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Organization

INFORMAL APPRENTICESHIP IN THE MICRO AND SMALL ENTERPRISES (MSEs) ALTERNATIVE APPROACH



Canadian International
Development Agency

Agence canadienne de
développement international

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Foreword

Youth un- and underemployment remain one of Egypt's most pressing social and economic challenges. According to official statistics, 23.3% of young males and 48.5% of young females are unemployed. Only around every second, a student in Egypt enters general or technical higher secondary education, confining a large part of youth to acquiring on-the-job skills for the world of work, and increasingly so in the informal economy.

The workplace as a learning space generally tends to be undervalued in the Egyptian society, yet some occupations have preserved a learning culture by way of informal apprenticeship. This traditional form of skills acquisition is based on an agreement between a young learner, an apprentice, and an experienced craftsman, a trainer, to train for an occupation while working and learning side-by-side in the craftsman's business. The apprenticeship agreement is embedded in social norms and values of a community of practice, and has ensured skills transmission from one generation to the other. While under pressure for a variety of societal and political reasons, informal apprenticeship still constitutes an important source of skills acquisition and provides an accessible path to technical and vocational skills development for disadvantaged youth.

The ILO has commissioned Prof. Alia El Mahdi, Professor of Economics and Former Dean of the Faculty of Economics and Political Science, Cairo University, to conduct an empirical study to enhance understanding of how the informal apprenticeship system in Egypt functions. The study identifies the system's main weaknesses and strengths, people's motives to pursue an apprenticeship and draws conclusions for ways to help improve the system.

The findings of the study have been instrumental in designing technical cooperation projects to help upgrade informal apprenticeship; namely: the Decent Jobs for Egypt's Young People: Tackling the Challenge Together Project and the Combating Worst Forms of Child Labour Project in Egypt. The study also informs the global ILO work programme on upgrading informal apprenticeship, adding a North African country perspective to existing research and pilot project experience in West and East Africa.

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List of acronyms and abbreviations:

BOD	Biological Oxygen Demand	IDSC	Information and Decision Support Centre
CAA	Competent Administrative Authority	IEO	International Employers Organization
CAPMAS	Central Agency for Public Mobilization and Statistics	IFOAM	International Federation of Organic Agriculture Movements
CARE	An international NGO working in the development field in Egypt	ILO	International Labor Organization
CCIMD	Centre for Curriculum Development and Instructional Materials Development	IMC	Industrial Modernization Centre
CDM	Clean Development Mechanism	IPM	Integrated Pest Management
Cedefop	European Centre for the Development of Vocational Training	ITC	Industrial Training Council
COAE	Center of Organic Agriculture in Egypt	ITUC	International Trade Union Confederation
CP	Cleaner Production	LM	Labor market
CSDC	Construction Skills Development Council	MED TEST	A project funded by the United Nation Industrial Development Organization
CVT	Continuing Vocational Training	MoE	Ministry of Education
DfID	UK Department for International Development	MoH	Ministry of Housing
DNA	Designated National Authority	MoME	Ministry of Manpower and Emigration
EBA	Egyptian Biodynamic Association	MoT	Ministry of Tourism
EB-CDM	Egyptian Bureau	MoTI	Ministry of Trade and Industry
EC-CDM	Egyptian Council for Clean Development Mechanism	MPN	Mean Probable Number
EOA	Egyptian Center for Organic Agriculture	MSEA	Ministry of State for Environmental Affairs
EEAA	Egyptian Environmental Affairs Agency	NEAP	National Environmental Action Plan
EETEO	Egyptian Education, Training and Employment Observatory	NREA	New and Renewable Energy Authority
EIA	Environmental Impact Assessment	NSSP	National Skills Standards Project
EMU	Environmental Management Unit	RBO	Regional Branch Officer
ENCPC	Egyptian National Cleaner Production Centre	RE	Renewable Energy
ETPs	Enterprise Training Partnerships	SCHRD	Supreme Council for Human Resource Development
EU	European Union	SEAM	Support for Environmental Assessment and Management
EUREPGAP	Euro-Retailer Produce Working Group for Good Agricultural Practices (the global partnership for safe and sustainable agriculture)	SEKEM	An Egyptian organic farming initiative - the transliteration of a hieroglyph, meaning “vitality”
FAO	Food and Agriculture Organization	SFD	Social Fund for Development
GDP	Gross Domestic Product	TOE	Ton Oil Equivalent
GEAP	Governorate Environmental Action Plan	TTC	Tourism Training Council
GHG	Greenhouse Gases	TVET	Technical Vocational Education and Training Committee
GoE	Government of Egypt	UNEP	United Nations Environment Programme
		USAID	United States Agency for International Development



Introduction

Providing specialized vocational education and training to the growing workforce has been, from a theoretical standpoint and is still, the main responsibility of the Government of Egypt (GoE) through its various institutions. Besides the secondary public schools, the vocational training programmes and the specialized training centres belonging to the different ministries, there are several forms of public-private partnerships, as well as private sector initiatives that are concerned with improving the skills of the workforce.

However, despite all these formal institutions and efforts the existing scene in the labour market indicates that their impact is either limited, or the skills provided are rather modest. The main source of skills acquisition in the Egyptian industry is the micro and small enterprises (MSEs) sector.

Every year, around 750,000 persons enter the Egyptian labour market, and more than half a million of them are technical school graduates. This large number of eager youth seeks work with quite primitive skills. They encounter several difficulties: firstly a public sector that is not hiring them anymore; secondly a formal private sector that is highly selective with limited capacity to absorb workers; and finally relatively high unemployment rates. This leaves the informal private sector as the only sanctuary for the majority of new entrants to become either wagedworkers or self-employed/employers.

The following questions pose themselves: What kinds of vocational education and training institutions exist in Egypt? Why do they fail to deliver sufficiently trained graduates? Do the informal sector enterprises – through their apprenticeship system – are able to make-up for the lack of vocationally educated/trained young labour market new entrants? Is the informal apprenticeship system successful in providing them with the necessary modern and advanced skills? Is there any form of private-public co-ordination that helps raising up the standards of different occupations in the informal apprenticeship system?

