO report states, “General secondary education is often too academic and is not preparing young people adequately for the world of work and responsible citizenship. When attending secondary school, young people often still discover a universe of knowledge fragmented into many subjects (languages, mathematics, history, geography, natural sciences, social sciences, etc.). What do they really learn? And is that useful for entering into active life, the world of work and society?” (UNESCO, 2004).

We must not forget the teacher as an essential component of the educational system. International organisations concerned with education have attributed teachers paramount importance. They stress that the quality of education is directly related to the quality of the teacher, and there is no way to improve the quality of educational outcomes without the training of competent teachers in skills that qualify them to take responsibility for the preparation of the young, and who enjoy the respect of all other participants in the education process. However, the question of respect has become a serious phenomenon in many countries of the world, including Arab countries. This has been confirmed by the responding teachers, who stated, “Teachers no longer enjoy the same degree of respect in society”; 58.4% fully agreed and 33.9% somewhat agreed (see Table m-13 in the Annex).

Teachers’ perceptions towards students have not been better; 62.2% of teachers confirm that “students have become less respectful of the teacher”. 60.4% of them indicate that “the interest of students in study is decreasing,” and 53.9% stated that “material values dominated over cognitive

values among most students.” On the contrary, only 21.8% agreed on the idea that “the current generation of students is characterised by a strong personality” and only 9.2% agree that “the current generation of students is better prepared than previous generations”. These negative images of teachers towards students remind us of the image of teachers as seen by students. This situation suggests that there is an educational misunderstanding whereby each party throws responsibility on the other. Here, a question arises: Can we consider this negative image held by teachers about students as an implicit recognition of the failure in upbringing in general and in education in particular? If so, what is the responsibility of teachers and society for this situation? And what is the responsibility of the government represented in the Ministry of Education, which remains unaccountable in most countries of the region and does not submit a statement of account to the people showing what it has achieved in any of the fields?

TEACHERS’ OPINIONS ON THE TEACHING PROFESSION AND THEIR RELATION TO IT

The attitudes expressed by teachers express a fragile relationship with the teaching profession, as 55.9% of them state that their monthly salary does not bring them self-sufficiency, and approximately 40% of them express their willingness to give up teaching and get another job that guarantees them a higher income. This position reflects a state of dissatisfaction with the teaching profession regarding income, while the majority feel moral comfort (79.9% expressed that the teaching profession makes them feel they are deliverers of a message). If we refer to the research literatures on this issue, we find that they agree on the existence of a decline in appreciation by the society and teachers themselves for the teaching profession

We must not forget the teacher as an essential component of the educational system. International organisations concerned with education have attributed teachers paramount importance

TABLE 5-45

Teachers' opinions on the teaching profession and their relation to it (%)

	Fully applicable	Somewhat applicable	Not applicable	Fully opposing
(a) I will give up the teaching profession if I find another job which provides me with the same income and living standard.	27.7	17.1	36.6	18.6
(b) I will give up the teaching profession if I find another job which provides me with an income higher than my current income received from teaching.	38.6	22.1	28.2	11.1
(c) The income I receive from teaching does not achieve self-sufficiency.	55.9	28.5	13.6	2
(d) Teaching gives me a feeling of being a deliverer of a message in a unique position to pass on knowledge.	79.9	15.9	3.9	0.3

If we refer to the research literatures on this issue, we find that they agree on the existence of a decline in appreciation by the society and teachers themselves for the teaching profession compared to other professions equal to it in the years of study

compared to other professions equal to it in the years of study. Some have tried to explain this by stating that many of those who practice teaching in primary and secondary schools are graduates who have had no opportunity to complete their post-graduate studies, who have not found better jobs, or who have become content with it under economic, social or other pressures (e.g. family commitments, health conditions, etc.). Yet, this does not negate the existence of a category practicing teaching out of their desire and conviction of its noble message. Additionally, the conditions of the teaching profession often contribute to the loss of desire to continue practicing it, such as the absence of financial and professional incentives, lack of teaching aids, and strained relations with other educational parties.

TEACHERS' OPINIONS ON THE PREPARATION FOR THE TEACHING PROFESSION

There is no dominant trend with respect to the preparation of teachers for the teaching profession. Answers were limited to two small groups: one feels that preparation is somehow not responding to the requirements of the teaching profession (42.3%), and another fully supports the existence of a gap between the preparation for the profession and

its actual requirements (34.7%). This is an interesting indicator, because the admission by teachers themselves of deficiencies in teacher preparation programmes reflects the difficulty they encounter and strengthens the hypothesis that links teacher's poor preparation to student's low achievement, as revealed by various evaluation studies. In this context, we recall the findings reached by the McKinsey and Company study about the correlation between the quality of education and the quality of the teacher. It confirmed that the quality of education cannot precede the quality of the teacher, and thus the readiness of universities and teacher preparation colleges (with their programmes and staff) should be examined in order to produce competent teachers who can move towards delivering the message of education, i.e., forming a generation of youth able to access the knowledge society. This issue should be reconsidered, especially since we know most secondary education teachers concentrate on a specialised subject at the expense of the pedagogical preparation which is essential for success in the teaching profession.

