ITALY

Monica Mincu
&
Lorenzo Fischer
University of Torino

WASHINGTON, DC, 7-10 JUNE, 2011
PRESENTATION OUTLINE

• HISTORICAL OVERVIEW

• CURRENT SYSTEM OF EDUCATION AND OF TEACHER EDUCATION

• NATIONAL LEVELS OF GOVERNANCE & MATH STANDARDS

• THE CASE OF NOVICE TEACHERS
  – VIDEO: THE EQUIVALENCE PRINCIPLE & A CHALK TALK LESSON
  – MATH STANDARDS
HISTORICAL OVERVIEW

Istituti Magistrali & Scuole Magistrali
(Normal Schools & Shorter Normal Schools)

Preservice for teachers of pre-primary and primary levels;

Istituti Magistrali lasted 4 years instead of 5, like almost all the other upper secondary schools.
Secondary schools teachers

- No specific institutes of teacher training.

- Students had to obtain a master degree in the subjects they intended to teach and then they provided on their own for their training.
Before 1998

University Degree
(Subject Matter Training)

5th

4th

3rd

2nd

1st

Academic LICÉO

Istituto magistrale

Normal School

Scuola magistrale

Technical

Professional

Primary school

+1

+2

+2
“A reform delayed more than one hundred years”
Structural uncertainties & Ongoing redesign

• 30 years of debates;

• **1962-1963** Universitarization debate in Parliament

• **Act 341/1990** ITT at the university level

• Fully institutionalised only in **1997/1998**
  – **Degree courses** in Primary Education sciences of **4 years**
  – A **2-year Specialisation School** (SSIS) has been foreseen for teachers with a degree for teaching in secondary schools.
CURRENT SYSTEM

• Training for Primary and Pre-primary education
  extended from 4 to 5 years (2011/2012)

• Pre-service for Secondary Education:
  – 10 years of provisionary functioning of a 2-year school
    - SSIS (closed down in 2008)

At present a law is expected to be enacted for secondary school teacher training

1000h: 300h didactics, 350h educational sciences, 350h apprenticeship

485 h apprenticeship + 30ECTS
The planned reform of secondary teachers

1 YEAR SCHOOL TRAINING:

485 hours of apprenticeship (quite demanding, 612 is the norm of a permanent teacher) 30 credits ECTS

• NO SPECIFIC TRAINING FOR THE TEACHING OF A SUBJECT MATTER (MATH INCLUDED), SUCH AS PEDAGOGY AND DIDACTICS
Entry to the profession: a matter of closed scrolling “lists”

Permanent and temporary contracts

3 routes to get hired, through types of “lists”

graduatorie

Candidates who passed competitive exams (the last national examination in 2000/2001)

Candidates enrolled in permanent lists (last updated to 2006), in possession of a teaching certificate

Candidates enrolled in lists for short and long term temporary positions, with no teaching certificate
Qualifications:

- short training courses (corsi abilitanti) before the introducing of the pre-service system at the univ. level;
- thereafter the degree in primary education sciences;
- the SSIS certification/diploma
Recruitment of teachers for temporary positions that become available for a single year is done by school managers on the basis of lists of candidates in possession of the prescribed qualifications. The lists are updated each year.
The Italian Education System

ISCED 1

Primary School

ISCED 2 & 3

Lower Secondary

(New) Academic

(New) Technical

(New) Professional

ISCED 4 & 5

University
Types of schools after 1999

- **Public**  ➔ Managed directly by the State
- **Paritarie**  ➔ Privately run schools and officially recognised as public
- **Private**  ➔ Not authorised to provide certificates with legal value
Distribution between State and private schools

- **Pre-primary**: 50% State, 40% Private
- **Primary**: 80% State
- **Lower secondary**: 90% State
- **Upper secondary**: 70% State
REFORM OF CURRICULUM OF UPPER SECONDARY SCHOOLS

- Reducing/simplifying the institutional routes and types
- A tripartite system is maintained
  - “Vertical” comprehensiveness:
    - preprimary, primary and lower secondary
- Some experiments of “horizontal comprehensiveness” over years
- Access to university has been liberalised since 1969
In 2003

TEACHERS

The numbers describing teachers in State schools

How many are there?

permanent contracts 722,182  total 827,231  temporary contracts 105,049
Teachers with permanent or temporary contracts...