In an attempt to understand the traits of the informal vocational apprenticeship, its mechanims, rules, inputs and outputs a field survey was conducted on a group of MSEs in Greater Cairo Region (GCR). The main objectives of the survey were to:

- understand the mechanims of accepting apprentices and the pertinent conditions;
- capture the details of the informal training system with regards to its duration, processing, evaluation and termination;
- trace the career path of the graduated apprentices in the labour market; and
- focus on the sort of co-ordination that exists between the SMEs, on the one hand, and the formal training institutions, on the other.

This paper is classified into five sections. After the introduction, the first section describes the methodology of the survey. The second section gives a review of the existing technical education and vocational training programmes and their role in skills’ development. The third section presents the main results of the survey. The fourth section gives a summary and conclusion, and the fifth concludes with policy recommendations.

The Methodology

The research tool used to assess the informal apprenticeship includes mutually supportive quantitative and qualitative methodology, which targets three different categories of employed persons for interviewing within each workshop:

- The master craftsman
- The skilled worker
- The apprentice

The survey includes three different questionnaires—one for each category. The three questionnaires were translated/revised into the Arabic local language.

1.1 Sample Selection and Preparation

The major objective of the “2009 Informal Apprentice Survey” is to gain knowledge about the institutional set-up of the informal apprenticeship systems. Four main trades from different sectors were selected:

1. Auto mechanic workshops
2. Textile and readymade clothes (RMC) workshops
3. Metal work workshops
4. Furniture/wood work workshops

These trades have a good potential for growth and development, and they basically rely on informal apprenticeship to transfer their skills to new generations of learners. They help increasing motivation, supply and demand for apprenticeship and returns on apprenticeship training.

The main concern in developing the sample design was to secure a sufficient number of interviews within each trade. To do so, five geographic areas were covered in GCR. The research team went to these areas to implement a quick listing of workshops with apprentices. It was required that the workshop should have employed at least five persons. The selected areas were:

- Shubra Elkheima - North Cairo
- Eldweka - East Cairo
- Attaba - West Cairo
- Elsalam (Herfyen City) - West Cairo
- 6th of October City - South Cairo

Based on the obtained workshop listings, a sample of 25 workshops was chosen from each trade. Within each workshop, three different interviews with different employed persons were required:

- Master craftspeople or owners (MC/O)
- Skilled workers
- Apprentices

1.2 Field Work

The field work contained the following two activities: i) Pre-test stage to test the questionnaire; ii) selection of the field staff. Data collection personnel were selected from staff nominated by the management of very well-known institutions; like the National Centre for Social and Criminal Studies, or from fresh graduates with prior experience in data collection. Table (A) shows the sample distribution according to geographic areas:

Table (A). Sample Distribution According to Geographic Area

Location	Frequency	of Craftsmen %
Shubra Elkheima - North Cairo	35	35.0
Eldweka - East Cairo	30	30.0
Attaba - West Cairo	15	15.0
Elsalam (Herfyen) - West Cairo	10	10.0
6th of October - South Cairo	10	10.0
Total	100	100.0

Table (B) shows the number of successful interviews according to main trade and work status of the interviewed persons.

Table (B). Successful Interviews According to Main Trade and Work Status of the Interviewed Person

Economic activity	Frequency	Number of master craftsmen	Number of skilled workers	Number of apprentices
Auto mechanic	25	25	22	24
Furniture/Wood work	25	25	23	24
Metal work	24	24	21	23
Textile and RMC	26	26	18	24
Total	100	100	84	95

Review of the main technical educational and vocational training programmes

Human resources development and skills improvement are considered high priority factors in tackling the challenges of unemployment in Egypt, especially youth unemployment. Currently, apprenticeship in the informal economy represents one of the main ways to skills development (ILO 2008). This trend is explained in light of the high capacity of the informal economy to absorb new entrants to the labour market and the limited capacities of the formal education and training systems to provide vocational education and training.

All studies reveal that the size of the informal economy has increased over the past three decades, and that it represents an important segment of the Egyptian economy. Informal employment represents a substantial part of total employment and has been growing during the last decades. According to El-Mahdi (2002; 2006) the number of informal wage workers went up from 2.3 million in 1988 to 3.3 million in 1998 and reached 4.4 million in 2006. It represents 67 percent of total private non-agricultural wage work. The wages of informal workers are extremely low, especially among females.

In addition, the estimated numbers of all (MSEs) increased by 4.7 percent annually from 2.5 million economic units to 3.5 million economic units in 2006, which is by far a higher growth rate compared to that of the period 1988-1998, where it grew by 1.6 percent annually. Out of all MSEs, 82 percent are informal units. Moreover, the MSEs are the major training providers to young apprentices who join these enterprises. Extensive informal training takes place in MSEs, and this helps in endowing new young entrants to the labour market with new skills. The newly acquired skills go through different levels of proficiency, starting at an apprentice level and moving upwards until reaching master of the trade level.

Alternatively, the basic formal technical and vocational education and training (TVET) in Egypt is provided through several channels; namely vocational education system; secondary technical education system; and higher technical institutes system. Other forms of training include training through industry attachments (such as dual systems and apprenticeships), in-service training, and the re-training of people already in the labour force—both employed and unemployed (Abrahart 2003).

Improving the quality of training and co-ordination between education and training stances is a major concern. Better co-ordination and co-operation among the different ministries involved in training should be strengthened in order to organise a coherent, responsive and efficient vocational education and training system. Many positive initiatives, at the institutional and legislative levels, have been launched such as the Supreme Council for Human Resources Development (SCHRD), the National Skills Standards Board (NSSB), the National Training Fund (NTF) and the Higher Education Enhancement Project (HEEP). Other donor-funded programmes, such as the Technical and Vocational Education and Training (TVET) of the European Union (EU) and the Skills Development Programme (SDP) of the World Bank have also been introduced recently. The Mubarak-Kohl initiative (MKI) was a very successful example. However, its impact is virtually negligible. The number of its graduates was around 15,000 per year, which is considered a small fraction of the total number of young entrants to the labour market each year.

The positive aspect of all these initiatives is the fact that the institutional framework for the training system reform is now existent in Egypt. However, overall, these initiatives do not have a perceptible effect on the transition from education to work or on the efficiency of the functioning of the labour market. This is due to the fact that many projects are either very recent, or some of them are not yet fully operational such as the NTF (Amer 2007).

The following two subsections briefly highlight the main components of the Egyptian education system and the vocational training system in Egypt.