On another level, there are different views of teachers on the existence of rigorous standards for the selection of candidates for the teaching profession; 52.4% of respondents denied this (ranging between denial and absolute

TABLE 5-46

Teachers' opinions on preparation for the teaching profession (%)

	Fully Agree	Somewhat agree	Do not agree	Do not agree at all
(a) There is a gap between the formation (preparation) of teachers and the real requirements of the teaching profession.	34.7	42.3	16.7	6.3
(b) The selection of candidates for the teaching profession is not subject to rigorous standards.	18.5	29.1	26.1	26.3

denial) versus 47.6% distributed between those fully agreeing and those agreeing to some extent. This would aggravate the problem. Plainly, if the training of teachers does not respond to the requirements and the selection process is not subject to objective conditions related to these requirements, this means the responsibility of preparing young people is threatened.

It is worth mentioning here that despite this recognition of poor capacities in the teaching profession, the percentage of those who feel in real need of “vocational training to be able to teach the future generation” did not exceed 15.3%. Even if we add to them the percentage of those reluctant to confess this need (31.2%), disparity remains, which signifies that there is a tendency among some teachers to distance themselves from such shortcomings; i.e. they do not

deny that there is a shortcoming but they absolve themselves of it (see Table m-16 in the Annex).

TEACHERS' OPINIONS ON EDUCATIONAL METHODS AND EQUIPMENT AVAILABLE AT SCHOOL

In order for the school to dispose of traditional methods, wherein the role of the learner is restricted to listening, storing and recalling, and transform it into a suitable learning environment that helps students to actively acquire knowledge, it is necessary to provide modern educational methods that allow learners to observe, experiment, and research. However, the reality as depicted by teachers is that more attention needs to be given to the equipping of schools with the necessary tools and teaching materials. According to

There are different views of teachers on the existence of rigorous standards for the selection of candidates for the teaching profession

TABLE 5-47

Teachers' opinions on the equipment available at schools and its condition (%)

	In a good condition	In a bad condition	NA
(a) Scientific laboratories	69.1	25.4	5.5
(b) Language laboratories	21.2	6.1	72.7
(c) School library	70.7	21.6	7.7
(d) A computer for each teacher	16.1	8	75.9
(e) Educational computer software	26.1	10.9	63
(f) Access to the internet	52.6	15.9	31.5
(g) Subscription to a study-related website	21.8	6.4	71.8
(h) Printing and copy machines	61.2	21.9	16.9
(i) Tools for teaching the subject	42.2	26.5	31.3

teachers, most of the necessary equipment at school should include a library (70.7%), scientific laboratories (69.1%), printing and copying machines (61.2%), and access to the internet (52.6%). Though these percentages are important, we should not forget that there are a significant number of schools still lacking such requirements. If the lack of a computer for each teacher is understandable, the lack of tools to teach various disciplines is in fact an obstacle to learning.

The experts who participated in the workshops held in the four case study countries were more optimistic

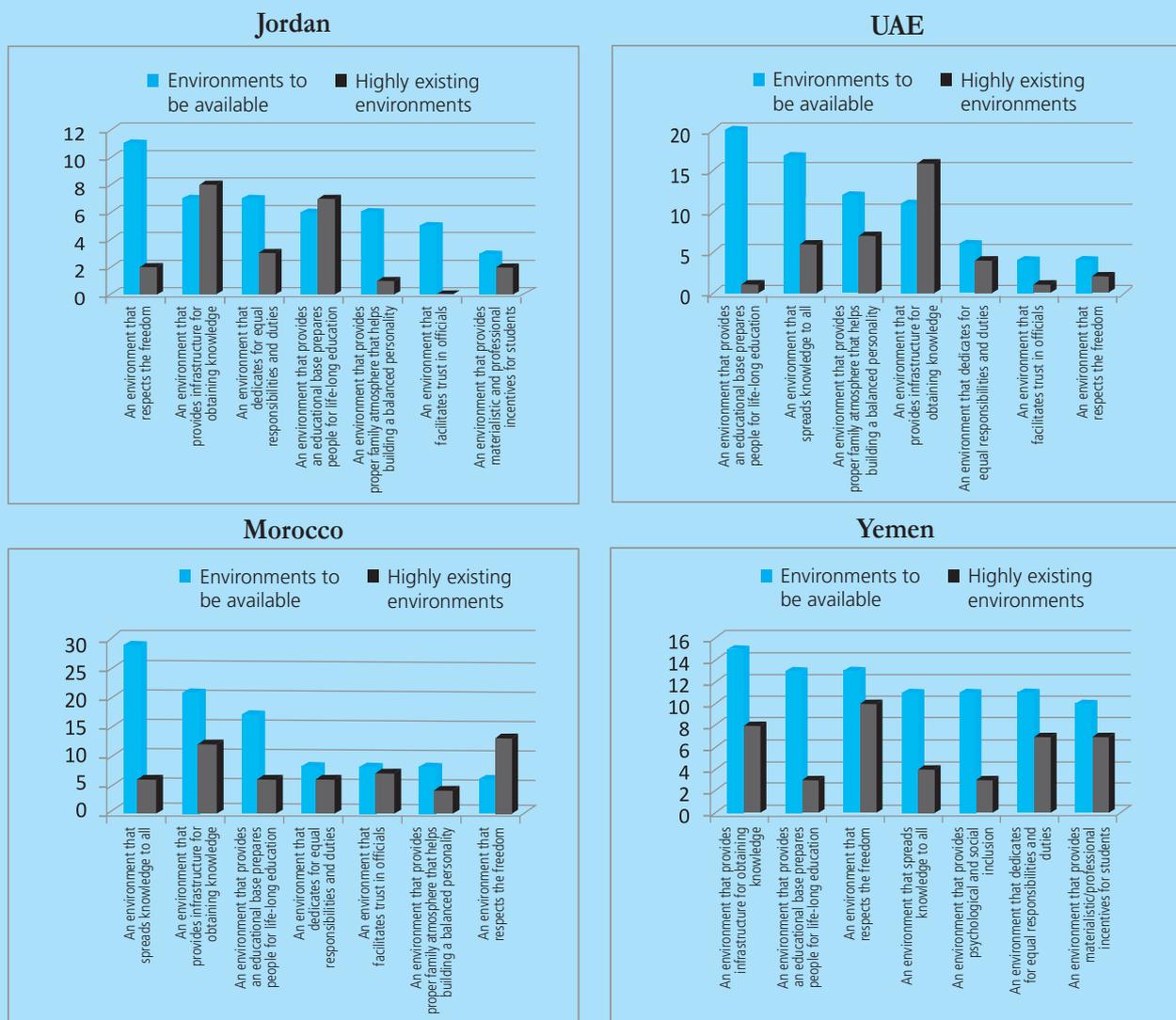
when they noted that the existing infrastructure for acquiring knowledge was strong in their countries. This may be due to their mere observation of the spread of educational institutions, while the factor that is of equal, if not more, importance to teachers is the availability of pedagogical means in the classroom to help them perform well.

