



SKOLKOVO
Moscow School of Management



**International
Labour
Organization**



MANAGING THE TVET INSTITUTION

COMPUTER SIMULATOR

MOSCOW 2014

Table of contents

3

About the project	4
Approaches and technologies	5
What is the «computer simulator»?	5
Gaming process	6
Educational results	8
Conducting the simulation is easy	9
Description of the computer simulator	10
Blocks of the computer simulator	12
Criteria for comparing teams	18
Next steps	19
Managing the TVET Institution simulator —	
Beta testing seminar	20
Notes	22
Contacts	23

4

About the project

Interactive course «Managing the TVET Institution» was developed jointly with the Moscow School of Management SKOLKOVO and the International Labor Organization (ILO) for the purpose of improving the quality of management of TVET institutions. Countries involved in the development of their TVET systems can improve their skills and discover new approaches of managing modern institutions.

Interactive course based on a computer simulation

Most of the countries manage a vast number of TVET institutions, which consume a significant portion of their budgets. At the same time there is a tendency to require highly qualified management teams while the budgets are being cut.

Practice has shown that institution can be economically effective, flexible and responsive to labour market demand changes only if the management team has enough autonomy. This in turn requires the institution's management, supervisory boards, employers, and governments to have a clear understanding of what needs to be done in order to achieve long-term goals in building a modern system of TVET institutions.

Target Audience: Managers of TVET institutions (directors of institutions, representatives of supervisory boards, etc.)



Approaches and technologies

5

What is the «computer simulator»?

Computer simulations are one of the forms of modern educational technologies based on imitating a specific activity area.

Trainees are divided into teams. In order to make fast and affective management decisions participants need to divide the areas of responsibility among themselves. This form of organization facilitates the development of skills such as teamwork, delegation of responsibility, etc.

Trainees assume the position of managers of TVET institutions. Using management reports participants should analyze the situation and make proper decisions. This process requires managing group work properly and distributing the responsibility among team members. Facing real life cases and problems taken from actual management practices, trainees are required to analyze over 500 reporting parameters and make no less than 200 decisions.

Real-life and dynamic simulation scenarios ensure the active involvement of participants in the simulation game and create conditions for training and development of managerial skills. Upon completion of the game, the analysis of results is conducted, right and wrong decisions are analysed.

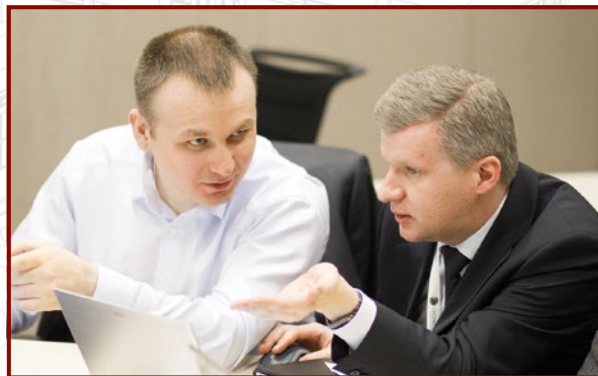


Gaming process

Gameplay is divided into rounds, and consists of several stages.