2.1 The Egyptian Education System

In Egypt, the two institutions responsible for formal education are the Ministry of Education (MoE) for pre-university education and the Ministry of Higher Education. Four main educational levels are distinguished, as described below (Amer 2007):

- Pre-primary
- Basic education and compulsory education (9 years)
 - Primary education (6 years)
 - General or vocational preparatory education (3 years)
- Secondary education (3 years)
 - General secondary
 - Vocational secondary
 - Technical secondary (industry – agriculture – commerce)
- Higher education or tertiary education
 - Middle technical institutes (2 years)
 - Higher technical institutes (4 years)
 - University (4 to 7 years)

Preparatory education is either general or vocational depending on students' results at the end of primary school. Those who pass the national exam at the end of primary can join the general preparatory schools, while those who fail are sent to the vocational preparatory track. The failure rates at the primary stage are quite low; averaging 8.6 percent for the year 2004/05.

The main purpose of creating these vocational schools was primarily to teach their students practical skills that should serve the demands of the labour market. Nevertheless, these schools fail to provide their graduates with marketable skills, due to insufficient funding for supplies or pedagogical material (US AID 2006).

Distribution of students through the general and technical tracks shows bias towards technical education. In fact, in 2005/06, out of the total 3,200,351 students in secondary education 38.7 percent were enrolled in the general track (1,238,536 students) and 58.6 percent in the technical track (1,875,406 students).

Technical secondary schools provide either three or five years of education. The five-year technical schools have been recently introduced; graduates from these schools acquire the grade of technicians. In the academic year 2005/06, there were 1,179 technical schools of the three-year system and only 80 schools with the five-year system (representing 7 percent).

The purpose of the technical schools is to prepare students for the labour market. Technical secondary schools' pupils can choose from three specializations: industry; agriculture and commerce. In 2009, the number of graduates reached 528,702 and the distribution of technical secondary students (three-year programme) in the three specializations is as follows: 56 percent in industrial; 36 percent in commercial and 9 percent in agricultural schools (وزارة المالية ٢٠٠٩), while the graduates of the technical secondary schools (five-year programme) were around 15,000 students.

2.2 The Vocational Training System

More than 20 institutions, 14 ministries as well as agencies and public enterprises provide training in their affiliated vocational training centres (VTCs). The Ministry of Manpower and Emigration (MoME) plays a significant role in the provision of training, as it is responsible for overseeing most of the vocational training activities in Egypt (Amer 2007).

Apart from MoME, the main providers in terms of total capacity training are: i) the Ministry of Social Solidarity; ii) the Ministry of Housing; and iii) the Ministry of Industry and Foreign Trade. The vocational training system is mainly public—62 percent of VTCs belong to the public sector in 2003/04 (Amer 2007).

Quality of vocational training substantially differs across the various providers. Training programmes fail to adjust to the type and quality of skills that employers need. A survey conducted by the World Bank (2005) to assess the views of 211 employers on training systems indicated that they considered the training provided by the VTCs of low quality with weak market relevance.

These findings are confirmed by the employers' perspective through the school-to work transition survey carried out by the ILO in 2005. They concurred to:

- the low quality of training; and
- that the efficiency and quality of the training are low due to separation of theory from practice, which is the norm in VTCs providing pre-employment training.

2.3 Recent TVET Initiatives

The public system is administered by a multitude of government agencies. These agencies work independently, although in recent times the GoE has sought to bring about more co-ordination among them and more cohesion to TVET policies. It has established the Supreme Council on Human Resource Development (SCHR) — a tripartite body chaired by the Minister of Manpower and Emigration (MoME) (Abrahart 2003).

As one of its first tasks in 2002, the SCHR issued a paper entitled “Policy Statement on Skills Development in Egypt”, which defined the Government’s strategic objectives for TVET as follows:

- Setting qualifications framework that would foster lifelong learning.
- Setting a system that would be responsive to demands of the economy.
- Formulating a new legal and institutional basis for governing TVET institutions.
- Enhancing labour mobility.

Being responsible for implementation of the reform, SCHR’s role is to set up a national policy for planning and developing manpower and training and to set up a comprehensive and global national programme for the development and optimum use thereof.

From this perspective, many programmes are being developed:

- The National Skills Standard and Certification Board (NSSB)
- The National Training Fund (NTF)
- The World Bank Higher Education Enhancement Project (HEEP)
- Mubarak-Kohl Initiative (MKI)
- Skill Development Programme (of the World Bank) (SDP)
- TVET project (European Commission)

The main focus of such diverse programmes, which are initiated by different ministries, is to establish a co-ordination body that helps ensuring harmonization, efficiency and high outreach capacity. However, the average number of students from an important programme such as MKI did not exceed 4,675 graduates in 2009. This limited number represents less than one percent of the total number of technical schools graduates.

The Main Results

This section contains empirical analysis of the results derived from applying the three questionnaires on master craftsmen, skilled workers and apprentices. Although each questionnaire form (QF) includes questions that are relevant to each of the three categories, yet, there is a common thread that binds the three QFs; namely the relationship to the apprenticeship system, whether as providers of apprenticeship (master craftsmen) or as former recipient of training (apprentices). It also reflects their evaluation of the ongoing system and its importance in skills building and upgrading.

3.1 The Master Craftsmen

3.1.1 Roots and Skills

In this sample, four main types of economic activities were chosen; namely car mechanics; carpentry; textile and readymade clothes producers; and metal work manufacturers. In each type of economic activity 25 master craftsmen/owners (MK/Os) were interviewed.

Although the majority of the MK/Os (78 percent) were born in Cairo, yet, their origins were from Lower and Upper Egypt regions. The level of their education varied, but, in general, it is noteworthy to realize that 30 percent of them are illiterate, whereas almost 32 percent completed secondary or university education.

The majority of the master craftsmen started work at a young age. The highest frequency concentration (80 percent) is in the age bracket between less than 10 to less than 20 years old. Therefore, one could only deduce that most of the master craftsmen could not have reached their level of skills, unless they had gone through a serious period of skills development and apprenticeship. Table (1) summarizes this notion.

TABLE 1. (Q219) Age When Master Craftsmen Started Work

Age group	% Valid	% Cumulative
Less than 10 years	17.2	17.2
years to less than 15 years 10	41.9	59.1
years to less than 20 years 15	21.5	80.6
years to less than 30 years 20	10.8	91.4
years and above 30	8.6	100.0
Total	100.0	

Another aspect from the craftsmen apprenticeship history is that 74 percent of them continued in the same trade and acquired their skills through the informal system of on-the-job training usually in the workshops where they had started to work. Table (2) exhibits this aspect.