TEACHERS' OPINION ON THE ATMOSPHERE OF RELATIONS IN THE SCHOOL

Violence at school has become a

FIGURE 5-16

Workshop participants' opinions on environments status in the case study countries



widespread phenomenon not only in Arab schools but almost across the whole world. Though its causes are numerous and differ from one environment to another, there is some agreement on the decline of school's 'esteem' and 'inviolability,' accompanied by the decline in teachers' status in society and in their educational role. This is in addition to the discourses and drama broadcast by the media which has spread the culture of violence among students and in society as a whole. The teachers' responses have confirmed that there are cases of violence in the schools where they work, and it appears that most of them are among students. In fact, 69.1% of teachers absolutely denied the existence of violence among themselves, while only 36.3% of them denied the existence of violence between them and students. (See Table m-11 in the Annex).

TEACHERS' OPINIONS ON AVAILABLE SUPPORT

Teachers' responses about the types of pre- and in-service support provided by the state indicate their dissatisfaction. Their attitudes towards the proposed facilities were confined between the category of 'somewhat agree' and the category of 'do not agree at all.' The percentage of consensus did not exceed

47.5% for those who somewhat agree that "the state provides opportunities for in-service training to improve the level of education," while the weakest percentage (29.1%) was for those who somewhat agree that "the selection of candidates for the teaching profession is subject to rigorous standards".

More dissatisfaction is witnessed in matters relating to salaries and incentives, as well as the structures that protect the rights of teachers, where the percentages of those who deny their availability (i.e. 'do not agree' and 'do not agree at all') ranged between 61% and 67.8%; accordingly, we recognise that teachers complain of a lack of material and moral support. This has been confirmed by experts in the Jordan workshop when they put the lack of financial and professional incentives ahead of vulnerable environments, unlike their counterparts in the UAE and Yemen who classified financial and professional incentives as strongly available in their countries' environments. Whatever the reality of the status of enabling environments for the teacher, they remain in constant need of care and modernisation and efforts must be made to remove the obstacles which can cause teachers' frustration and thus their failure to deliver their educational message.

Violence at school has become a widespread phenomenon not only in Arab schools but almost across the whole world

TABLE 5-48

Teachers' opinions on available support (%)

	Fully Agree	Somewhat agree	Do not agree	Do not agree at all
(a) The educational system provides facilities for teachers to continue their education while in service.	15.5	27.4	39.6	17.5
(b) There are centres near the school for training teachers and I can join them whenever I feel the need.	12.3	16.5	35.8	35.4
(c) The state offers incentives for highly competent teachers.	15	19.9	30.5	34.6
(d) The state provides many opportunities for in-service training to improve the level of education.	15.5	47.4	23	14.1
(e) The state provides training for novice teachers (or new teachers).	32.8	43.5	13.5	10.2
(f) The state provides teachers with salaries that ensure them a decent living.	11.9	20.3	27.5	40.3
(g) There are systems and institutions that protect the rights of teachers.	14.2	24.8	24.1	36.9
(h) The state provides teachers with in-service training system on demand.	11.9	35.4	30.7	22

