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Exploring the Impact of Reforms to the Moroccan Vocational
Education System: A Policy Analysis

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Abstract

In 1984, Morocco implemented an ambitious reform of its vocational training (VT) system, with the main goal of increasing youth employment by making the system more adaptive to the constantly evolving needs of the labour market. We analyze three types of programs that were implemented as part of these reforms using data on graduates from urban vocational training facilities who completed their studies in 2000. While we find that both the privatization of vocational training and policies designed to encourage small business formation were largely ineffective, we show that participation in a traineeship after graduation has a lasting and strongly positive impact on subsequent labor market outcomes. We provide evidence that these results are robust to correction for selection by estimating the average treatment effect of the programs following Imbens (2004).

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1. Introduction

High unemployment among youth, and recent graduates in particular, is endemic to the countries of the Middle East and North Africa (MENA) region. The average rate of youth unemployment in this region at 26% is nearly half again as large as the next highest region of Sub-Saharan Africa where youth unemployment is “only” 18%. And in several countries of the MENA region, the unemployment rate is staggeringly high. Indeed, both Algeria and Palestine have unemployment rates close to 40 percent and Tunisia has a rate just over 30 percent (Assaad and Roudi-Fahimi, 2007).

While the short-term economic, emotional and psychological impacts of this unemployment can be quite devastating, there are also important long-term effects for the future economic and political stability of the region. On the one hand, as this youth unemployment is heavily concentrated among recent graduates of secondary schools and higher education programs, it stunts the skill development of these youth by denying them opportunities to apply their education. On the other hand, this unemployment may result in both the political and social exclusion of this generation of educated youth. Indeed, without access to employment these youth remain dependent on their families and remain at home unmarried until they can find employment (Middle East Youth Initiative, 2007).

Recognizing the severity of this situation, a number of countries in the MENA region are developing programs to help alleviate the problem. While a variety of policies are being considered, they typically focus on measures to either improve the efficacy of education by improving curriculum and access and by increasing the flexibility of the

labor market. Generally these educational initiatives try to alleviate skill mismatch between the educational system and labor market by providing readily applied skills while efforts to increase turnover in the labor market are intended to improve access for recent graduates. An example is Iran where various reforms of the vocational education system have attempted since the late 1990s and a variety of financial incentives for small firms to form and join the formal sector have been recently implemented (Egel and Salehi-Isfahani [2007]).

Unfortunately there is little available policy analysis to help guide the development of these types of programs, despite the fact that similar policies have been attempted in the recent past in the region. Indeed in Morocco, a variety of reforms to the educational and labor markets were attempted throughout the 1980s and 1990s. One major aspect of these was a series of policies designed to reform various aspects of the Morocco's vocational training system.

During the 1980s and 1990s, in response to a rapidly rising unemployment rate, the Moroccan government enacted several of policies designed to improve the efficacy of technical and vocational training. One effort was the expansion and improvement of vocational training programs in 1984, which was designed to assist youth in gaining access to the private labor market by providing them with skills that were practical and appropriate. Later extensions of this program include a co-operative training program beginning in 1996 that sought to involve students in the private labor market during their vocational schooling and an apprenticeship program. Additionally, policies designed to encourage recent graduates of these programs to form small businesses by providing tax

or other incentives were implemented in the 1990s (see Boudarbat and Lahlou [2007] for a more detailed review).

Here we use longitudinal post-graduation data for graduates' of vocational training in Morocco to analyze the efficacy of two specific reforms of the vocational training program. In the first case we focus on employment outcomes after the variety of program innovations that were attempted. Second, we explore the impact of policies designed to encourage recent graduate to set-up small enterprises in the formal sector.

In general, these policies seem to have been largely ineffective. Indeed, graduates of vocational training programs, whose programs were specifically designed to reduce unemployment by providing graduates with useful skills, are among the population groups who are the most exposed to unemployment risks. Data from the Moroccan labor force survey (LFS) indicate that in 2006 the unemployment rate was 34.8% among VT graduates with Specialization certificates, 21.8% among those with Qualification certificates and 15.6% among Technicians compared to a national average of 9.7%. Also, data from the Moroccan Department of VT show that about 40% of 2000 graduates were still unemployed in 2004 for a national average of 11.6% in the same year (Boudarbat, 2007).