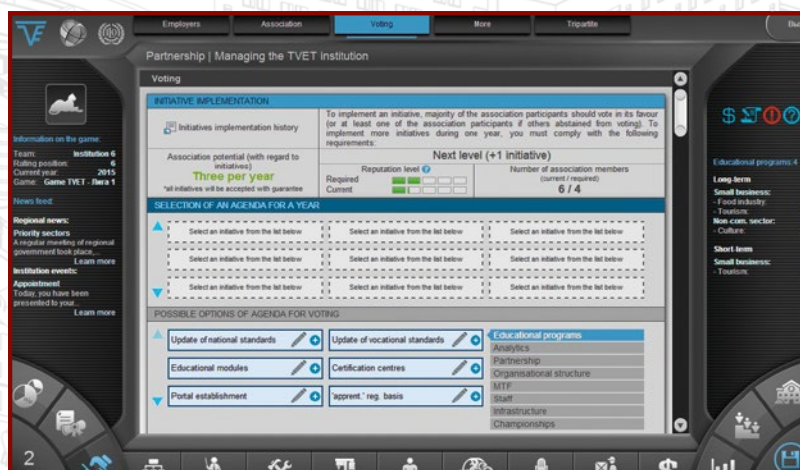
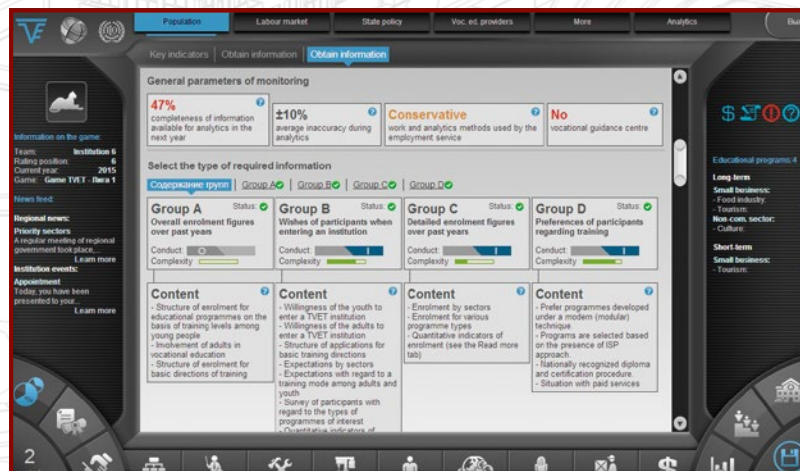
1. Decision-making in the computer simulation

Interaction with the computer model is achieved through simulation interfaces:



- decision-making forms;
- analytical reports;
- interactive maps;
- analytical graphs.

Accessible and easy to understand interface forms assures fast trainee engagement into the simulation game, therefore providing for high game dynamics.



Examples of the computer simulation screen forms

2. Plenary reports

Participants prepare reports based on the results of each round which they present to their colleagues and invited experts.



3. Final analysis of the simulation game results

Final analysis of the simulation game is an integral part of the training. Simulation moderators review teams' actions and demonstrate the achieved results. The analysis of the game results and effectiveness of teams' decisions are provided at the plenary session with participation of invited experts.



Interface forms used for comparing teams

8

Educational results

Computer simulator «Managing the TVET Institution» aims at achieving a number of educational results.

- **Helicopter view of how TVET institution is run** (present day situation, current problems that the institution faces)
- **Introducing changes at the institutional level based on the available resources and capabilities** (training of decision-making ability in a changing environment: creating a portfolio of educational programmes and trainings, effective resource management, etc.)
- **Demonstration of best practices and cases at the institutional level as well as at the level of the whole TVET system** (demonstration of effective models of establishing partnerships, income generation activities, labor market needs forecast, etc.)
- **Conceptualizing current global and regional trends and changes**
- **Training of management skills** (analysis and planning, tactics and strategy, functionalization and delegation, teamwork and systematic vision)



Conducting the simulation is easy

9

1

Preparing event moderators

1. Coach 1–2 event moderators to facilitate the simulation (1–4 days, online-training is possible)
2. All necessary documentation is provided (manuals, etc.)



2

Simulation training arrangement

1. Prepare the event hall and the necessary IT infrastructure
2. Print out game documentation (manuals, rules, etc.)
3. Set-up the simulation (passwords, etc.)
4. The simulation game can be accessed through internal and external network (network website)



3

Conducting the educational event

1. Engage the participants using the introductory presentation
2. Consult the event participants (using the instructions, as well as providing them with clues)
3. To help moderators, easy interface was developed for calculating the results, switching between rounds, etc.
4. Discuss with participants their strategies, right and wrong decisions during plenary session



—

Technical requirements (30 participants)

1. 1–2 Event organizers
2. Event hall for 20–30 people
3. Computers — 12–18, projector, flipchart
4. Internet access (if the simulation to be accessed from the external network)

10 Description of the computer simulator

You assume a management position. Your main goals are:

■ Conduct labour market analysis

You need to analyze the current needs of employers and consumers of educational services, as well as global and local trends in the regional vocational education.

■ Introduce new products to the market

You need to develop a portfolio of educational programmes. To create a new programme, you need to make 10 steps: select the type of educational programme, choose methods and forms of training, ways of financing, enrollment rate, etc.

■ Adjust main and supporting areas

New educational programmes require you to make decisions in areas such as staffing, material and technical facilities, infrastructure, organization of economic activity, etc.