TEACHERS' OPINIONS ON SUPPORT PROVIDED FOR STUDENTS

While the majority of students represent a heterogeneous mix, both in terms of their mental abilities and on the cultural level of their families or social environment, the school must provide equal opportunities for each student by following a distinctive approach that takes into account the needs of students and provides them with the support they need in order to be a fair and equitable environment. However, through the responses of teachers, it seems that this demand is still out of reach for Arab schools; the percentage of those who assert the existence of constant support for students did not exceed 43.1% in the best cases, particularly for talented students. If we are satisfied with the percentages of those who assert the existence of support 'always or sometimes,' this should not blind us from the presence of schools where there is no support 'at all' for many needy cases, such as those with learning difficulties (approximately 25%), talented students (approximately 26%), and those with social and psychological problems (46.9%). This means that there are categories of students threatened by exclusion, simply because they differ in a certain characteristic from the rest and do not find an environment that takes care of them and helps them solve their problems and overcome difficulties.

Whatever the reality of the status of enabling environments for the teacher, they remain in constant need of care and modernisation and efforts must be made to remove the obstacles which can cause teachers' frustration and thus their failure to deliver their educational message

We would like to point out that the teachers' attitudes varied with respect to the issue of absenteeism among teachers. While 37.6% acknowledged the existence of a permanent system to compensate for absent teachers, 34.8 % of the teachers denied it completely. In fact, the reasons and severity of this problem may differ from one person to another and from one setting to another, but its implications remain negative on the level of academic achievement. Besides the material cost and waste of time incurred by the group, the absence of teachers contributes to creating a discrepancy between students enrolled in the same educational level, which may lead to delays and accumulation of difficulties in subsequent levels (i.e. a class may contain students who have completed each subject of the previous level and others who have not completed it because of a teacher's absence for some reason).

TEACHERS' OPINIONS ON THE IMPORTANCE OF EDUCATION PRACTICES

Teachers expressed interest in almost all kinds of educational practices, and their responses did not reflect as much difference in type as in degree. In other words, they did not exclude or favour a certain method or approach; rather, most responses concentrated in the category of 'very necessary' except for the two ideas: "Following up students step by

TABLE 5-49

Teachers' opinions on support provided to students (%)

	Always	Sometimes	Rarely	Never
(a) The school offers assistance to students who complain of facing difficulties while studying.	34.8	40.3	13.8	11.1
(b) The school offers incentives for outstanding students.	43.1	30.8	16	10.1
(c) The school has a system to compensate for absent teachers.	37.6	17.6	10.1	34.7
(d) The school has specialists who help teachers deal with the difficulties faced by students, whether they are physical, psychological or social.	31.9	21.2	13.1	33.8

step in all the activities they are assigned to accomplish” and “obliging students to memorise lessons.” As for the practices that received the highest degree of importance, they include “encouraging students to interact with the teacher,” followed by “training students to solve problems” and “teaching students social principles and values.” But when comparing these trends on the importance of activity with those related to the practice of a number of methods and activities, we see a gap between what is expressed by teachers as important and what they acknowledge to practice in reality. For example:

- 88.3% of the teachers (see Table 5-50) acknowledge the maximum necessity of interaction between them and students compared to 69.8% who declare that they practice this in all classes (see Table m-6 in the Annex).
- 75.8% acknowledge the maximum necessity of training on problem solving versus 31.6% who declare that they practice this in all classes.

Certainly, there are many factors that can explain this disparity between teachers’ perception and actual practice. An example of this is the absence of good preparation

which enables the teacher to master the mechanisms of application, as admitted earlier by teachers themselves, as well as the adoption of pedagogical regulations that limit discretion and initiative, not to mention the lack of adequate working conditions (e.g. overcrowded classes, lack of teaching aids, etc.).

TYPES OF ACTIVITIES PRACTICED BY TEACHERS AND THE WEEKLY TIME ALLOCATED FOR EACH OF THEM

A comparison between the time allocated for routine educational and pure administrative activities and the time allocated for support activities revealed precedence in favour of the former, which means that teachers, according to their statements, devote most of their time to activities related to their daily work. This is considered a negative indicator if we look at it from the perspective of the characteristics of the teacher required for the knowledge society. The skills needed by the future generation cannot be secured by teachers who spend most of their time in routine educational

Teachers expressed interest in almost all kinds of educational practices, and their responses did not reflect as much difference in type as in degree. In other words, they did not exclude or favour a certain method or approach

TABLE 5-50

Teachers’ opinion on the importance of education practices (%)

	Not necessary	Somewhat necessary	Very Necessary	Do not know
(a) Training students to analyse diverse information.	2.9	25.1	71.6	0.4
(b) Training students to think critically.	3.8	27.0	66.1	3.1
(c) Urging students to work independently and take initiatives.	3.9	32.7	61.4	2.0
(d) Helping students conduct research.	3.7	42.6	51.9	1.8
(e) Training students to solve problems.	1.4	20.7	75.8	2.1
(f) Helping students to memorise rules and laws of scientific material.	3.3	32.0	62.0	2.7
(g) Encouraging students to interact with the teacher.	1.4	9.0	88.3	1.3
(h) Following students step by step in all the activities they are assigned to accomplish.	10.1	49.3	39.0	1.6
(i) Accustoming students to self-assessment practices.	2.2	32.7	64.1	1.0
(j) Accustoming students to teamwork.	2.5	27.4	69.1	1.0
(k) Teaching students social principles and values.	4.5	20.1	74.0	1.4
(l) Obliging students to memorise lessons.	19.0	53.0	26.4	1.6