...in regular positions

- Pre-primary school: 7.70% (permanent), 5.55% (temporary)
- Primary school: 11.03% (permanent), 13.02% (temporary)
- Lower secondary school: 13.02% (permanent), 11.03% (temporary)
- Upper secondary school: 11.03% (permanent), 8.70% (temporary)

...as special needs teachers

- Pre-primary school: 49.69% (permanent), 44.43% (temporary)
- Primary school: 54.27% (permanent), 33.63% (temporary)
- Lower secondary school: 33.63% (permanent), 44.43% (temporary)
- Upper secondary school: 44.43% (permanent), 54.27% (temporary)
### Type of position and of school

<table>
<thead>
<tr>
<th></th>
<th>teachers with permanent contracts</th>
<th>teachers with temporary contracts</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>In regular school position</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-primary</td>
<td>74,706</td>
<td>6,232</td>
<td>80,938</td>
</tr>
<tr>
<td>primary</td>
<td>224,983</td>
<td>13,284</td>
<td>238,267</td>
</tr>
<tr>
<td>lower secondary</td>
<td>154,956</td>
<td>19,205</td>
<td>174,161</td>
</tr>
<tr>
<td>upper secondary</td>
<td>224,898</td>
<td>33,679</td>
<td>258,577</td>
</tr>
<tr>
<td>total</td>
<td>679,543</td>
<td>72,400</td>
<td>751,943</td>
</tr>
<tr>
<td>as special needs teachers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-primary</td>
<td>3,619</td>
<td>3,574</td>
<td>7,193</td>
</tr>
<tr>
<td>primary</td>
<td>16,738</td>
<td>13,385</td>
<td>30,123</td>
</tr>
<tr>
<td>lower secondary</td>
<td>15,816</td>
<td>8,015</td>
<td>23,831</td>
</tr>
<tr>
<td>upper secondary</td>
<td>6,446</td>
<td>7,675</td>
<td>14,114</td>
</tr>
<tr>
<td>total</td>
<td>42,639</td>
<td>32,649</td>
<td>75,288</td>
</tr>
<tr>
<td>TOTAL</td>
<td>722,182</td>
<td>105,049</td>
<td>827,231</td>
</tr>
</tbody>
</table>

### Teaching areas

<table>
<thead>
<tr>
<th></th>
<th>teachers with permanent contracts</th>
<th>teachers with temporary contracts</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>music and performing arts</td>
<td>10,156</td>
<td>1,485</td>
<td>11,641</td>
</tr>
<tr>
<td>art and design</td>
<td>18,018</td>
<td>2,673</td>
<td>20,691</td>
</tr>
<tr>
<td>physical education</td>
<td>22,346</td>
<td>2,410</td>
<td>24,756</td>
</tr>
<tr>
<td>economics and law</td>
<td>19,552</td>
<td>2,048</td>
<td>21,600</td>
</tr>
<tr>
<td>technical practice</td>
<td>25,705</td>
<td>6,289</td>
<td>31,994</td>
</tr>
<tr>
<td>maths, physics, information technology</td>
<td>37,032</td>
<td>5,987</td>
<td>43,019</td>
</tr>
<tr>
<td>foreign languages</td>
<td>46,313</td>
<td>7,565</td>
<td>53,878</td>
</tr>
<tr>
<td>language and literature</td>
<td>114,553</td>
<td>11,825</td>
<td>126,378</td>
</tr>
<tr>
<td>medical and preventive area</td>
<td>388</td>
<td>150</td>
<td>538</td>
</tr>
<tr>
<td>natural sciences</td>
<td>44,315</td>
<td>5,883</td>
<td>52,198</td>
</tr>
<tr>
<td>humanities</td>
<td>9,012</td>
<td>1,186</td>
<td>10,198</td>
</tr>
<tr>
<td>musical instruments</td>
<td>1,783</td>
<td>1,169</td>
<td>2,952</td>
</tr>
<tr>
<td>technology</td>
<td>28,681</td>
<td>4,214</td>
<td>32,895</td>
</tr>
<tr>
<td>total</td>
<td>379,854</td>
<td>52,884</td>
<td>432,738</td>
</tr>
</tbody>
</table>
## Positions in the permanent recruitment list...