■ Build partner relations

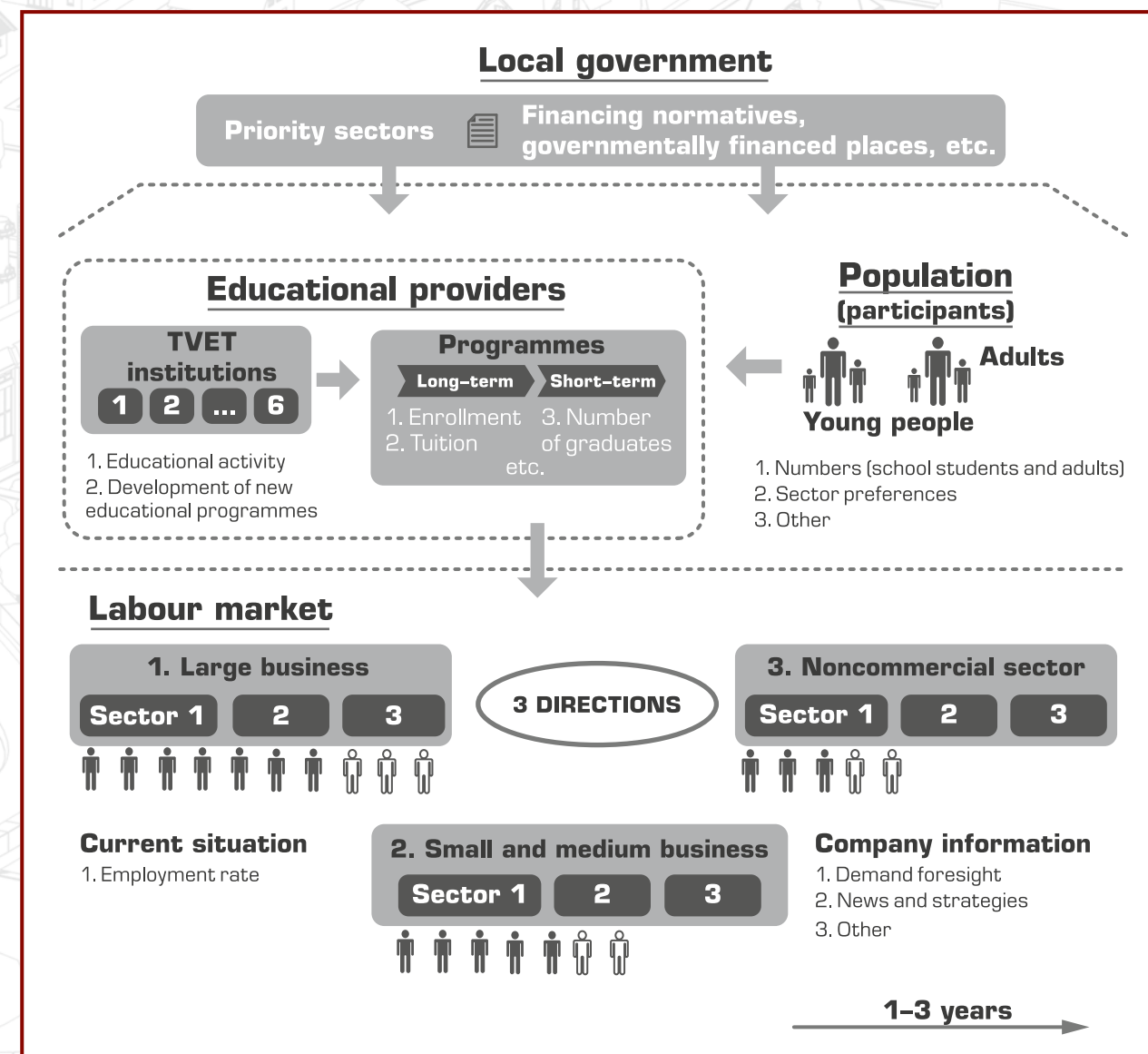
You need to create partner relations with external counterparts: business, governmental agencies, employment unions etc.

Though your main goal is to develop a portfolio of educational programmes (meeting the requirements of the labour market) and to ensure their effective implementation.



Campus of your institution

11



Simulator set-up

Development of a portfolio of educational programmes should be based on the following aspects:

- Population demand (adults and school graduated) and their wishes.
- Labor market demand, which is presented in the simulator in three areas: large business companies, small and medium enterprises and noncommercial sector. Each area is characterized by a lack (or excess) of demand for staff and retraining.
- Actions of the other TVET institutions that also develop new educational programmes, and therefore competing with you for the applicants, financial and resource support, etc.
- Governmental policy (priority sectors, normative restrictions, etc.)