TABLE 5-51

Types of activities practiced by teachers and the weekly time specified for each (%)

	Nothing	Less than an hour	1 to 2 hours	3 to 4 hours	More than 5 hours
(a) Planning and preparation of lessons.	2.3	18.4	19.1	24.0	16.2
(b) Correcting students' homework.	2.7	12.8	32.2	27.6	24.7
(c) Attending administrative meetings.	9.7	44.3	37.2	6.5	2.3
(d) Holding interviews with parents.	30.3	48.5	14.7	5.7	0.8
(e) Organising work with students (e.g. in clubs, support classes, etc.)	41.0	26.1	23.7	7.4	1.9
(f) Activities to improve professional performance (e.g. attending lectures, reading journals, etc.)	13.8	27.1	36.1	13.8	9.2
(g) Participating in an educational production (e.g. writing books, developing programmes, etc.)	48.8	19.8	16	9.6	5.8

activities wherein they repeat themselves, but by active teachers who are familiar with developments related to their field of work and who actively participate in developing educational action.

TEACHERS' ASSESSMENT OF THEIR ABILITIES TO ENABLE STUDENTS TO ACQUIRE VARIOUS REQUIRED SKILLS

When comparing teachers' responses on the importance of particular educational

practices with their responses on their ability to apply them, we discover a new disparity which appears this time between the degree of importance they attach to educational practices associated with the cognitive skills required by the future generation and their ability to enable students to acquire such skills. While most of the answers to the question of the importance of such practices were concentrated in the category 'very necessary,' their answers to the question related to the assessment of their abilities were concentrated in the category

The skills needed by the future generation cannot be secured by teachers who spend most of their time in routine educational activities wherein they repeat themselves

TABLE 5-52

Teachers' assessment of their abilities to enable students to acquire various necessary skills (%)

	Limited ability	Moderate	Strong ability	Do not know
(a) Analysing diverse information	17.5	51.8	26.9	3.8
(b) Applying critical thinking	21.4	52.7	20.8	5.1
(c) Taking initiatives	20.2	51.6	24.8	3.4
(d) Conducting research	21.2	46.5	29.6	2.7
(e) Solving problems	18.8	50.0	27.1	4.1
(f) Using the learned knowledge in different situations	17.6	44.5	31.4	6.5
(g) Memorising the rules and laws of scientific material	9.6	38.8	45.8	5.8
(h) Working independently	21.5	46.5	26.0	6.0
(i) Memorising lessons	14.4	43.9	37.7	4.0
(j) Committing to lifelong learning	25.0	38.8	24.1	12.1
(k) Working in a team	17.0	44.0	36.5	2.5
(l) Planning for the future	25.2	37.6	27.7	9.5

‘moderate ability’. For example:

- While 75.8% of teachers considered the skill of problem solving ‘very important’, only 27.1% declared their ‘full ability’ to enable students to acquire it (see Table 5-50);
- While 66.1% of teachers considered the skill of critical thinking ‘very important,’ only 20.8% declared their ‘full ability’ to enable students to acquire it; and
- While 71.6% of teachers considered the skill of analysing information ‘very important,’ only 26.9% declared their ‘full ability’ to enable students to acquire it;

It is noted that the highest percentage in the category ‘strong ability’ was 45.8% concerning the ability to “enable students to memorise the rules and laws of educational material,” i.e., the traditional task of the teacher. These declared trends can be considered an indirect confession which explains the disparity between the importance of practice and the extent of its application and the poor level observed in the various targeted skills of students. Consequently, this issue calls for intensifying efforts to review and develop teacher training programmes to be more responsive to the knowledge society’s requirements.

TEACHERS’ ASSESSMENT OF THEIR TECHNOLOGICAL CAPABILITIES AND SCOPE OF USE

As stated by teachers, the technological skills of a significant proportion of

the responding teachers (40%) are still below the desired level (see Table m-9 in the Annex). Of those who possess these skills, only 68.6% use them for educational purposes (see Table m-10 in the Annex).

When examining the percentages in Table (5-53), we note that the use of technology is more focused on activities related to the preparation of lessons. The communicative role of technology still needs to be reinforced, especially in light of growing promotion of the concepts of the ‘virtual school’ and ‘distance learning’. Undoubtedly, the rationalisation and utilisation of technology to serve learning requires double efforts by both the teacher to develop his/her skills and the institution to provide equipment and training necessary to facilitate the integration of technologies into the educational process.