TABLE 2. (Q222) Percentage of Craftsmen Who Learned Skills of Their Trade Through Informal Apprenticeship

Channel of Learning Skill	%
Through informal apprenticeship	74.0
Other	26.0
Total	100.0

When asked about the duration of the apprenticeship training, the master craftsmen revealed, as shown in table (3), that it was mostly in the range of one year. Despite the relatively short time of skills building, yet, it proved to be of extreme importance in their future capacity building.

TABLE 3. (Q223) Duration of Apprenticeship as Revealed by Master Craftsmen

Duration of Apprenticeship	%	% Cumulative
Less than 6 months	41.8	41.8
months to less than 12 months 6	34.3	76.1
months to less than 24 months 12	17.9	94.0
months and more 24	6.0	100.0
Total	100.0	

In addition, almost 35 percent of the master craftsmen remained in the same enterprise, where they started working, as shown in table (4). This phenomenon comes in contrast with the ongoing observation that there is a high turnover among the apprentices from one small enterprise to another.

TABLE 4. (Q224) Where Did You Get Your Informal Apprenticeship?

The place	Frequency
In this workshop	35.0
In another workshop	29.0
Total	64.0

However, in several cases the master craftsmen mentioned that they acquired additional skills and training from other various venues, as shown in table (5). Therefore, in the process of building up their skills, some of the MK/Os received formal and informal vocational training, as well as guidance from friends/relatives. In some cases, the opinions of the MK/Os reflected multiple answers from the same person.

TABLE 5. (Q226) Where Else Did You Learn The Skills of The Trade?

Item	Number of master craftsmen who mentioned this answer (out of 100)
Formal vocational training	2
(Informal vocational training (evening courses, NGO's	4
On-the-job	59
(Observation/guidance from relatives, friends (without being employed)	25

When asking MK/Os whether they participated in business-related training courses that helped in upgrading their skills only one master gave a positive answer. The other 99 masters stated that they did not seek such courses for several reasons, as indicated in the table (6).

TABLE 6. (Q237) Reasons Why MK/Os Did Not Get other Business-related Courses

Reason	Number of craftsmen who mentioned this reason (out of 100)
The appropriate course is not available	51
No time to attend such a course	23
No money for attending such a course	10
No need for further skills upgrading	36
We learn in the workshop	2

However, around 28 percent of the MK/Os expressed their willingness to participate in skills building training courses. Areas of interest are machine maintenance; specialised technical skills; workshop organisation and safe handling of tools, as exhibited in table (7).

TABLE 7. (Q239) Skills To Be Upgraded Through Further Training

Skills	Number of craftsmen who mentioned this skill (out of 100)
Technical skills	17
Theoretical background information	10
Workshop organization, and workflow of production	11
Maintenance of machines	19
Accounting and cost calculation	2
Purchasing of materials	4
Negotiating with customers	3
Marketing and advertising	4
Safe handling of tools and materials	11
Literacy/numeracy	2
Teaching skills	7

Out of the 100 MK/Os interviewed, only 13 persons expressed their ability to pay around EGP100 to obtain such training courses.

3.1.2 Enterprise Management and Work Environment

Within the community of the 100 MS/Os who were interviewed for the purpose of this study, 35 percent of them are owners of enterprises. This percentage is similar to that of the MK/Os who started their apprenticeship in the workshop and continued there. This community is mainly male dominated, since the researchers did not detect more than one female MK/O running such enterprises. Furthermore, only one of these enterprises is owned by a female.

The results also reveal that there is a distinction between ownership and management of the enterprise. Only 19 percent of the enterprises are run by their owners, while the rest are managed by master craftsmen. This division of work indicates high degree of rationality amongst the owners, since they delegate management of their enterprises to skilled craftsmen who understand the business.

Despite their integration in the business community, the MSEs seem to be limited in their affiliation with other associations. The survey shows that 85 percent of those enterprises do not have any business or social association, as illustrated in table (8).

TABLE 8. (Q304) Types of Associations of Which Businesses or Owners Are Members

Type of Associations	Number of members (out of 100)
None	85
Religious	0
Savings Club	2
Professional (sectoral) association	6
Industrial union	7
Chamber of commerce	1
Co-operatives	1

As to compliance with formality and regulations, results indicate that around 46 percent of enterprises comply with all procedures, and they thus work on formal basis. In contrast, 54 percent of the enterprises are either totally or partially not complying with formal procedures as shown in table (9). In addition, around 18 percent of the sample enterprises are not registered in any formal register.

TABLE 9. (Q306) Business Formality

Economic activity	Commercial registrations	Tax authority	Town council ((Hay	All of them	Two of them	One of them	None of them
Auto Mechanic	17	16	7	6	6	4	8
Carpentry	21	20	18	17	4	3	2
Textile and RMC	24	24	15	15	6	3	1
Metal workshop	11	12	12	8	3	7	7
Total	73	72	52	46	19	17	18

This remarkably high status of informality is associated with a rather modest level of co-operation with other enterprises as revealed in table (10). It shows that 42 percent of the enterprises do not have work relations with other enterprises.

TABLE 10. (Q307) Types of Cooperation with other Businesses

Type of co-operation	Number of businesses (out of 100)
No co-operation	42
Sharing or borrowing of equipment	22
Borrowing of labour	12
Sharing knowledge, giving advice	22
Co-operation in apprenticeship	3
Selling products	18
Buying inputs	14

The area where co-operation exists more significantly is knowledge sharing. This result is conceivable especially in vocations such as furniture manufacturing and textile and readymade clothes, where production inputs are needed from other enterprises. The change in tastes and fashion requirements entail co-operation and co-ordination between suppliers and buyers. The same applies to sharing equipment. Since most of the enterprises in the sample are small sized, they tend to share the usage of the machines through renting them for some time, instead of purchasing and bearing their high costs in idle times.

As to the main clients of these enterprises results are consistent with several previous studies, where the household sector is the main source of demand—almost 93 percent as shown from table (11). The large and small enterprises constitute together 23 percent of all clients.