And the extraordinary low take-up rates of policies designed to encourage self-employment among graduates is demonstrated by low take-up rates. Law 16/87, which was designed to encourage small business formation through a preferential tax program, was targeted to have approximately 1,000 participants annually. However, in practice

this program only had an average of 100 annual participants reaching a total of less than 600 youth during the first six years of its application.³

The high unemployment rate among recent graduates of vocational training programs is particularly perplexing in light of the fact that these programs were specifically designed to provide employable skills and they were very selective in choosing applicants with only around 20% of total applicants accepted. Importantly it seems that despite the training provided by these programs, familial connections still remain the strongest predictor of employment outcomes (Boudarbat, 2007; Montmarquette et al., 1996). Further, while these vocational programs do provide specific skills that are useful in a particular vocation, they are not very effective in preparing individuals for the realities of the private labor market. Graduates are unwilling to take low paying jobs that offer valuable experience and instead delay employment in hopes of obtaining high wages that they feel their education entitles them to.

Here we also provide evidence suggesting that the failure of 16/87, which was designed to provide incentives to small business formation in the formal sector, can be largely attributed to two factors. The first is that the program seems to have been poorly publicized as nearly 80% of the eligible individuals were simply unaware that it existed. On the other hand, and perhaps more importantly, this program was simply unable to adjust for the increased costs associated with joining the formal sector.

Understanding these programs may also help us understand why individuals choose to locate in the informal labor market.

³ Other programs which provide technical and financial assistance to young entrepreneurs are also far from achieving their objectives. For instance, the program "Moukawalati" (my enterprise) aimed at attracting university graduates toward self-employment, participated in the creation of 600 small businesses so far, whereas the initial objective was creating 30,000 enterprises by 2008. Hence, the realizations are only 2% of the expectations.

2. Description of the Policy Measures

2.1 Increasing youth participation in vocational training: the 1984 reform

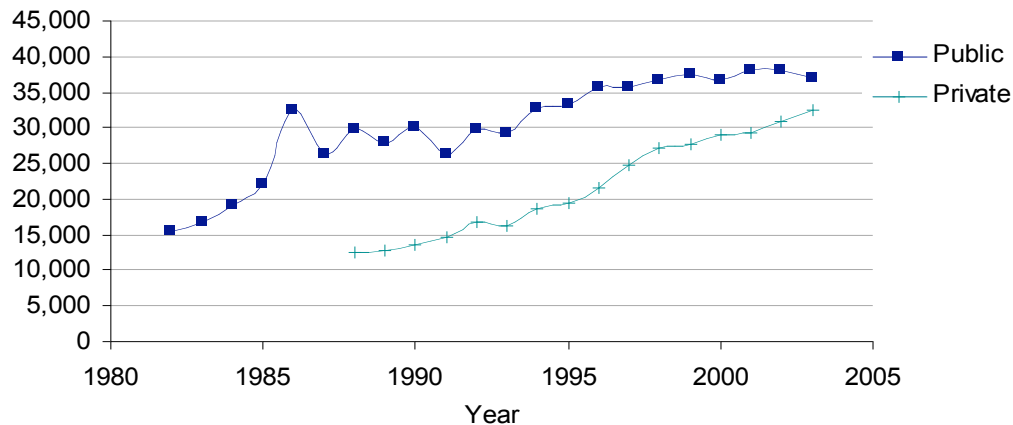
In 1984, the VT system underwent a crucial reform, whose goal was to make it a genuine tool for socio-economic development in a context marked by rising unemployment among graduates and high drop-out rates. One of the reform's main goals was the development of human resources and social promotion by providing training to a greater number of young people. At the same time, a qualitative goal was to better adapt the system to the constantly evolving needs of the labour market and to improve graduates' employment.