ANALYSIS OF FACTORS AFFECTING STUDENTS’ PERFORMANCE IN SKILLS AND VALUES

Analysis of the average performance of students by gender

In general, the results revealed the superiority of females in all skills with statistically significant differences in most cases, which agrees with the results of other international studies. If we go back to the two studies of TIMSS and PISA, we find them announcing the same phenomenon in several Arab countries.

TIMSS 2007, science: for example,

The communicative role of technology still needs to be reinforced, especially in light of growing promotion of the concepts of the ‘virtual school’ and ‘distance learning’

TABLE 5-53

Purposes of teachers’ use of technology (%)

	Yes	No
Searching for educational curricula	91.5	8.5
Preparing lessons	83.3	16.7
Choosing exercises and activities	85.1	14.9
Consulting with other colleagues	68.8	31.2
Communicating with students	66.8	33.2

the results concerning the eighth grade showed that males performed better than females in Syria and Tunisia, while females performed better than males in Egypt, Palestine, Saudi Arabia, Jordan, Bahrain, Kuwait, Oman and Qatar, with a statistically significant difference.

PISA 2006: the analyses of literacy skills showed that females performed markedly better than males in most of the participating countries, reaching 55 points in Jordan and 66 points in Qatar.

Below are the details of the comparison between the genders in the current research:

COGNITIVE SKILLS

We note that females are ahead of males in all cognitive skills, with the exception of the skill of using technology. This superiority has already been revealed in several other studies. Many researchers attribute this to the high degree of motivation among girls who consider study as the main entrance for breaking free of cultural and social restraints, and the key to self-realisation in a society where males have the upper hand. As for the advancement of males in the skill of using technology, this can be explained by the greater opportunities available to males to use it, whether at home or in internet cafes, which may not be equally available to females. A report by UNESCO states that females are often excluded from using technologies in the same way as they were and are excluded from schools in some regions. In 2001,

females represented only 22% of internet users in Asia, 38% in America, and 6% in the Middle East (UNESCO, 2004).

CONATIVE SKILLS

We note that females were superior to males with statistically significant differences in the two skills of self-esteem and planning for the future, contrary to the skill of learning motivation in which males were superior but without a statistically significant difference. In this respect, differences remain significant when considering all skills, which confirm the overall superiority of females. This may be attributable to a change in upbringing methods which are now giving girls the same opportunities after being limited for a long time to investing primarily in males, which boosted their confidence and pushed them to pay attention to the future and their responsibility for caring for the family.

SOCIAL SKILLS

We note that females come ahead of males in the two skills of communicating with others and teamwork, unlike the skill of participating in public life where males come first but without a statistical significance. The difference becomes significant and expands more when considering the entire pool of skills, which again underlines the overall superiority of females. The result seems natural as studies have demonstrated the communication capabilities and tactfulness

A report by UNESCO states that females are often excluded from using technologies in the same way as they were and are excluded from schools in some regions

TABLE 5-54

Comparison of students' performance averages in cognitive skills by gender

Skills	Males	Females	Significance Level at 0.05
Information processing (up to 25 points)	9.26	10.50	in favor of females
Written communication (of 25 points)	3.92	6.27	in favor of females
Problem solving (of 25 points)	6.46	6.68	in favor of females
Use of technology (of 25 points)	11.36	10.69	in favor of males
Aggregate cognitive skills (of 100 points)	31	34.33	in favor of females

TABLE 5-55

Comparison of students' performance averages in conative skills by gender

	Males	Females	Significance level at 0.05
Self-esteem (of 25 points)	20.46	20.77	in favor of females
Learning-motivation (of 25 points)	18.93	18.80	no difference
Planning for the future (of 25 points)	4.21	5.09	in favor of females
Aggregate conative skills (of 75 points)	38.74	42.06	in favor of females

enjoyed by females, making them better able to communicate and integrate into collective action. As for participation in public life, it seems a male's domain though no significant difference is demonstrated. Undoubtedly, the cultural factor plays a major role in this respect.

VALUES

Just as for skills, female students showed an edge over male students in all values; a statistically significant superiority. When comparing the overall results of values, the difference remains significant in favour of female students. From another angle, we

note that the cognitive values have the strongest presence in males comparing the other values, whereas the conative values take the lead in females. This recalls the traditional image or classification of capabilities whereby reason is attributed to men and emotion is attributed to women.

ANALYSIS OF RESULTS IN LIGHT OF THE ENABLING FACTORS

Starting with factors covered in the students' questionnaire, enabling environments can be elaborated using the following factors:

1. Family composition: an integrated family

We note that females come ahead of males in the two skills of communicating with others and teamwork, unlike the skill of participating in public life where males come first but without a statistical significance

TABLE 5-56

Comparison of students' performance averages in social skills by gender

	Males	Females	Significance level at 0.05
Communication with others (out of 25 points)	16.51	17.62	in favor of females
Teamwork (of 25 points)	12.96	14.67	in favor of females
Participation in public life (of 25 points)	13.69	13.34	no difference
Aggregate social skills (of 75 points)	37.62	41.34	in favor of females

TABLE 5-57

Comparison of students' performance averages in values by gender (From 1 to 5)