TABLE 11. (Q309) Main Clients and Customers of MSEs

Customers	Number of businesses (out of 100)
(Private customers (households	93
Supply to larger enterprises/industry	8
Supply to smaller enterprises/industry	15
Public Institutions	3
Government	2

3.1.3 The Workforce and Apprenticeship Acquisition

Since the main focus of this paper is on the role of informal apprenticeship system in skills formation and development, this section will seek to shed some light on the size of the enterprises, their ability and role in apprenticeship training.

It is obvious that the majority of MSEs in the sample employ 5-25 workers. The results indicate that the apprenticeship system is still functioning in the manufacturing and maintenance stances. Family helpers or nonpaid family workers do not represent a substantial number of workshop workers, in contrast to conventional wisdom that most of MSEs hire or employ household members. Results also indicate two phenomena that most of MSEs work a six-day work week, and that permanent workers are more prevalent than the casual in the workshop. This result indicates that stability of the workforce is the norm rather than high turnover, except where the apprentices are concerned.

When the MK/Os were asked whether they had enough work to be able to provide sufficient training opportunities to the apprentices, their answers were as indicated in table (12).

TABLE 12 (Q315). Availability of Work in Workshops to Provide Sufficient Training Opportunities For Apprentices

Degree of availability	%
Enough work to provide sufficient training	26.0
Not always: according to market conditions	33.3
Low amount of work	11.5
No work to provide sufficient training	29.2
Total	100.0

As can be seen, market conditions, especially the favourable ones, help boosting apprenticeship training. High demand in the market requires more production, employment and training of new apprentices to help in the process. This result is derived from two answers: Firstly when 33.3 percent of MK/Os said that training apprentices was related to market conditions, and secondly when 29.2 percent of them indicated that they did not have enough work to be able to provide training. In fact, 75 percent of MK/Os indicated that their business workload was affected by market seasonality. However, it was difficult for the entrepreneurs to identify exactly the times when business became low; the highest frequency of them said there was no specific time (35 percent), while 40 percent indicated it might be the school starting or feast time.

As to the number of apprentices who completed their training during the last two years in the sample enterprises, the answers were as presented in table (13). The majority of MK/Os (58 percent) indicated that they trained less than five apprentices, while around 30 percent raised the number to be between five to less than ten apprentices. However, the data also revealed that 12.4 percent of the enterprises offered complete training to a number ranging 10-25 apprentices. In the last two years, the total number of apprentices who completed training in the 100 enterprises was 377 apprentices; an average of 3.8 apprentices per enterprise.

TABLE 13. (Q401) Number of Apprentices Who Have Finalized Their Apprenticeship Within The Last Two Years

Category	%	% Cumulative
less than 5	58.0	58.0
to less than 10 5	29.6	87.6
to less than 25 10	12.4	100.0
Total	100.0	

When looking into the classification of the WS according to their economic activities and their ability to provide apprenticeship training we find that the auto mechanic, textile/RMC and carpentry workshops provide apprenticeship training to the highest number of young trainees. Table (14) that follows exhibits this finding.

TABLE 14. Economic Activity and Number of Apprentices

Economic Activity	Number of Apprentices			Total
	Less than 5	5 to less than 10	10 to less than 25	
Auto mechanic WS	13	5	3	21
Furniture /Wood works WS	13	7	0	20
Metal works WS	11	6	3	20
Textile and RMC WS	10	6	4	20
Total	47	24	10	81

But, what happened to these apprentices who had completed their training? According to the MK/Os, the situation varied from one apprentice to another. Table (15) seeks to capture a summary of the apprentices' path after completion of their apprenticeship.

TABLE 15. (Q 402) After Graduating, What Did Apprentices Do?

What apprentices did	Number of apprentices	%
Set up own business	71	26
Employed in this business	86	32
Found a job in large enterprises/public sector	16	6
Found a job in other small business	44	16
Unemployed	54	20
Total	271	100

Table (15) shows that 32 percent of the graduated apprentices continued working in the same WS; 26 percent of them set up their own business; 16 percent found jobs either in another small/large firm or in the public sector; and 20 percent were unemployed, despite their training experience.

The highest unemployment percentage is found in the furniture business, whereas the lowest unemployment rate is among the apprentices who were trained as auto mechanics. As indicated in table (16), they were almost employed in the same workshop.

TABLE 16. Distribution of Graduated Apprentices According to Activity and Work Status (%)

What apprentices did	Auto mechanic	Carpentry	Metal works	Textile/Tailors
Set up own business	12	35	40	3
Employed in this business	50	32	32	24
Found a job in a large enterprises/public sector	0	5	0	16
Found a job in other small business	38	2	9	39
Unemployed	0	26	19	18
Total	100	100	100	100

It is also noteworthy that more apprentices in the area of metal works and carpentry were able to establish their own businesses after completion of apprenticeship. The highest percentage of apprentices who were captured by the other small/large or public sector companies was from the textile/RMC businesses.

Although these workshops provided apprenticeship training to their apprentices, however, a higher number of apprentices did not complete their training. The number stated by the MK/Os was around 495 apprentices in the last two years, with an average of five apprentices per WS. Table (17) gives more indications.

TABLE 17. (Q403) Number of Apprentices Who Left the Workshop before Finishing Their Apprenticeship within the Last Two Years (%)

Category	%	% Cumulative
less than 5	48.7	48.7
to less than 10 5	35.1	83.7
to less than 25 10	10.8	94.6
or more 25	5.4	100.0
Total	100.0	

As to the distribution of the incomplete apprenticeships according to economic activity, it becomes evident that the highest dropout rates are both in the auto mechanic and textile/RMC business as shown in table (18).

TABLE 18. (Q403) Number of Unfinished Apprenticeships According to Activity

Unfinished Apprenticeships	Number
Auto mechanics	155
Carpentry and related Activities	66
Metal works	117
Textile/Tailors	157
Total	495

3.1.4 Choice of Apprentices and Apprenticeship Conditions

The decision of MK/Os to train new apprentices is usually related to certain conditions, the most important of which are availability of work (76 percent); availability of tools (36 percent); and number of applicants (10 percent). As to the way they find the apprentices, it was revealed that usually the apprentices themselves approach the MK/O (69 percent), the MK/O approach potential apprentices (25 percent) or some friend or relative introduce them to the MK/O (17 percent). As to the factors that are considered of great importance in selecting the apprentices the MK/Os cited several ones, however, the most relevant ones were talent for the trade and previous experience in the same activity, as shown in table (19).