The first year of the reform (1984) saw a spectacular increase in the number of trainees, with 66% more than in 1983. A sustained growth rate was maintained thereafter in both public and private sectors (see Figure 2). The number of graduates from public VT centres (school-based and co-operative education only) increased by 3.5% on average per year between 1984 and 2003. The development of private sector training was even greater under the impetus of public authorities. The number of graduates from the private sector increased by 6.5% on average per year between 1988 and 2003. Moreover, the number of private training institutions reached 1650 in 2003, compared to only 584 in 1992, which corresponds to the net creation of about 100 institutions on average per year. If these trends continue, the private sector's training capacity will soon exceed that of the

public sector, a situation that is desired by the government, which is seeking to transfer the cost of training to individuals and their families.⁴

If training by apprenticeship and evening courses are taken into account, the annual number of graduates of all forms of VT reached 81,000 in 2002, which is an increase of 11% in a single year, and the government intends to increase further this number since it has set the goal (in November 2002) of training 400,000 young people between 2005 and 2007.

Figure: Evolution of Number of Vocational Training Graduates in Public and Private Sectors (school-based training and co-operative education only)



Source: Statistics from the Secrétariat d'État chargé de la formation professionnelle

By level of training, the number of graduates at the qualification and technician levels has stagnated somewhat from the mid-1990s onwards, whereas the number of graduates at the specialization and specialized technician levels increased continuously. The progression of the specialized technician level has been extremely strong. Since its

⁴ Training in public schools is fully subsidized, whereas students pay tuitions at private schools.

creation and up till 2003, the number of graduates at this level has increased by 26.2% per year on average. During the same period, the average annual growth rate for the number of graduates has been 4.8% for the specialization level, versus 1.9% for the qualification level, and barely 1.1% for the technician level. The specialization level, which the government at one point wanted to abolish, seems to be benefiting from the increase in children's enrolment rates, but also from the economy, which offers few advantages to the high qualification levels. As for the specialized technician level, it seems to be benefiting from the difficult employment situation of university graduates to attract large numbers of young people who are finishing their secondary studies, but also to enhance its importance within public programs.

The demand for VT in public centres is very high among youth. For example, in 2003, the demand by young people was 4.5 times greater than the spaces available in the public training sector. This high demand is partly explained by the fact that the training in public centres is entirely subsidized by the government, which allows young people to enjoy free training.

As regards girls' access to VT, there are few disparities in comparison to boys. Of all graduates trained between 1990 and 2003, 46% are women. In the private sector, 62% of graduates are women, versus only 35.1% in the public sector.

Parallel to the quantitative development, Moroccan VT system has experienced qualitative improvement in order to meet the needs of the labor market. The persistence of a high unemployment rate among graduates enticed the government to introduce new

forms of training, which favor training on the workplace and involves employers in setting programs and providing trainings.

2.2 Improving the quality of training: New forms of training

During late 1990s and early 2000s, the VT system experienced three new initiatives aimed at improving the skills of graduates by closing the gap between these skills and the needs of the labor markets. One common way to achieve this objective was increasing the share of the training that takes place on the (real) workplace.

a- Co-operative training

This form of training stipulates that at least half of the training period must be spent in a workplace and at least a third must take place in a VT centre. Thus, students receive a large part of their training in the workplace, which puts them in touch with the reality of the world of work and allows them to develop a profile that corresponds to the needs and specificities of businesses. Under these conditions, access to employment should become easier for co-operative education graduates.

The first co-operative education pilot projects started in 1993, but it was only in 1996-1997 (after Law 36.96 was passed) that this form of training was generalized across the country, with about a thousand trainees at the time. The number of trainees then increased to 16,240 in 2004-2005 and it is expected to reach 21,000 in the public VT sector by 2007-2008. However, despite this development, co-operative education does not seem to be positioning itself as a preferred form of training. Indeed, though co-operative education was set up before apprenticeship training, the second form seems to be more

appreciated, with its share in the training system (in terms of number of trainees) expected to increase from 12.5% in 2003 to 18% in 2007, versus 7.6% and 7.4% for co-operative training. High employment rates among apprenticeship training graduates could explain the growth in this form of training, set against the stagnation of co-operative education. However, it will have to be seen whether these trends will persist over time.

b- Vocational training by apprenticeship

The implementation of this form of training was aimed at facilitating youth employment, saving some arts and crafts trades which are dying and ensuring training that is adapted to the specificities of a rural environment for rural youths. Apprenticeship training is moreover considered to be a means for the social and employment integration of young people, in particular those who leave the education system too early or who do not meet the conditions of age or educational level required to have access to school-based or co-operative VT. It also involves developing and regulating a form of training which has always existed, by using the economic structure of small and medium-sized businesses/industries (SMB/SMI). Apprenticeship training has also been recommended by the *Charte nationale d'éducation et de formation* as a means leading to youth employment and as way to improve skilled labour in SMBs/SMIs.