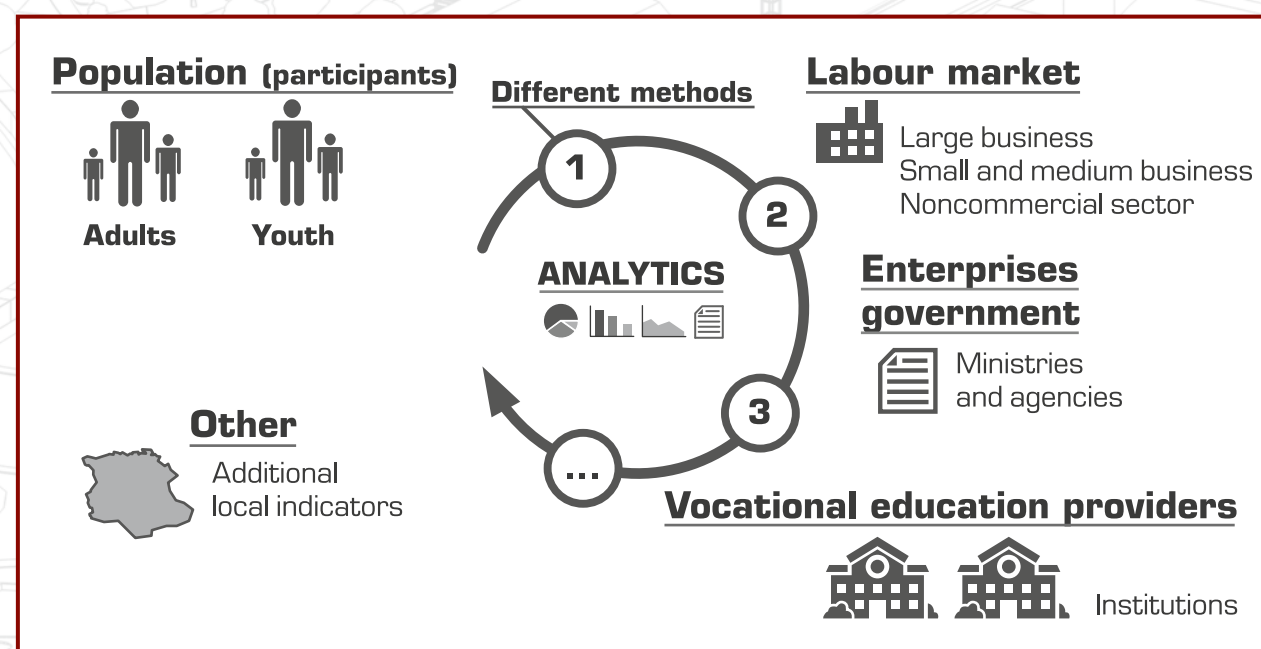
■ Blocks of the computer simulator

Simulator interface is divided into three main blocks: **main activity**, **supporting activities** and **general analytical information**.

Main activity

1. Analytics

In Analytics you need to analyze the situation on skills training market in the region and understand for which sectors educational programmes should be developed.



Structure of the Analytics block

You should also take into account governmental policy. For example, which economy sectors will be a priority for the country in the next few years.

At the beginning of the simulation game most of the information related to the wishes of the population and the labour market demand is unavailable, because it requires conducting research and surveys. Institution can conduct research and surveys independently as well as using services of research agencies and international partners.

Some of the information can be provided by governmental organizations and partners free of charge.

2. Developing educational programmes

Your competitive edge is directly related to the quality of the educational programmes that the institution provides: use of modern educational technologies and equipment, compliance with generally accepted international standards, etc.

In order to provide up-to-date and demand-oriented educational programme, you need to constantly monitor the labour market requirements as well as wishes of the population.

Development of a new educational programme includes 10 stages:

1. Choosing the type of the programme

It can be a **professional training programme**, targeting school graduates, or a **special training programme** that aims at solving unusual situations in the region.

2. Choosing economy area and a sector

Educational programmes can be created in different economy areas (large business, small and medium enterprises, noncommercial sector). Each of the areas contains 3 sectors. For making a decision you should consider that different sectors have different demand in terms of population and employers, availability of standards (national, professional, World Skills), economic characteristics (cost of equipment, normative value), etc.