TABLE 19. (Q411) Factors of Great Importance in Selecting the Apprentices

Selection Factors	Master craftsmen who mentioned this factor (out of 100)
Kinship/family ties	13
Neighbourhood	15
Recommendation from friend/colleague	23
Same ethnic group	3
Same religious affiliation	2
Level of formal education	3
Previous work experience	56
Talent for this trade	61
Their/their parents' ability to pay	7
No personal liabilities (family, children)	2
Maturity	26
Trustworthiness	32

With regards to the age of the apprentice, data indicate that the age bracket of 11-16 years is the most preferable age for starting the apprenticeship, and minimum level of education is not required. The majority of the MK/Os (84 percent) indicated that a trial period was not necessary before starting the apprenticeship, while the rest of them indicated it was needed and that it would be around 6 months.

To start the apprenticeship no written contract was needed (96 percent), but an oral agreement was always reached. The oral agreement included several items as in table (20).

TABLE 20. (Q418) Items of Apprenticeship Agreement (Multiple Answers)

Items of concern	Number of masters/ owners who mentioned this item (out of 100)
Food	4
Accommodation	5
Wage	93
Working hours	64
Holidays	81
Content of apprenticeship	6
Certification at the end of apprenticeship	2
Social protection in case of illness/accident	7
Working clothes	3

It is obvious that wage, holidays and working hours are the main components of any apprenticeship agreement. In addition, few MK/Os mentioned social insurance/protection against work injuries, the content of the apprenticeship programme, accommodation, food and working clothes. Two MK/Os stated that they gave certificates at the end of apprenticeship, as well.

There is no fixed duration for completing the apprenticeship; hence, the decision that the apprentice has favourably passed his apprenticeship is based on the criteria shown in table (21). The skills test, the ability to have their own clients, and the opinion of the employer are the three main determinants of completion of the apprenticeship period.

TABLE 21. (Q421) If You Do Not Fix An Apprenticeship Period, How Do You Determine The End of Apprenticeships?

End of apprenticeship criteria	%
When the apprentice has learnt the trade (skills test)	71.6
If the apprentice is fit enough to get own clients	16.0
According to the employer's opinion	12.4
Total	100.0

The apprenticeship period varied from one workshop to the other, as shown in table (22), but the majority of the MK/Os (70 percent) stated that it exceeded one year, while in some cases it could go up to four years or more. Instructions and guidance are usually given to the apprentice during work (52 percent of the cases), in the evening (31 percent), or in certain set-up time every day (14 percent).

TABLE 22. (Q422) Usual Duration of Apprenticeship

Length of apprenticeship period	%	% Cumulative
Less than 6 months	16.3	16.3
months to less than 12 months 6	14.1	30.4
months to less than 24 months 12	21.7	52.1
years to less than 3 years 2	13.1	65.2
years to less than 4 years 3	15.2	80.4
years and more 4	19.6	100.0
Total	100.0	

In most of the cases during the training period, the majority of WS (77 percent) offer their apprentices pocket money that does not exceed EGP100 per week. In case of illness or injury 68 percent of the WS pay pocket money to the apprentices, and 72 percent of the MK/Os pay the doctor's bill.

As apprentices undergo their training they are not required to bring their own tools with them, since these are provided by the employer. In case of any damage of the tools, the employer is usually the one who bears the costs (93 percent), and in a few cases (three percent) the parent has to pay for the damage. The MK/Os said that the apprentice got sometimes beaten (two percent) for the damage he caused. In case the master craftsman falls ill, the apprentice usually receives the training from another master craftsman or one of the permanent elderly workers.

When the MK/Os were asked whether their apprentices were subject to assessment and certification by formal training organizations, only five percent of them confirmed saying that the master craftsman was the one to make the decision of who was qualified for the test.

TABLE 23. (Q448) Do Apprentices Follow Formal Assessment and Certification Schemes Offered by Training Organisations?

The answer	%
Yes	5
No	95
Total	100.0

Very few MK/Os (only two of them) mentioned celebrating the completion of the apprenticeship in their WS, and one MK/O mentioned presenting a certificate of apprenticeship.

With completion of apprenticeship, there are practically no restrictions hindering the new worker from opening his own workshop—though in reality it could take the majority of apprentices almost two years or five years and more to be able to work independently (table 24).

TABLE 24. (Q444) Length of The Period Apprentices Usually Need Until They Can Independently Work With Clients

Length of period	%	% Cumulative
Less than 6 months	13.0	13.0
to less than 12 months 6	7.4	20.4
months to less than 24 months 12	25.9	46.3
years to less than 3 years 2	11.1	57.4
years to less than 4 years 3	7.4	64.8
years to less than 5 years 4	9.3	74.1
years or more 5	25.9	100.0
Total	100.0	

3.1.5 Possible Future Training

The MK/Os were asked, if given the opportunity, how many hours per week would they allow their apprentices to get for additional training to upgrade their skills in the profession, and what were the most needed skills from their perspective. Table (25) shows the various answers.

TABLE 25. (Q454) Hours per Week Allowed for Apprentices to Participate in Additional Training Courses to Improve Their Skills

Length of period	%	% Cumulative
Less than 10 hours	45.3	45.3
to less than 20 hours 10	25.6	70.9
to less than 30 hours 20	8.2	79.1
hours or more 30	20.9	100.0
Total	100.0	

As to the most appropriate time to be taken off for additional training courses, answers varied as shown in the following table (26).

TABLE 26. (Q455) Recommended Time for Apprentices to Participate in Additional Training Courses to Improve Their Skills

Recommended time	%
In the evenings	12.2
In the mornings	5.1
On weekends	52.1
One day per week	7.1
Two days per week	23.5
Total	100.0

Obviously, the week end is the most appropriate time from the MK/Os perspective. But, having time off in the morning or the evening is barely acceptable to the MK/Os.

Regarding the types of required skills, the MK/Os mentioned several skills, as shown in table (27).

TABLE 27 (Q456): What Types of Skills Should Be Upgraded in Further Training?

Skills	Number of craftsmen who mentioned this skill (out of 100)
Technical specialized skills	74
Theoretical knowledge	30
Workshop organisation, workflow of production	63
Maintenance of machines	59
Accounting and cost calculation	3
Purchasing of materials	13
Negotiating with customers	4
Marketing and advertising	3
Safe handling of tools and materials	44
Literacy/numeracy	2

Additionally, MK/Os stated that to improve the apprenticeship training they needed more modern machinery and production techniques (40 percent); more commitment from the trainees (37 percent); and educational support (13 percent).

