

Društvo / Školstvo /

# MATURA NA POPRAVNOM

Analiza Instituta za društvena istraživanja pokazala da su ispiti katastrofalno loši te da se ne zna čemu matura zapravo služi

# DRŽAVNU MATURU POD HITNO MIJENJATI!

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Da nisu zadovoljni selekcijom studenata na temelju državne mature i da su nevoliko odustali od priamnih



mu ona služi. – Ako se to ne zna, ne mogu se napraviti ni dobri ispiti. I onda se može dogoditi da se u izboru najslabije i zato što te sadi vl. A na zahtie





# NEWS EDUCATION & FAMILY

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## Universities warn A-levels leave students 'unprepared'

By Sean Coughlan  
BBC News education correspondent

Universities want A-levels to be more intellectually stretching and with less spoon-feeding from teachers, according to a study from an exam board.

Cambridge Assessment, which runs the OCR exam board, found many lecturers believed students arrived unprepared for degree-level work.

Three-in-five lecturers said their institutions ran catch-up classes.

Education Secretary Michael Gove has called for greater involvement from universities in A-level standards.

Mr Gove has told exam regulators that the content and assessment of A-levels should be shaped by universities, working alongside exam boards.

Last week he told head teachers that exams should be conferred by "institutions of academic excellence such as our best universities".

### 'Less predictable' exams

Cambridge Assessment, a department of the University of Cambridge, carried out an 18-month study of what higher education wanted from the A-level system.



A-level courses should encourage pupils to develop the ability for "independent thinking", say lecturers

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# STATE MATURA IN CROATIA

## THE (IM)POSSIBILITY OF STANDARDISATION?

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# OVERVIEW



- SYSTEM
- AIMS AND FUNCTION OF STATE MATURA EXAMS
- PROJECTS
- CANDIDATES
- CONTENTS
- RESULTS
- CONCLUSIONS



SYSTEM



# AIMS AND FUNCTION OF STATE MATURA EXAMS

*A fundamental principle of assessment development postulates that there should be an unambiguous formulation of its aims and function. It is extremely challenging to construct exams/tests which would satisfactorily fulfill multiple functions.*

# LEGAL FORMULATIONS



- Aim – assessment of pupils’ knowledge and skills, gained through formal education according to the general education curricula (plans and programs).
- **Standardised exams** undertaken throughout the country **at the same time and under the same conditions and criteria** for all pupils, or candidates.
- State matura consists of obligatory and elective parts

# THE OBLIGATORY PART OF STATE MATURA



- Exams in *Mother tongue, Mathematics, Foreign language*
- Exams can be taken at the higher (A) or basic (B) level
- *Higher level exams* are developed according to the curricula of gymnasiums
- *Basic level exams* are developed according to the subject curricula of the four year vocational programme with the least number of teaching hours

# THE OBLIGATORY PART OF STATE MATURA



- Gymnasium pupils are obliged to take exams from the obligatory part of State Matura.
- Pupils from vocational schools – this is not obligatory and results do not have an implication on gaining secondary school qualifications
- Pupils are allowed to choose the level of exams
- For some pupils, the function of these exams is **both certification and admission**, for others it is solely **admission to HEIs**