Practically, at least 80% of the training period must be spent in a workplace, and completed with a period to at least 10% for general and technological training in a training centre. Thus, in apprenticeship training, the share of the training period that takes place in a workplace is higher compared to co-operative training, in which this share ranges between a minimum of 50% and a maximum of 67%. The training period varies

from one to two years according to the trades and qualifications of the apprenticeship training. The latter can lead to a diploma (specialization and qualification levels) or be qualifying only (a certificate that recognizes the skills acquired).

c- The skills-based approach

VT seems from now on to be oriented towards a new teaching method that draws on the skills-based approach (SBA). Thus, a large-scale project is being set up with the assistance of Canadian cooperation.⁵ The goal is to strengthen the links between the vocational training system and its economic environment by designing training programs based on the skills required by workers who are currently in the labour market. For the *Secrétariat d'État chargé de la formation professionnelle* (State Secretariat for VT), which is piloting the project: *“The SBA leads to defining the means of an appropriate material and educational organization (educational strategy, evaluation tools, infrastructure, human and material resources), and implementing, in the training institutions, training programs which allow their graduates to be immediately operational and to be able to perform tasks or activities given to them upon their entry to the labour market.”*

This approach was implemented in 2003 with a four-year experimental phase that included the setting up of five reference institutions related to the five training sectors: (1) textile/clothing industries, (2) tourism/hotel and catering industry, (3) tertiary (in particular information and communication technology), (4) mechanical, metallurgical and electrical industries, and (5) agriculture.

⁵ The Canadian International Development Agency granted CAN\$10 million worth of financial assistance.

A second phase, also four years long, will help to evaluate the first phase and generalize the approach to the entire vocational training system.

2.3 Improving graduates employment

Naturally, the abovementioned initiatives have the final objective of facilitating the transition between training and employment. In fact, they were dictated by the worsening of the employment of graduates of VT and of other education system components (see section 3).

One of the aims of the structural adjustment policies implemented in August, 1983 was to assign to the private sector a more important role in the economy, especially in the creation of jobs. Because of financial constraints, the public sector is no longer able to sustain its role as main employer of educated workers. Labor market policies developed since 1983 aim at surmounting problems that face graduates when they search for employment (for example, lack of information on the labor market and/or lack of a first professional experience). Self-employment was also (and is still) considering as one good option not only for those who cannot find paid work, but also for talented ones.

One main policy on this direction consists of granting loans at preferential interest rates to graduates who wish to start their own business.⁶ Unfortunately, these programs mainly favour highly educated workers (i.e., those with post-secondary education). VT graduates, especially those from low training levels were somewhat excluded. Yet, a law entitled 16/87 was designed exclusively for VT graduates. This program, implemented

⁶ Since late 1980s, these loans were granted under a program called “Young Entrepreneurs’ Loans.” A new integrated program called “Moukawalati” was implemented and includes selection of candidates and technical assistance for starting small businesses.

early 1990s, provides tax exemptions⁷ for young entrepreneurs holding vocational training diplomas. In addition, Law 16/87 listed 20 trades that could be carried out only by graduates holding vocational training diplomas or by experienced workers who succeed at professional aptitude tests. This regulation, which aimed at protecting graduates from competitiveness from uneducated workers or those trained on-the-job has never been implemented.

3. Data

Here we draw on data from two longitudinal surveys (the follow-up of VT graduates- FVTG) conducted by the Moroccan Department of Vocational Training to explore the apparent failure of these programs. Data are of 1993 and 2000 cohorts, each surveyed four years after graduation. The FVTG collects relevant information on the evolution of the situation of graduates on the labor market during the four years following their graduates. The main aim is to examine the factors which favor or slow down their access to employment. It also aims at gauging the graduates' opinions on the quality of the training compared to the reality of the workplace. Finally, the investigation grants a particular interest to self-employment among graduates. The 2004 study touched a sample of 6,381 graduates (i.e., 10% of 2000 graduates), of which 3,167 are girls and 90% are aged 20 to 30. The survey was carried out by direct interviews during the summer 2004. The questions about the evolution of the labor force status are retroactive covering the period going from July 1, 2000 to July 31, 2004.