3. Choosing a standard and methodology used

During this stage you need to **choose one of three development standards** (each standard has different programme content requirements) and **one of two methodologies**.

4. Selecting the mode for practical training of students

During this stage you need to choose the mode of practical training of students (**internship or on the job training**). The chosen mode affects such parameters as: attractiveness for business, employment of the graduates, their qualifications, etc.

5. Content of the educational programme

During this stage you need to choose the main programme characteristics: **set of obtained skills** (considering the national standard and requirements of employers) and **the number of educational modules**.

6. Choosing the form of educational programme

The programme can be provided in full-time, evening classes or distant-learning form. After you fulfill the requirements related to staff qualifications, material and

technical foundation, introduction of modern technologies, you will be able to create distant-learning educational programmes.

7. Choosing the form of assessment of educational outcomes

This step includes making a decision on the interim assessment and final assessment of education results. **Assessment can have a positive impact on the employability of students** in their respective fields of study.

8. Enrollment rate planning

During this step you set the planned enrollment rate. The number of students you plan to enroll for educational programmes directly affects the requirements for training facilities, equipment, staff, etc. The more students you plan to be enrolled, the higher the requirements for supporting processes you will need to meet. During this stage you also can apply for receiving quotas for publicly funded places.

9. Analysis of final requirements

Developing or adjusting an educational programme changes the requirements for supporting processes. During this stage you can analyze, if the educational programme has all of the necessary requirements.

10. Financial planning (income/expenses, tuition)

During this stage you make the decision about the tuition fee for the **students who pay for their education themselves**. When making this decision you should analyze the tuition fee of your competitors for the similar programmes as well as the average salary in the region.

3. Creating partner relations

Searching partners and working with partner-organizations

Partner relations should firstly solve a core problem of the institution and meet the requirements of employers in training skills.

The simulation has three types of partnerships: **social partnership**, **mutually beneficial partnership** and **strategic partnership**. Each partnership type has a list of resources and opportunities that you can use when you have a partner of the appropriate type.

1. Program type

Training

Retraining

2. Area and sector

Areas

Large business

S & M business

Noncommercial sector

Sectors

Sector 1

Sector 2

Sector 3

3. Standard and method

Standards (what should be taught)

State

Professional

International

Methods

Tradition

Advanced

4. Organization training in practice

Models

Internship

Apprenticeship

Places for practice

Institution

Jointly with business

At employer's place

5. Content

Skill set (complexity)

Training modules (content)

Development
Purchase
Franchising

6. Study forms

Full-time

Evening

Part-time

Distant learning

7. Assessment

Individual assessment methods

Internal exam

With employers

External assessment

Evaluation approach

Average score

High score

Add. methods

Tutoring and other

8. Enrollment and public funded places

All forms (FT, PT, evening) = groups x stud.