# THE ELECTIVE PART OF STATE MATURA

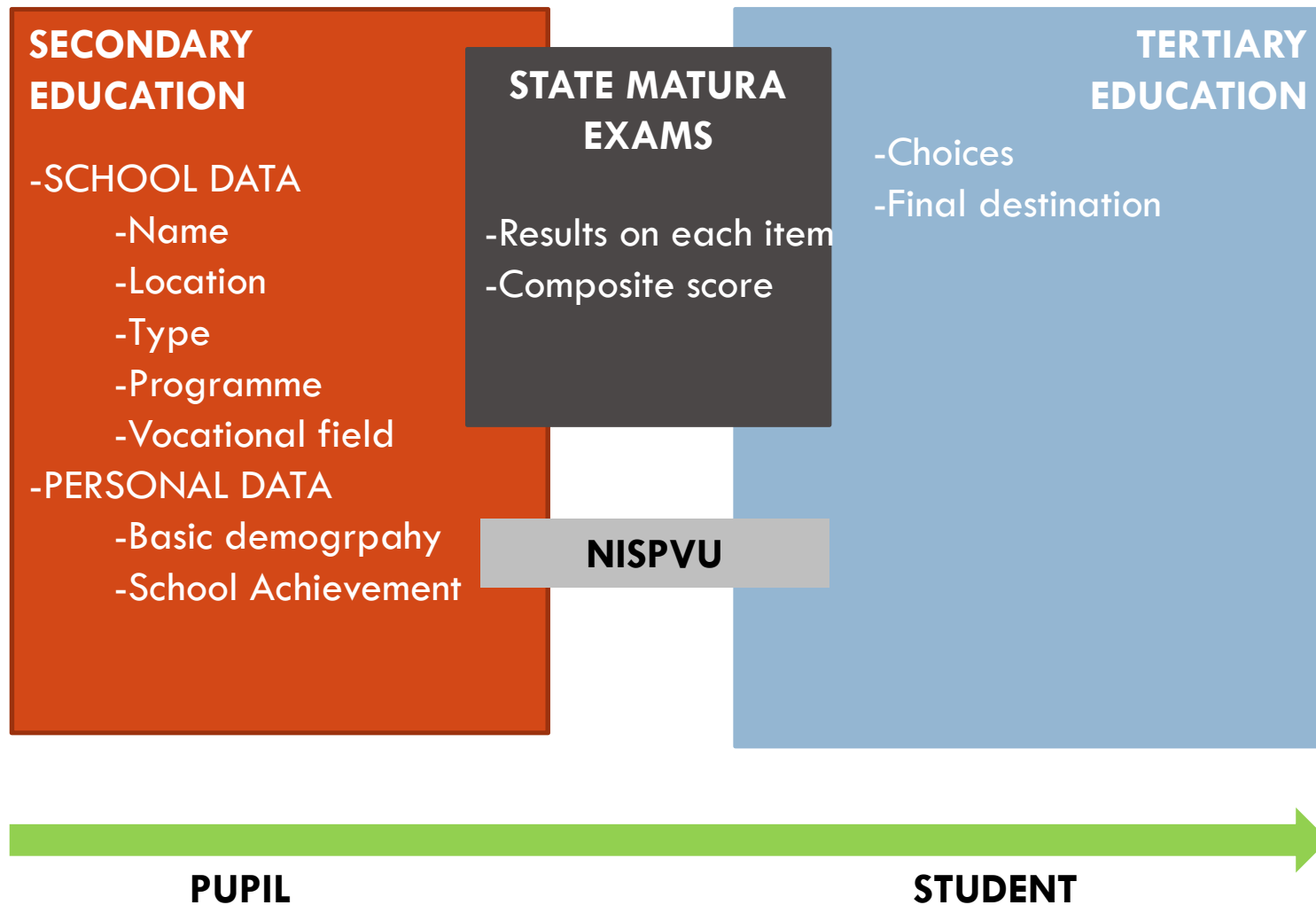


- Elective part – all other subjects taught in gymnasium
  - Constructed according to gymnasium subject curricula
  - Not obligatory for anyone
  - Results do not have implications on the completion of secondary education
- 
- The function is admission, and the purpose is the selection of candidates for study programs of HEIs



# PROJECTS

# CONCEPTUAL FRAMEWORK



# PROJECT STAGES

Mathematics, Physics, Biology, Chemistry



## 1. *ANALYSES OF EXAM CONTENTS*

- Gathering of the subject experts
- Professional range corresponding to the candidate profiling
- Individual evaluations
- Reliability analyses (high)
- Consensus meetings

## 2. *ANALYSES OF RESULTS*

- Psychometric analyses
- Analyses of composite scores
- Type of items
- Disciplinary domains
- Levels of demand
- Categories of cognitive processes...



# CANDIDATES

*Exams should be adjusted to the profile of the candidates.  
If they are not, the issue of equity and processes of  
standardisation can be questionable.*

# CANDIDATES – MACROSTRUCTURE 2010.

## ELECTIVE SUBJECTS

	% BIOLOGY N=7925	% PHYSICS N=9395	% CHEMISTRY N=3446
GYMNASIUM PROGRAMMES	45,38	42,37	63,55
VOCATIONAL PROGRAMMES	43,87	48,56	24,38
PREVIOUS YEARS	7,89	5,92	8,44
COMPLETED EDUCATION OUTSIDE CROATIA	2,86	3,15	3,63
TOTAL	100	100	100

# CANDIDATES – MACROSTRUCTURE 010.

## MATHEMATICS

CANDIDATES HIGHER LEVEL EXAM (%)	N (2012.)	2010.	2011.	2012.
GYMNASIUM PROGRAMMES	12175	46,52	51,85	56,32
VOCATIONAL PROGRAMMES	16627	15,53	14,48	16,46
OTHER CANDIDATES	3380	29,08	28,99	39,50
TOTAL	32182	28,68	29,93	33,96

# CANDIDATES



- Three years brought a plethora of patterns of change
- Candidates react to the results of previous years and changes to HEI requirements
- This makes exam development and standardisation extremely difficult?