3.2 Skilled Workers

The following part presents the answers of the 100 skilled workers who were interviewed in the 100 workshops that were visited by the data collection team. In general, the questions are similar to those asked to the MK/Os, though less extensive. The main essence of asking this group is to assess the degree of conformity of their answers with those of the MK/Os, especially on the issue of apprenticeship training.

Going through the answers indicates great similarity with regards to the starting age, duration of training, its importance to apprentice's career path and the additional needed skills.

It is also noteworthy that 100 percent of the skilled workers in the sample are males. Age distribution as exhibited in table (28) shows that the highest concentration of workers is in the age group of 30 years and above. However, this result does not exclude that a few of them are in the age bracket 10-18 years old. The result also conforms to the notion of apprenticeship, which is a necessary step to reach the level of a skilled worker.

TABLE 28. (Q204) Age Distribution of Skilled Workers

Age category	%	% Cumulative
to less than 15 years 10	1.2	1.2
to less than 18 years 15	4.8	6.0
to less than 25 years 18	19.3	25.3
to less than 30 years 25	33.7	59.0
years or more 30	41.0	100.0
Total	100.0	

Table (29) demonstrates that the educational background of the skilled workers is rather modest; one third of them are illiterate, and the remaining group either dropped out of education in various levels or got – in the best cases – the secondary education or technical institute certificate.

TABLE 29. (Q210) Educational Background of Skilled Workers

Educational level	%	% Cumulative
None	33.3	33.3
Incomplete primary level	14.3	47.6
Complete primary level	13.1	60.7
Incomplete preparatory level	19.0	79.7
Complete preparatory level	6.0	85.7
Incomplete secondary level	1.2	86.9
Complete secondary school	11.9	98.8
2-year technical institute	1.2	100.0
Total	100.0	

Around one fifth of the workers are relatives to the owner, primarily as sons or brothers. All of them started their apprenticeship at a young age and some of them in the same workshop.

TABLE 30. (Q214) The Age at Which Skilled Workers Started Working

Age category	%	% Cumulative
Less than 10 years	7.8	7.8
years to less than 15 years 10	35.1	42.9
to less than 18 years 15	36.3	79.2
to less than 25 years 18	18.2	97.4
to less than 30 years 25	2.6	100.0
Total	100.0	

As can be noticed, and in conformity with MK/Os' previous answers, almost 80 percent of the skilled workers started working when they were less than 18 years old. In very few cases, they started working at an older age. Around 90 percent of them worked in the same activity ever since the beginning and benefited from the informal apprenticeship system.

With regards to the duration of apprenticeship training the answers were also quite similar to those of the MK/Os, as 60 percent of the skilled workers confirmed that it lasted two years or more. More details are given in table (31).

TABLE 31. (Q218) Duration of Apprenticeship Training

Duration	%	% Cumulative
Less than 6 months	5.6	5.6
to less than 12 months 6	4.2	9.8
months to less than 24 month 12	29.2	39.0
years to less than 3 years 2	18.0	57.0
years to less than 4 years 3	18.0	75.0
years to less than 5 years 4	16.7	91.7
years and more 5	8.3	100.0
Total	100.0	

Most of the skilled workers (75 percent) got their apprenticeship in the WS where they are working now, and they feel that this training was of extreme importance for their skills development. A few of them (six skilled workers) said that they improved their skills through evening courses at some NGOs (informal vocational training), and a larger group (36 skilled workers) mentioned that they learnt some new skills through observing relatives and friends while on the job. One of the skilled workers indicated that he attended a specialized three-month course in metal welding at Abu Hoof Industrial School.

When the skilled workers were asked why they did not attend specialized courses for skills upgrading their answers varied, as explained in table (32).

TABLE 32. (Q231) Reasons for Not Attending Skills Upgrading Courses

Reasons	Number of skilled workers who mentioned this reason ((out of 84	%
Appropriate course not available	40	48
No time to attend such a course	22	26
No money to attend such a course	6	7
No need for further skills upgrading	16	19
I learn in the workshop	6	7

Still 22 percent of the skilled workers were ready to participate in such courses. As shown in table (33), they felt that they lacked some skills, the most important of which were the specialized technical skills in their vocation, maintenance of machines and their safe handling.

TABLE 33. (Q233) Skills Need Upgrading in Further Training

Skills	Number of skilled workers who mentioned this skill	% Cumulative
Technical specialized skills	19	23
Theoretical background information	5	6
Workshop organisation, workflow of production	5	6
Maintenance of machines	12	14
Accounting and cost calculation	1	1
Purchasing of materials	6	7
Negotiating with customers	3	4
Marketing and advertising	7	8
Safe handling of tools and materials	10	12
Literacy/numeracy	7	8
Teaching skills	2	2

Out of the 18 workers who expressed their willingness to attend such courses, only seven were ready to pay an amount in the range of EGP50 for attending such a course.

3.3 The Apprentice

In this group of apprentices, two girls were detected. So out of 95 apprentices, there were two females, and 20 percent of them were relatives of the employer. Their ages were relatively older than stated by the MK/Os – when they were asked about the best age of apprenticeship – as almost 80 percent of them were younger than 25 years old. This phenomenon could be explained by the level of their educational attainment or the high unemployment rates, which drive new groups of labourers into these jobs at a later age, as shown in table (34).

TABLE 34. (Q206) Age Distribution of Apprentices

Age category	%	% Cumulative
Less than 10 years	1.1	1.1
to less than 15 years 10	23.4	24.5
to less than 18 years 15	20.2	44.7
to less than 25 years 18	36.2	80.9
to less than 30 years 25	7.4	88.3
years and over 30	11.7	100.0
Total	100.0	

Prior to their apprenticeship, around 38 percent of the apprentices received different forms of formal and informal vocational training. More than 50 percent of them had vocational training courses that lasted 2 years, as indicated by table (35).