⁷ Equipments bought to start the business are taxes free for VT graduates (the tax on added value is 20% currently). Also, businesses do not pay taxes for 5 years, then pay 50% during the following 5 years.

4. Situation on the labor market: High Unemployment among Vocational Training Graduates

Despite the aforementioned improvements to the system and many other initiatives over the past 20 years, graduates of VT system remain in a very precarious position on the labor market. For instance, Boudarbat (2007) shows that after 49 month of graduation, hardly 40% of 2000 female graduates and 60% of 2000 male graduates are employed. In addition, unemployment rate was 48.1% and 35.1% among female and male graduates respectively. The high unemployment rate among women might explain the fact that around 20% of them are out of the labor force.

Table 0: Status in employment

(a) By level of training

	Paid worker	Self employed	Unpaid family worker	Unemployed	Out of the labor force
Specialization	37.0	15.4	3.3	35.0	9.3
Qualification	37.2	6.6	3.4	39.9	12.8
Technician	46.3	5.0	2.3	33.7	12.7
Specialized technician	52.8	2.9	1.2	29.9	13.2
Total	41.6	7.3	2.8	36.1	12.2

(b) By field of study

Field	Paid worker	Self employed	Unpaid family worker	Unemployed	Out of the labor force
Administration	39.6	3.4	2.4	37.1	17.5
Textile	36.8	3.6	1.0	41.7	17.0
Industry	41.6	9.9	3.1	39.2	6.1
Construction	51.4	7.3	4.3	32.0	4.9
Handy craft production	26.5	8.4	2.1	46.3	16.8
(Handy) services	46.0	13.7	3.5	29.6	7.3

Tourism	52.6	1.7	1.4	30.7	13.6
Other fields	50.2	2.8	4.2	29.6	13.2
Total	41.6	7.3	2.8	36.1	12.2

Bouarbat (2007)'s study highlights the factors favoring or hindering employment of this population. Using a duration analysis applied to the length of unemployment before the first job, the author finds that training geared to informal activities offers a greater potential for employment. There are, however, factors non related to training which significantly affect the hazards of quitting unemployment. For example, social networks (personal connections) increase substantially access to employment, particularly for girls. In the same vein, the father's profession is instrumental, with children of managers and skilled trades are more likely to find employment. An early study by Montmarquette et al. (1996) on OFPPT graduates lead to very similar findings.

5. Low Take-up of Programs Designed to Encourage Small Business Formation

In Table 1 we document the low participation rate of individuals in the 16/87 program. Only 3.3% of all self-employed graduates participated in this programs. The insignificant proportion among graduates with Specialization certificates is explained by the fact that this group is (for unknown reasons) excluded from the program.

Table 1: Percent of self-employed graduates who received 16/87 benefits

Level	%
Specialization (*)	0.2
Qualification	3.2

Technician	8.8
Specialized	
technician	5.2
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Total	3.3

(*) Do not qualify for 16/87 benefits

The inefficacy of this law in reaching the target population is highlighted by the fact that nearly twice as many recent graduates of vocational programs claim to have received some type of public assistance, despite the fact that 16/87 was specifically designed to target these individuals. However, the rate of public assistance is still a very low 7% suggesting that there is much room for government policies in improving opportunities for financing, etc.

Table 2: Percent of self-employed graduates who received assistance from a public agency

Level	%
Specialization	3.5
Qualification	7.9
Technician	11.8
Specialized	
technician	5.8
Total	7.0

Interestingly, it seems that the low take-up of this program may be largely driven by ineffective publicity. Table 3 demonstrates that though about 20% of individuals were actively not interested in the program, nearly 80% of the eligible population was simply unaware of the program. However, this low rate of knowledge of the 16/87 program can not simply be attributed to a lack of information concerning public programs as seen in Table 4. Indeed, nearly three times as many graduates were aware of a public loan program designed to target recent university graduates (for which they were not even qualified).