Orders

Public funded places

Business orders

9. Requirements analysis

MTF

Materials

Faculty

Auditoria

Practice

--

Development complexity

Program 1 ...
... Program N

10. Price, income / cost

Price for fee paying students

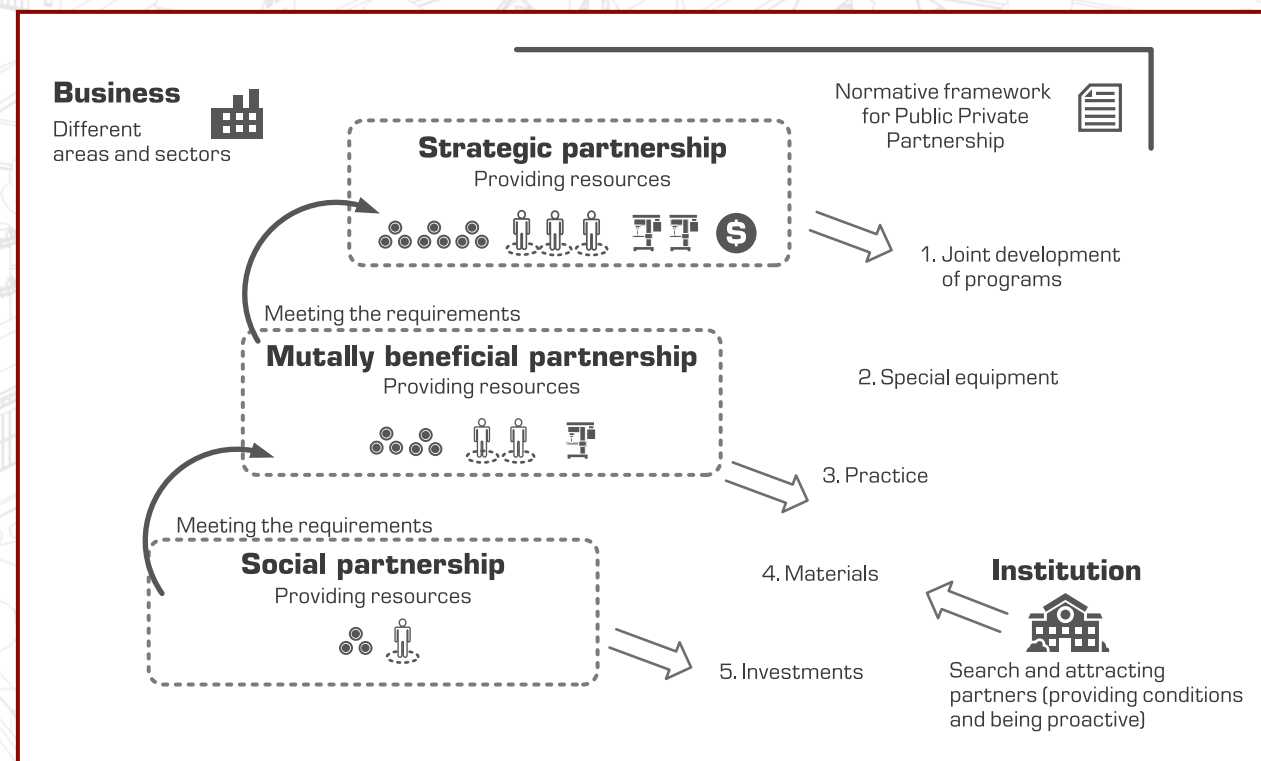
Finance structure

Public funded

Business

Fee paid students

Commercial activity



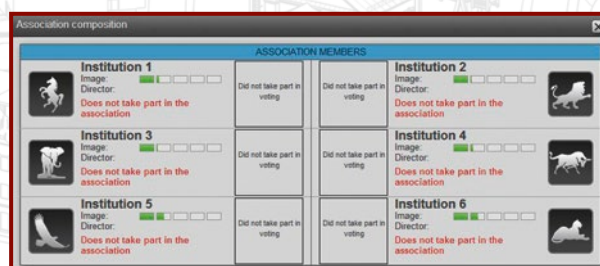
Partner relations set up in the computer simulation

In order to create partner relations with organizations you need to:

- Provide events to find and attract partners (delegate a staff who will be responsible for forming partnerships, arrange events, etc.).
- Fulfill the requirements for each partnership type.

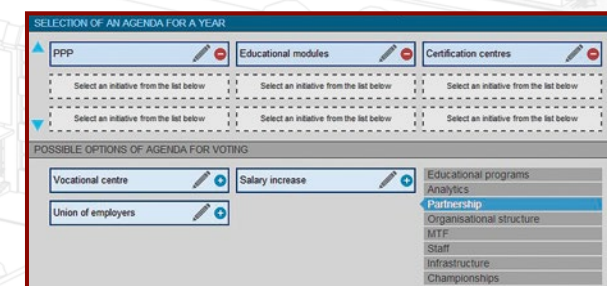
TVET Association

TVET association is a powerful tool to influence on the whole system of vocational training in the region. Making changes in the system of vocational education is possible through



Current members of the association

various initiatives. For example, successful initiative “Recognition of professional and international skills standards” allows TVET institutions to issue diplomas recognized on country and international levels for the programmes developed in accordance with professional and international standards.



Voting for the implementation of the initiatives

Supporting processes

In describing the interfaces in “main activity” we touched on only a portion of cases, problems and solutions used in the simulator. In addition, a significant portion of them lies in the sections devoted to supporting educational programmes with necessary resources.

For the educational programmes to be fully implemented, it is necessary to make decisions concerning the supporting processes:

- Cooperation with the supervisory board — **5** decisions
- HR policy (salary, staff training, etc.) — **60** decisions
- Facility management (repairs, energy saving, etc.) — **45** decisions
- Management of classroom and laboratory equipment — **40** decisions
- Maintenance and outsourcing — **6** decisions
- Finance management (budget planning) — **10** decisions
- Participation in governmental programmes, competition for grants — **15** decisions
- PR and mass media — **10** decisions

Keep in mind the requirements for supporting processes are changed every time a new programme is developed or an existing one is adjusted.