<table>
<thead>
<tr>
<th>Type of School</th>
<th>Positions in the List (*)</th>
<th>Percentage out of the Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>in normal positions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-primary schools</td>
<td>140,334</td>
<td>18.20%</td>
</tr>
<tr>
<td>primary schools</td>
<td>128,303</td>
<td>16.64%</td>
</tr>
<tr>
<td>lower secondary schools</td>
<td>160,359</td>
<td>20.79%</td>
</tr>
<tr>
<td>upper secondary schools</td>
<td>342,157</td>
<td>44.37%</td>
</tr>
<tr>
<td>total</td>
<td>771,153</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching Area</th>
<th>Positions in the List (*)</th>
<th>Percentage out of the Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>music and performing arts</td>
<td>19,734</td>
<td>3.93%</td>
</tr>
<tr>
<td>art and design</td>
<td>37,001</td>
<td>7.36%</td>
</tr>
<tr>
<td>physical education</td>
<td>37,549</td>
<td>7.47%</td>
</tr>
<tr>
<td>economics and law</td>
<td>29,287</td>
<td>5.83%</td>
</tr>
<tr>
<td>technical practice</td>
<td>25,436</td>
<td>5.06%</td>
</tr>
<tr>
<td>physics, information technology, maths</td>
<td>51,181</td>
<td>10.31%</td>
</tr>
<tr>
<td>foreign languages</td>
<td>92,165</td>
<td>18.34%</td>
</tr>
<tr>
<td>language and literature</td>
<td>118,739</td>
<td>23.63%</td>
</tr>
<tr>
<td>medical and preventive area</td>
<td>2,468</td>
<td>0.49%</td>
</tr>
<tr>
<td>natural sciences</td>
<td>41,010</td>
<td>8.16%</td>
</tr>
<tr>
<td>humanities</td>
<td>28,742</td>
<td>5.72%</td>
</tr>
<tr>
<td>musical instruments</td>
<td>1,397</td>
<td>0.28%</td>
</tr>
<tr>
<td>technology</td>
<td>17,170</td>
<td>3.42%</td>
</tr>
<tr>
<td>total</td>
<td>502,516</td>
<td>100%</td>
</tr>
</tbody>
</table>

* (*) each aspirant can occupy more than one position in the list.
Induction

1 year after getting a PERMANENT POSITION

• 180 days of work and necessarily take part in a professional training course: 40 hours on various subjects.

• Moreover, with the assistance of a tutor, (an experienced colleague of the same subject matter and with permanent employment) must prepare a report on his on a probation year.

• The first temporary year will then be concluded and the report approved.
In-service

• Since school year 2001-2002, such activities have been organized according to the e-learning integrated model; the Ministry has entrusted the INDIRE (now National Agency for the Development of School Autonomy) with these activities which include the development of an on-line learning environment destined to newly recruited teachers with permanent contracts.
Professional status

Teachers are civil servants with a private contract

- Their employment relationship is regulated by the national collective labour bargaining and integrative contracts.

- These contracts are defined in full autonomy and under private law; they are only bound to respect the financial limits established by the State balance as far as remuneration is concerned. According to permanent contracts, teachers become part of the permanent teaching staff. According to temporary contracts, the temporary contracts can last at most until the end of the school year.
In-service training


- The right to have 5 days with exemption from service/year

- The Teachers Assembly of every school decides its annual Plan for update and in service training activities

- The Plan for update and in service training activities can include various types of initiatives:
  - organized by the educational authority;
  - planned by the individual school
IN-SERVICE IS NOT COMPULSORY, NOR EVALUATED

• The present regulations don’t foresee the compulsory verification of the learning outcomes and of the certification of the skills acquired

  a participation certificate issued

• No institutionalised method of verifying whether (and how) what has been learned in in-service training is actually applied to didactic practice.