Table 3: Reasons for not receiving law 16/87 benefits

Level	Did			
	Not informed	not qualify	Not interested	Other reasons
Specialization	84.0	0.6	15.4	0.0
Qualification	80.5	3.5	15.3	0.7
Technician	61.0	6.6	31.9	0.6
Specialized technician	47.1	2.9	50.0	0.0
Total	77.3	2.8	19.6	0.4

Table 4: Knowledge of Public Programs among Vocational School Graduates

Level	Loans for	Law	Self-
	young entrepreneurs	16/87	employment program

Specialization	40.0	8.0	13.8
Qualification	52.7	11.3	20.7
Technician	75.3	28.8	41.8
Specialized technician	80.2	35.4	47.8
Total	60.9	19.0	29.3

While a lack of information may have been a major impediment to the success of this program, another issue may have been a reluctance among these individuals to enter their new enterprise into the formal sector. Indeed, the program was designed to provide financial incentives for individuals to leave the informal sector which still composes the majority of small enterprises as seen in Table 6. For those 20% of individuals who were simply not interested in the program, it may be that the additional costs associated with joining the formal sector outweigh any potential benefits.

Table 5: Some characteristics of businesses

	Mean amount invested (MAD)	Mean number of created jobs
Received 16/87 benefits	73,766	2.3
Did not Receive 16/87 benefits	30,788	2.0

MAD: Moroccan dirham

Table 6: % of self employed engaged in informal activities

	%
Specialization	52.8
Qualification	78.1
Technician	66.7
Specialized technician	36.0
Total	64.4

6. The Efficacy of Private Vocational Facilities

(In presentation)

7. Impact of Traineeships on Labor Market Outcomes

(In presentation)

8. A Simple Model of Program Participation

(In presentation)

9. Correcting for Selection under Unconfoundedness

(In presentation)

10. Conclusion and Policy Implications

- In 2000, a new reform of the VT sector was implemented with a focus on approving apprenticeship programs. What do our results say about that?
- What programs are optimal?
- Are the results here extendable to the general population? Is there risk that too many trainees or apprentices will drive down the gains?

Selected references (to be completed)

Assaad, Ragui and Farzaneh Roudi-Fahimi (2007), "Youth in the Middle East and North Africa: Demographic opportunity or challenge?" *Population Reference Bureau Policy Brief*.

Bennell, Paul and Jan Segerstrom (1998), "Vocational education and training in developing countries: has the World Bank got it right?", *International Journal of Educational Development* Volume 18, Issue 4, Pages 271-287.

Bouarbat, Brahim (2007), « La situation des diplômés de la formation professionnelle sur le marché du travail au Maroc : une analyse sexo-spécifique à l'aide des modèles de durée » *Canadian Journal of Development Studies / Revue canadienne d'études du développement*, Volume 28, no 2, pp. 293-314.

Bouarbat, Brahim and Mehdi Lahlou (forthcoming), "Vocational Training in Morocco : Social and Economic Issues for the Labour Market" forthcoming in *Vocational Training in the 21st Century : A Comparative Perspective on Systems and Innovations in Ten Countries*, Gerhard Bosch and Jean Charest (eds.), Routledge Press.

Bouarbat, Brahim and Aziz Ajbilou (2007). "Youth Exclusion in Morocco: Context, Policies and Consequences," *The Middle East Youth Initiative Working Paper # 5*, Wolfensohn Center for Development and Dubai School of Government.

Friedlander, Daniel, David Greenberg, and Philip Robins (1997), "Evaluating Government Training Programs for the Economically Disadvantaged," *Journal of Economic Literature* 35:4, 1809–1855.