TABLE 35. (Q212) Duration of Vocational Training (Formal and Informal)

Age category	%	Cumulative %
Less than 6 months	10.7	10.7
6 months	14.3	25.0
12 months	17.9	42.9
24 months	32.1	75.0
36 months	7.1	82.1
More than 48 months	17.9	100.0
Total	100.0	

With regards to the reasons for joining this WS, table (36) exhibits several reasons listed by the apprentices. Learning the skill of the trade, earning money and becoming able to earn more income in the future were some of the answers.

TABLE 36. (Q215) Reasons for Joining This WS

Reason	Number of apprentices who mentioned this reason (out of 95)	Cumulative %
I didn't know what else to do	20	21
To learn the skills of the trade	70	74
To earn some money now	59	62
To generate income later	42	44
Formal training is too expensive	12	13
I did not meet the requirements for formal training	2	2
Someone told me to do so	24	25
I hate education	3	3

As to the age of starting work, the majority of the apprentices (68 percent) stated that they started before they reached 18 years. Choosing the kind of work they wanted to pursue was their own choice in 63 percent of the cases, or their parents' in 25 percent of the cases. The good reputation of the master craftsman, being in the neighborhood and being a friend to the family or one of its members, helped in deciding whom to work for.

The apprenticeship conditions, from the apprentice's perspective were similar to the ones mentioned by the MK/Os, as illustrated in table (37).

TABLE 37. (Q222) Apprenticeship Terms of Agreement

Reason	Number of apprentices who mentioned this item (out of 95)	Cumulative %
Food	11	12
Accommodation	6	6
Wage	86	91
Working hours	68	72
Holidays	76	80
Content of apprenticeship	3	3
Certification at the end of apprenticeship	2	2
Social protection/insurances	6	6
Working clothes	3	3

As seen, the most important three items in the agreement are wages, holidays and working hours. Food, accommodation and social/medical protection are of lesser importance. More than 90 percent of apprentices receive weekly wages mostly in the range of EGP50-100 or more. If an apprentice suffers from sickness or occupational injury the wages and the medical bill are paid in 43 percent of the cases. The training is usually supervised and guided either by one of the elder skilled workers or the master craftsman.

The duration of the training usually lasts over one year. In 28.9 percent of the cases it lasts for more than 3 years. Table (38) gives more details.

TABLE 38. (Q235) Length of Apprenticeship Period (in months)

Period	%	Cumulative %
Less than 6 months	6.6	6.6
6 months to less than 12 months	10.5	17.1
12 to less than 24 months	31.6	48.7
24 to less than 36 months	22.4	71.1
36 months and more	28.9	100.0
Total	100.0	

The apprenticeship is concluded when the master craftsman decides that the apprentice is ready to become a skilled worker (86 percent), or after going through skills test (11 percent), or when the apprentice gets his/her own clients. Just one of all the apprentices mentioned that he would receive a certificate upon completion of the apprenticeship. There was no talk whatsoever about a ceremony for the apprenticeship completion.

The main bulk of apprentices work from four to eight hours a day, but a substantial part works more than eight hours a day. In addition, they mostly work six days a week.

Summary and Conclusion

In the beginning of this study several questions were posed, and the study attempted to give answers to most of them.

1. There are various vocational training institutions and technical education schools which belong to the formal government institutions, such as the ministries of Education, Industry and Foreign Trade, and Manpower and Emigration. There are joint programmes with donor agencies such as the MKI and the PVTD, which introduced new training and education methods and helped raising the efficiency and skills of their students. However, the number of students graduating from the previous two programmes does not exceed 6,000 graduates on average per year, which does not constitute one percent of the total number of graduates of all the formal technical and vocational training systems.

2. Due to lack of sufficient skills in the remaining 99 percent of the technical schools graduates and training facilities, trainees usually acquire those skills through on-the-job informal training, whether in micro, small, medium-sized or large enterprises. The informal training system acts as the main training provider for the different workers and employees in the private sector.

3. The informal training system is usually based on the skills of the trainers or the enterprises' owners/managers/master craftsmen. If their skills are of a high level, and they adopt a well planned training programme, then the young apprentices would be well trained. However, if their skill level is not advanced and their equipment is not modern to match the international requirements, the outcome would be apprentices with low levels of skills.

4. Data reveal that the training of apprentices varies from one workshop to another. Still the majority of apprentices get accepted after an oral agreement between their parents and the enterprises' owners/managers. Mostly, no fees are paid for getting the necessary training. As a matter of fact, the trainees get paid minimal wages by the end of each week's training. The training agreement includes discussing items such wages, holidays, meals during work, working hours...etc.

5. The highest frequency of apprentices completes their training between one to two years or more. However, there are 48 percent of the apprentices who completed their training in more than two years.

6. No examination is undertaken at the end of training, and no ceremony is hosted.

7. The informal apprenticeship system is not intended for technical schools graduates alone, but it includes illiterates, schools drop-outs at different educational attainment levels. The age of the apprentice varies from 10 to over 30 years old.

Policy Recommendations

1. Despite the existence of a wide spread formal and informal training system, it still needs improvement of its various components, such as the trainers; curricula; training materials and equipment to ensure better quality graduates. It also needs certification by a qualified body of highly specialized vocational trainers.

2. The traditional informal training system should be supplemented with off-job apprenticeship in well established training centres at the local areas where apprentices work. Both the master craftsmen and the apprentices expressed their willingness to participate in such a system – if it exists –and the masters agreed to allocate time for the apprentices to attend these programmes.

3. The traditional informal training system needs to be further strengthened through public- private partnership. The MoME could play a leading role in this respect via enacting a three-year contract between the family of the apprentice and the workshop owner. The MoME would also ensure that the joining enterprises would take into account occupational health and safety requirements. The enterprises applying to such a system have to regularize their situations accordingly. During the three years, the enterprise has to define the apprentice's level, whether low, medium or high skilled worker. After completion of the on-job and off-job training the apprentice will be examined by the MoME and awarded certification of the skills acquired. This way the certified worker would be entitled to register for employment services and would be eligible for regulated migration schemes by the ministry. In return for the enterprises' joining this scheme and participating in organized training of apprentices, the MoME could choose from either offering financial support to these enterprises to help them cover their expenses, or alternatively may provide them with loans in order to upgrade their machinery and equipment.

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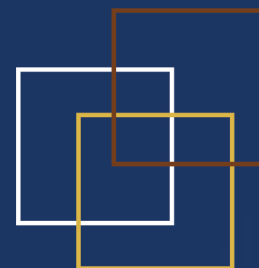
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