You can find more information about the supporting processes in the built-in simulator help system.

General analytical information

In this section there are 2 interactive maps: **competition map** (see “Interface used for comparing teams”) and a **map of the institution**.



Map of the Institution



Campus at the beginning of the simulation game



Campus after innovation and reconstruction

Criteria for comparing teams

As a part of the simulation game the teams are being rated. The rating is used to assess the results of the game periods and the effectiveness of the decisions that teams make.

Ranking positions are distributed after the calculation of each round. At the beginning of the game all teams have zero points and occupy the same position in the ranking. The more points the team scores, the high-

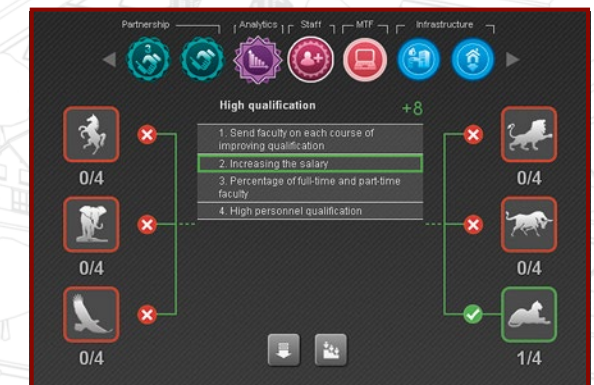
The object map is used for educational institution to interact with organizations and the visual tracking of changes in the institution, occurring as a result of the trainees' actions.

For example, if for a couple of rounds a team made a decision on reconstruction and innovation, the campus appearance will be significantly changed.

**Institution's rating
is based on the number
of captured achievements**



Capturing achievements



Team's rating

er its position in the rating. **Points are awarded for capturing game achievements.** Depending on the complexity of each achievement different number of points is awarded. Negative achievements yield negative points.

Each achievement has the conditions necessary for its implementation. Achievement is captured when all of the conditions are fulfilled.

Using rankings map participants can analyze not only the achievements already obtained, but also achievements they yet need to obtain (if all of the conditions are fulfilled). This information is to be used when developing your institution's strategy.

Next steps

Now that you are familiar with how the simulation works and its main sections, you can proceed with the decision-making process. For doing this, you need:

- Enter the simulation using access data provided by the moderators
- Go through all of the interface forms and make all of the decisions properly

If you have any questions regarding the device interface forms or scenarios, you can use the built-in help system or consult the moderators.

Managing the TVET Institution simulator — Beta testing seminar

On March 25, Moscow School of Management SKOLKOVO hosted an international seminar on the beta testing and evaluation of a new tool designed for training administrators in education. The simulator environment is called Managing the TVET Institution.

The seminar was attended by government officials, employers, and colleges from the partner countries: Armenia, Kyrgyzstan, Tajikistan, and Vietnam. There were also Russian and international experts.

The participants had an opportunity to evaluate the product hands-on and ask the developers their questions, as well as offer ideas and suggestions and discuss its content and application.

Rajabali Qurbonov (Director of Vocational Lyceum No. 66, Tajikistan):



“For the simulator to be used in Tajikistan, pilot programmes would have to be run first. That could be done in a number of institutions, including the Republican Centre for Teaching Methodology, the Professional Development Institute and especially primary technical schools and diploma-level vocational training institutions. A module could be built around computer simulator in these institutions’ syllabi as part of refresher training courses for administrators in education.”

Artashes Abrahamyan (Director of the Yerevan State College of Informatics, Armenia):



“The simulator could be used in the recruitment process for the position of the principal. It could become part of a complex selection process with other assessment elements, each enabling the applicant to gain a certain score. The evaluation process would result in the most suitable candidate getting the position.”



Masuma Bashirova (Director of Republican Scientific-Methodological Centre under the Agency of Vocational Education, Kyrgyzstan):

“In Kyrgyzstan, the simulator could be included in module-based professional development curricula or used as a stand-alone course. We have a methodology research centre that has as one of its tasks the continuing professional development of administrators in education. The simulator could be put to good use there too.”



Michael Axmann (expert in Skills Development Systems, Skills and Employability Department, ILO, Geneva):

“Clearly, the tool could be used beyond the CIS countries. It would be intriguing to see the simulator used as part of the European Training Centre’s (ETC) Principle training programme at Turin.”