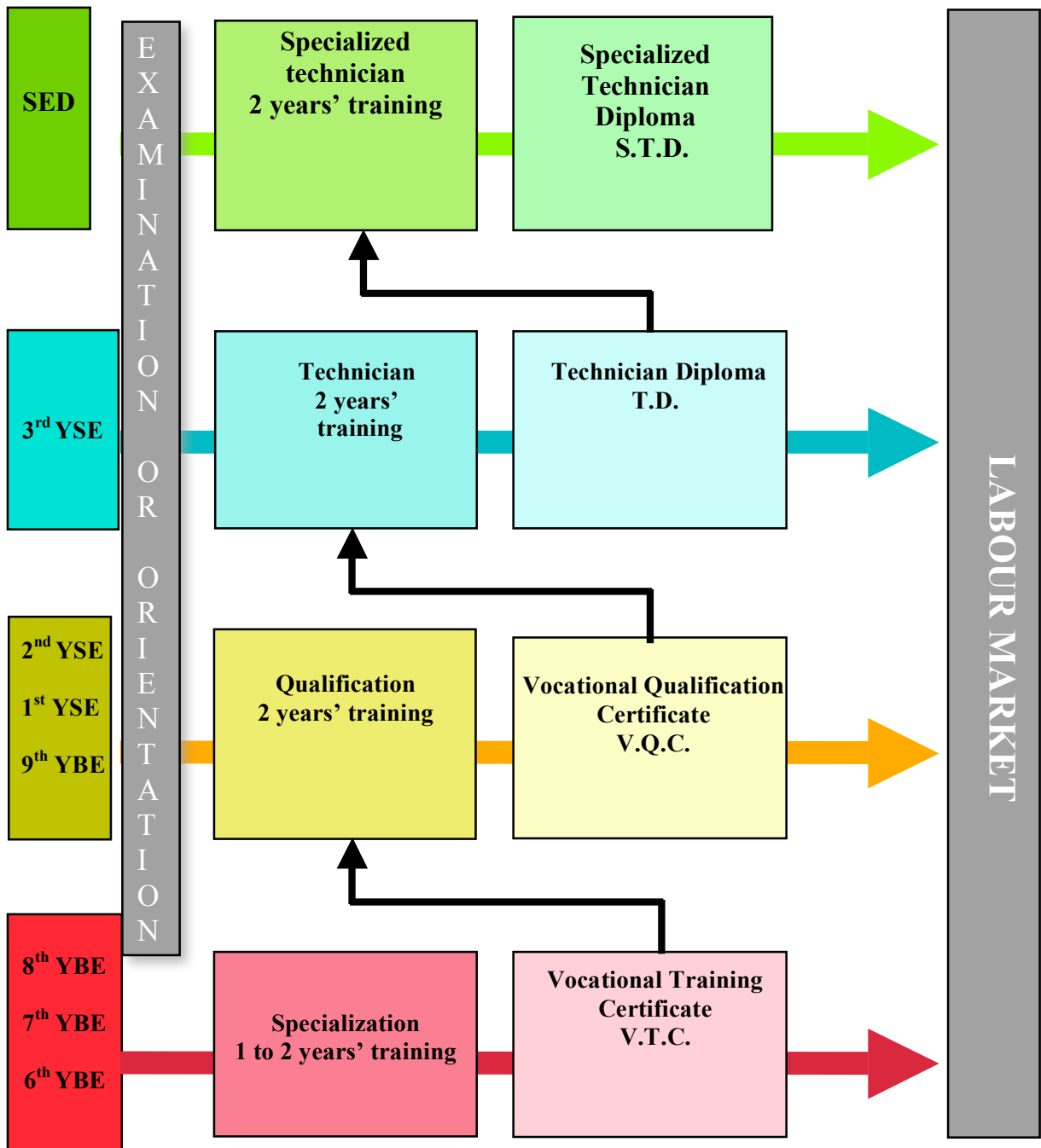
Imbens, Guido W. (2004). "Nonparametric Estimation of Average Treatment Effects Under Exogeneity: A Review," *The Review of Economics and Statistics*, MIT Press, vol. 86(1), pages 4-29, 06.

Montmarquette, C.; F. Mourji et A. Garni (1996). « L'insertion des diplômés de la formation professionnelles dans le marché du travail marocain : une application des modèles de durée. » *Région et développement*, no 3-1996.

Salehi-Isfahani, Djavad and Daniel Egel (2007). "Youth Exclusion in Iran: The State of Education, Employment and Family Formation," *The Middle East Youth Initiative Working Paper # 3*, Wolfensohn Center for Development and Dubai School of Government.

Secrétariat d'État chargé de la formation professionnelle, Maroc (2004). "Rapport d'activité, 2003"

Figure 1: Organization of Vocational Training in Morocco



YBE = year of basic education

YSE = year of secondary education

SED = Secondary Education Diploma

Source: Secrétariat d'État chargé de la formation professionnelle (2004)