## EXAM CONTENTS AND EXAM SPECIFICATIONS

*Very transparent procedures. All tests are public one day after they have been administered. Exam catalogues published each year with clear exam specifications. Is the system too open?*

# EXAM – THEMES (Mathematics)

<b>BASIC LEVEL</b>	<b>2010.</b>	<b>2011.</b>	<b>2012.</b>
Number and algebra	51,5	51,5	48,5
Functions	9,1	6,1	9,1
Equations	18,2	24,2	24,2
Geometry	21,2	18,2	18,2
Modelling	27,3	21,2	21,2

<b>HIGHER LEVEL</b>	<b>2010.</b>	<b>2011.</b>	<b>2012.</b>
Number and algebra	20,0	26,7	22,2
Functions	28,9	31,1	31,1
Equations	24,4	17,8	22,2
Geometry	26,7	26,7	24,4
Modelling	17,8	24,4	17,8

# EXAM – DEMAND (Mathematics)

<b>BASIC LEVEL</b>	<b>2010.</b>	<b>2011.</b>	<b>2012.</b>
Basic	69,7	72,7	90,9
Intermediate	30,3	27,3	9,1
Advanced	0,0	0,0	0,0

<b>VIŠA RAZINA ISPITA</b>	<b>2010.</b>	<b>2011.</b>	<b>2012.</b>
Basic	42,2	37,8	33,3
Intermediate	48,9	55,6	57,8
Advanced	8,9	6,7	8,9

# EXAM – COGNITIVE PROCESSES

	BIOLOGY	PHYSICS	CHEMISTRY
Basic	39,8	72,2	57,6
Intermediate	43,0	27,8	42,4
Advanced	17,2	0,0	0,0

	BIOLOGY	PHYSICS	CHEMISTRY
Simple recall and application of formulas	65,6	63,9	57,6
Conceptual understanding	34,4	36,1	42,4
Strategic and scientific thinking	0	0	0,0

# EXAM CONTENT



- Content is adjusted to the exam specification
- Alongside the participants, the contents vary significantly from year to year
- Does this mean it is unjustified to use a result from the previous year in consecutive years?



# RESULTS

# RESULTS – ELECTIVE SUBJECTS

## BIOLOGY

% correct	M	$\sigma$	C	Range	Skewness	Kurtosis
2009./10.	40,78	21,60	45	2 - 99	0,57	-0,70
2010./11.	51,78	22,39	50	0 - 100	0,11	-1,08

## PHYSICS

% correct	M	$\sigma$	C	Range	Skewness	Kurtosis
2009./10.	48,05	23,21	45	0 - 100	0,37	-0,90
2010./11.	39,25	18,99	35	0 - 100	0,75	-0,01

## CHEMISTRY

% correct	M	$\sigma$	C	Range	Skewness	Kurtosis
2009./10.	38,04	19,12	35	4 - 99	0,67	0,20
2010./11.	39,82	16,39	37	1 - 95	0,69	0,05

# RESULTS – MATHEMATICS HIGHER LEVEL

	M	$\sigma$	C	Range	Skewness	Kurtosis
2010.	50,81	21,96	48,33	0 - 100	0,198	-0,745
2011.	55,16	20,17	55	0 - 100	-0,070	-0,605
2012.	40,69	19,01	38,33	0 - 100	0,433	-0,279

% correct	do 10%	11 do 20%	21 do 30%	31 do 40%	41 do 50%	51 do 60%	61 do 70%	71 do 80%	81 do 90%	91 do 100%
2010.	1,6	6,6	12,2	15,9	16,2	14,6	12,3	9,5	7,1	4,0
2011.	1,0	3,6	7,9	12,9	17,3	17,0	16,3	12,6	8,4	3,0
2012.	3,6	11,9	18,2	20,2	17,7	12,7	8,3	4,5	2,2	0,7



# CONCLUDING THOUGHTS

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- External assessment is currently needed in Croatia
- Procedures have been adequately applied by NCVVO
- Possible anticorruptive function of examinations
- Content validity of examinations is adequate
- Exam function is still ambiguous – **the consequence of this could be that the whole process of external assessment is jeopardised**
- Once an unambiguous function is determined, exam development will be easier
- Exam construction should be led by cognitive processes and demands and not solely by curricular content

# CONCLUDING THOUGHTS

- STANDARDISATION – Current exam development includes the standardisation of examination form and procedures, but all other elements are missing. Without these, is the whole process under question?
- Presently, the State is making initial steps towards standardisation

## HOWEVER

- Can finishing exams be standardised at all?
- How do we avoid the trap of similar forms vs. standardisation?
- How can you standardise an exam in a subject that is taught for 35 school hours a year (e.g. Psychology in gymnasiums)?
- Is the focus on standardisation an attempt to (re)introduce intelligence testing?
- What effect would this have on general education, the role of teachers, learning habits, equity issues...?
- Who, apart from 'quasi-elite' higher education circles, would be interested in such standardisation?



THANK YOU!

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