• An in-service project for Math teachers Mot@bel, a small scale experiment
The compulsory work schedule

● 612 a year not less than 5 days a week, for 25 hours in pre-primary school, 22 hours in primary school, plus 2 hours devoted to programming didactic activities, and 18 hours a week in secondary school;

● activities, both quantified and non quantified, functional to teaching:

  individual work:

  **team-work activities** (up to 40 hours a year) planning and monitoring (at the beginning and at the end of the school year), information to the families about students' final results;

  **team-work activities** (up to 40 hours a year) participation to the activities of the collegiate bodies of the school.
Teaching Math

• PRIMARY SCHOOL LEVEL:
  - A generalistic training in all subject matters (10 ECTS Math + 10 ECTS Math didactics, e.g., University of Torino)
  - No specific training at this level;
  - However, in practice some teachers may principally teach Math.

• LOWER & UPPER SECONDARY LEVEL:
  - Since 2008 no specific training school (just a subject matter master degree)
INCREASING NUMBERS OF TEACHERS

DECREASING DEMAND

SHORTAGES OF TEACHERS

IN CERTAIN TEACHING AREAS

FOR CERTAIN DISCIPLINES, LIKE TEACHERS WITH BACKGROUNDS IN MATH AND SCIENCE
SHORTAGES OF SECONDARY MATH & SCIENCE TEACHERS - 2003 Permanent applicants lists

- Math: 58.6%
- Economics or law: 9.0%
- Arts: 20.0%
- Others: 33.0%
- Natural sciences: 10.0%
- Foreign languages: 15.0%
- Technology related backgrounds: 5.0%
THE PROFILE OF THE PERMANENT POSITION TEACHER

Woman, in her 40s, with about 10 years on temporary teaching positions.

(2007/2008, an inter-regional research, a representative sample, about 22% of the total new-entrants, 92.5 respondents, Gianferrari, 2009, FGA)
Who teaches Math? (regular/permanent teachers) 
(Gianferrari, 2010, pp. 14-15, FGA)

Lower secondary school

- Natural Sciences 21.8%
- Biological Sciences 46.7%
- Math 9.4%
- Others 5.3%
- Chemistry 2.1%
- Geology 14.7%

Higher secondary school

- Math 58.6%
- Others 27.4%
- Engineering, Informatics 4.0%
- Physics and Economics 10.0%
New Regular Math teachers: types of graduates

**Holding a Math Master Degree**

- **Lower secondary school**
  - Engineering: 60%
  - Informatics: 15%
  - Biological sciences: 11%
  - Natural sciences: 12%
  - Statistics: 11%
  - Others: 22%

- **Higher secondary school**
  - Engineering: 47%
  - Informatics: 10%
Still a Centralised System

Reform of school autonomy (1997 & 2001) rather limited in practice

POF The school “education plan” or offering, an “identity card” (15% SBC)

The Ministry responsible for:
- Regulations and definitions of programme and curricula
- Legal status of staff
- Social policies
- Definition and assignment of financial resources
- Identification of the training objectives and standards
- Administration & management of all staff
Primary 1-5 - Final pedagogical aims

- Develops positive attitude towards Maths;
- Feels at ease while doing written and mental operations;
- Represents geometrical forms, natural or man made relations and structures;
- Uses data representations in significant situations in order to access information;
- Recognises that object may appear differently from different perspectives;
- Describes and classifies figures from a geometrical point of view and using models
- Solves problems through different strategies and knows that these may involve more solutions
- Is able to solve simple problems and to control the procedures and to explain them
- Builds arguments and own theses
- Recognises uncertain situations and makes use of expressions like “is probable”, “unlikely” etc.
Specific learning aims 3° class & 5° class

- Numbers
- Space and figures
- Relations, measures, data and previsions

- INVALSI TESTS at the end of the 5° and 8° class: a pressure to reach the “standards” & huge resistances;

- The POF allows for enough autonomy on curriculum choices: timetable, learning choices, organisation etc, within the national curriculum framework (*Indications for personalised study plans*).