Denis Konanchuk,

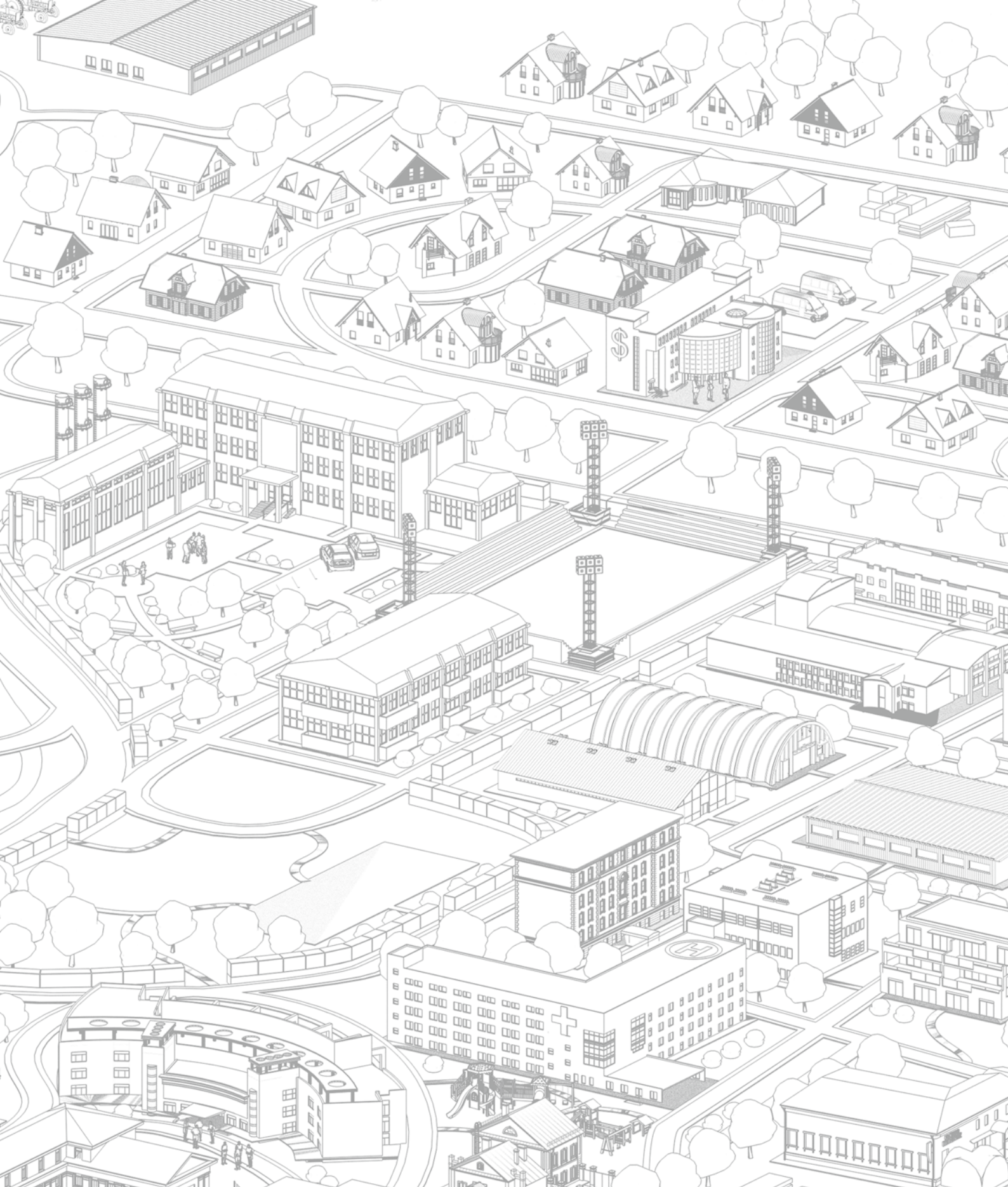
Head of the SKOLKOVO Education Development Centre

E-mail: Denis_Konanchuk@skolkovo.ru

Valeria Dovgalskaya,

Head of the International Program to Strengthen the TVET Systems and Labor Markets in CIS, Asia and the Middle East under the cooperation of the Russian Federation and ILO

E-mail: Valeria_Dovgalskaya@skolkovo.ru



MOSCOW 2014