Values	Males	Females	Significance level at 0.05
Cognitive	3.92	4.03	in favor of females
Conative	3.85	4.06	in favor of females
Social	3.65	3.71	in favor of females
Universal	3.74	3.99	in favor of females
Aggregate	3.78	3.94	in favor of females

(father, mother and children) or a disintegrated family (the absence of the father or mother because of divorce, death or migration)

2. Father's level of education: the highest level of education reached by the father
3. Mother's level of education: the highest level of education reached by the mother
4. Family's follow-up on child's study: the presence or absence of follow-up and care of the child's school affairs by family
5. Family's financial well-being: Family ownership of housing, furnishing, and equipment.
6. Household educational well-being: Facilities and aids provided by the family to help student in his/her studies
7. Educational well-being of the local environment: Facilities and aids available to the family and school in the surrounding environment that help student in his/her studies
8. Educational well-being at school: Facilities and equipment provided by the school to help the student in his/her studies
9. Family upbringing pattern: Type of communication and treatment prevailing in the family, democratic or authoritarian

When examining the impact of these variables on skills and values by using regression analysis, we observe different impacts with varying degrees of importance from one skill to another and from one value to another (see Table m-20 in the Annex). The results confirmed the theoretical concepts and analyses introduced by the report in both the second and third chapters concerning patterns of family upbringing and effectiveness of enabling environments.

The analysis showed that the higher the level of parents' education is, the more democratic the atmosphere will be in the family, ensuring the student will get the attention he/she needs. Also, the more accessible educational facilities are at home, school and the local environment, the higher the acquisition of skills and values

will be. Nevertheless, an exception could occur which is seen in the emergence of the negative impact of the financial welfare variable on all values.

However, avoiding conclusiveness and generalisation, this latter result can be explained by observing that family extravagance is accompanied in many cases by a decline in the parents' role in the child's upbringing (considered by some as a kind of parental resignation). The parents may pay for other people to follow up with children's daily and education affairs which weaken supervision and leads to children having mixed values (see the analysis relating to the pattern of upbringing in the wealthy families - Chapter 3 of the General Report).

However, it should be noted that though these variables are important, they do not explain all the differences we have observed among students, i.e. they alone do not determine the degree of skills and values acquisition, whose impact scores range between 5.4% and 14%. This result is similar to that revealed by the TIMSS study, which showed that indicators of the quality of educational environments in Arab schools were not poor, and would actually sometimes exceed international indicators. Nonetheless, the academic achievement of Arab students has remained weak over time, which indicates that educational reform programmes have paid off in providing the necessary equipment for teaching and learning at school, but their positive impact on academic achievement is still very limited (see the policies of reforming education in Arab countries - Chapter 2 of the General Report). This means that there are other factors involved in the process of enabling students that have not been considered by the present study. Perhaps the most important are those directly related to the learner, such as learning strategies and the type and level of motivation and ambition, as well as factors related to parents' economic and social conditions, not to mention the impact of widespread ICT.

The analysis concludes that the family,

We note that the cognitive values have the strongest presence in males whereas the conative values take the lead in females

with its available material and educational facilities and follow-up of children, can play an important role in enabling them to acquire basic skills. This underlines the urgent need to develop programmes to cognitively empower the Arab family to undertake a positive role in the upbringing process, and to establish a genuine partnership between the family, school and various actors in society. In this context, lessons could be learned from other countries' experiences such as the initiative launched by the American Association for the Advancement of Science under the name 'Science Everywhere'. This programme aims to spread awareness of the value of scientific knowledge among families in order to support the school's efforts in teaching the sciences to their children. (Visit: www.scienceeverywhere.org)

SOME CONCLUSIONS AND GENERAL RECOMMENDATIONS

When considering the scale of readiness adopted by the present research, a deep gap was seen between the current level of cognitive skills of tested students and the knowledge requirements for accessing the knowledge society, unlike social and conative skills (except for 'planning for the future') in which students' performance was better. This calls for an urgent review of existing educational systems in order to guide their objectives, practices and tools of work towards the future. Additionally, the educational approaches based on encyclopaedic compartmentalisation, automatic memorisation, and superficial comprehension of content must be overcome as they lead to the temporary achievement of collecting information which expires when the test is over. This situation will not be overcome except by adopting an advanced educational system that supports thinking, careful planning and an active search for information, in addition to working to emphasise the practical dimension of knowledge and the functional transfer of acquirements

in daily life.

For values, the situation does not seem bad, as students have shown a high level of readiness to access the knowledge society. But it is worth mentioning that the measurement of values raises a methodological problem that should be taken into account so as not to slip into erroneous interpretations. To illustrate, we only measure the attitudes and values as stated, not actually practiced, by students, and therefore whatever the degree of students' approval of or interest in a value, this does not necessarily mean that they hold such a value and act according to it. Here lays the difficulty referred to by UNESCO in its Education For All (EFA) Global Monitoring Report which monitored two indicators targeting the quality of the education system. The first indicator is represented in the extent of the learner's possession of a system of knowledge and concepts about the universe, humanity and life, and the degree of development achieved by the learner thereof. The second indicator is the system of values held by the learner after going through the learning experience. It should be noted that the first indicator is easy to measure and quantify while the second is difficult to measure and quantify (UNESCO, 2004).

In general, the present study emphasised the findings demonstrated by previous studies in relation to "the growing sense of dissatisfaction with the educational environment" in Arab countries. Despite what is stated in their referential texts (e.g. visions, approaches and plans) of the keenness to keep up with scientific and technological developments and modern educational principles, the reality is at a standstill, indicating the existence of a huge gap between 'objectives' (input), 'practices' (processes), and 'gains' (output). Undoubtedly, this huge gap will never be bridged unless the message of the education system is reconsidered: Which system for which future? That is, the message of tomorrow's education system needed by the future generation goes beyond mere

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‘provision of knowledge’ and ‘keeping up with changes’. (This is a traditional role which this system can no longer claim for itself due to the multiplicity of competitive means and channels). Its message should involve higher and more effective functions represented in ‘producing knowledge’ and ‘leading transitions.’ According to some intellectuals, we need a ‘pre-emptive’ not an ‘adaptive’ system.

The study of perceptions of both students and teachers revealed the ‘collapse of confidence in the school’, in the content it provides, and in its ability to prepare the young for tomorrow’s world in light of many changes. This calls for a deep analysis of the components of the school environment, including curricula, regulatory laws, and systems of relations in order to become a truly student-friendly environment, which embraces rather than repels. The school should not only teach but also educate, raise and prepare young people for living in the knowledge society we aspire for. This end cannot be achieved except by laying the foundations for a school life dedicated to democratic values, mutual respect and unequivocal belief that the success of the education enterprise is a shared responsibility wherein the government, private sector and civil society organisations collaborate to restore young people’s confidence in science and knowledge as a factor in the success of both the individual and the community.

The tangible lack of technological skills among students and teachers alike would pose an important question about the prospects for integrating ICT in education, and the ways to rationalise their use in order to play a real role in knowledge acquisition by new generations. The arrival of new information and communications technologies was heralded as a revolution for the world of learning and fired the hopes of many (UNESCO, 2003). However, the current results and other reports have revealed that ICTs are still far from fulfilling their promises. Perhaps the most important reasons behind this are: (a)

The Arab educational library lacks adequate education-learning software responsive to students’ needs and mental and class levels, and (b) many of the students and teachers do not possess the linguistic abilities necessary for using and benefiting from these technologies. Here stems a need to improve the quality of teaching foreign languages to provide students with the technical and scientific terminology and concepts they need to access, understand and use knowledge, but without neglecting the Arabic language and encouraging its use in scientific writing.

Undoubtedly, developing the means for engaging in the knowledge society requires the provision of qualified teachers who possess the educational knowledge and skills that help them carry their message to the fullest. But this alone is still not enough, as the teacher must be able to exercise reflective thinking and self-criticism in order to diagnose his/her needs, and thus improve results. Put differently, teacher training institutions today are in need of a new culture that goes beyond the concept of ‘fully-prepared teacher’ to the concept of ‘continuously-prepared teacher,’ as without doing so the task of preparing the young for the future will remain in the hands of teachers inspired by the content and tools of the past. The tremendous scientific and technological progress experienced by the current era calls for changes in roles and working methods. Therefore, it is unreasonable for ‘conservative teachers to remain with their traditional perceptions on the teaching profession and its goals and requirements, and continue to exercise their role steadily in the light of educational theories outpaced by events. This requires placing the pre- and in-service training of teachers in the context of a continuing process of updating, in addition to allocating the necessary human and material resources, and providing sufficient (financial and professional) incentives to ensure teachers’ involvement and benefit.

The difficulty we faced in locating performance data to compare with the

findings reached by the present study made us resort either to theoretical analyses or to the findings of national or international studies, requiring methodological precautions. This presents an urgent need to found Arab research traditions and invite regular regional evaluation research projects that provide a quantitative and qualitative database accurately diagnosing the Arab reality and facilitating sound modification decisions. The results of such studies should be activated and utilised to understand and improve current conditions. It is imperative to acknowledge that despite the participation of Arab countries in a number of international assessments, their method of handling results is still negative or superficial with much sensitivity among themselves (e.g. they pay more importance to the Arab ranking than the international ranking and knowing the reasons for failure). Reports often end up in the archives of Ministries of Education. As for national studies, most are dominated by quantity (i.e. quantitative indicators) at the expense of quality indicators: Quality of Arab students, quality of the outcomes of educational development programmes, quality of Arab teachers, quality of Arab schools as attractive, educational institutions, and other quality indicators.

Finally, although there are efforts in various Arab countries and at several levels to prepare young people for the requirements of the present time, the reform process of relative systems, topped by educational systems, still needs great will, effort and hard work. This is because the reform process is complicated and closely linked to several other sectors (e.g. economy, health, etc.), while there is a wide gap between the current situation and what should exist. In addition, it is a collective responsibility, and requires the concerted efforts of all concerned parties: decision-makers, experts, researchers, educators, parents, and all members of civil society, within a framework of effective partnerships to promote a system of preparing the young with all its components, including the family system and the educational system, and place it on the right track.

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