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Trainers Handbook

Construction Tycoon Serious Game

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Address of the game: <https://tycon-project.eu/index.php/the-game/>

<p><i>Stakeholders</i></p>	<p>The main stakeholders are trainees / apprentices and instructors / trainers / teachers:</p> <p>The group of trainees (also apprentices) mainly consists of young people or young adults employed or engaged in the construction branch. They are predominantly male, but all genders are addressed.</p> <p>TYCON will explicitly enable and support trainees to develop entrepreneurial thinking and acting at an early stage of their career.</p> <p>User studies (e.g. of the University of Applied Sciences in Cologne) show a very high affinity by trainees for communication and information technology (PC, tablet, smartphone) and good familiarity with virtual games (Status February 2020).</p> <p>Basically construction activities are attractive to young people (see: construction is one of the most frequent and intensive activities of children). These impressions have empirically been underlined by work placements for school-children or similar structured work experiences.</p> <p>The group of instructors (also trainers and teachers) usually stems from master craftsmen (companies, training centres) and academic teachers (vocational schools). They usually cope with training contents set by formal curricula.</p> <p>In initial vocational training of the building branch (but also in other craft trades), entrepreneurial skills are generally not taught (this only happens in further education and training seminars). TYCON already starts in the initial vocational training and facilitates the way to further education and training by raising awareness for entrepreneurship. Hence, for both groups TYCON represents a real complementary option and added value building upon traditional vocational training, both in terms of content (entrepreneurial skills) and didactic / methodological aspects.</p>
<p><i>Narrative</i></p>	<p>TYCON deals with practice-oriented topics from the construction branch and entrepreneurial behaviour in order to provide with the highest possible transfer quality for the stakeholders, while paying highest attention to full consistency with the trainees' world of experience.</p> <p>TYCON mediates:</p> <ul style="list-style-type: none"> • construction-related content in broad outline, which provides an overview of the entire spectrum of the construction trades in Europe and motivates users to take a closer look at construction technology • entrepreneurial thinking and acting, which enables the player to put himself / herself in the role of an entrepreneur

Particular aspects are focused in so-called case leads. These are divided as follows:

- INTO ACTION – Taking the initiative
- RESOURCES – Mobilising others
- RESOURCES – Motivation and perseverance
- INTO ACTION – Learning through experience
- IDEAS AND OPPORTUNITIES – Ethical and sustainable thinking

In each module of them a player manages a number of building projects in Europe on three playing levels.

Construction content is didactically reduced by combining craft on the one hand and business organisational activities on the other hand into distinct packages. To be more specific: a renovation of a church is not described in all technical details or even thematised as an order with all assigned works (e.g. quantity survey, offer, execution, acceptance, invoicing) rather the essential aspects of order processing are presented in an overview.

An instructor in vocational education and training starts at that point and transfers the subject matter into regular lessons.

Players ask themselves about any sense of entrepreneurial competence in a building game. Within a classroom-based course at an educational institution, **the instructor** comments on this individually.

TYCON considering the Italian case lead

Players receive introductory information at the beginning of the game.

Short videos, animations based on sequences of images or presentations are useful to initiate the playing process.

TYCON starts with the selection of a place of action. Initially the player manages a **start-up company** and takes over a building contract in Italy.



Fig. 1: Location of the action in Europe

Then, a virtual coach, Mr Buttinski, introduces the players:

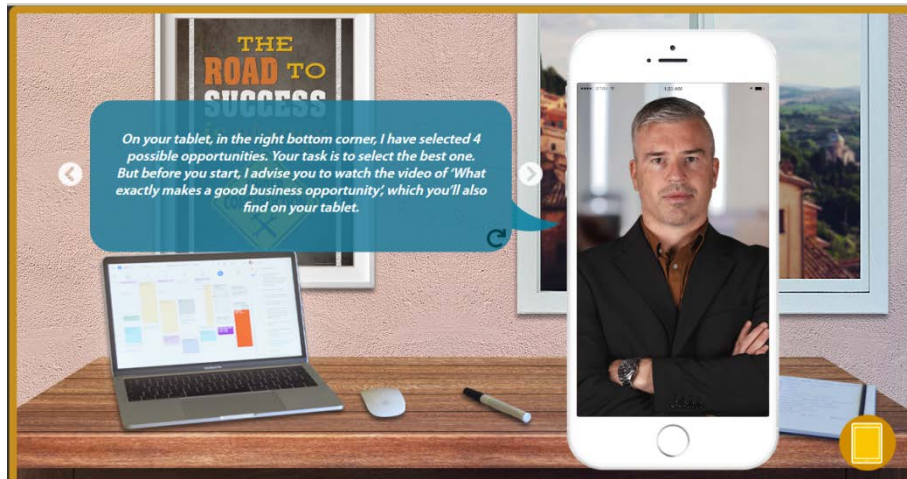


Fig. 2: Welcome and introduction of Mr Buttinski, explanation of the game idea (1)



Fig. 3: explanation of the game idea (2)

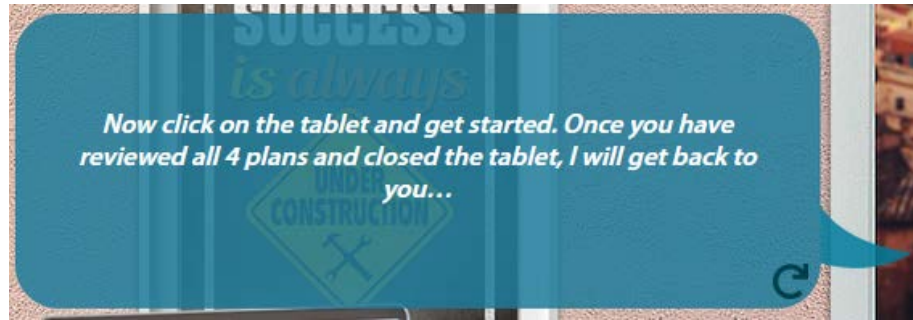


Fig. 4: explanation of the game idea (3)



Fig. 5: By clicking on the tablet symbol, the player gets more information about his/her tasks. At this point he/she already learns about decisive criteria for successful entrepreneurship in the construction branch.

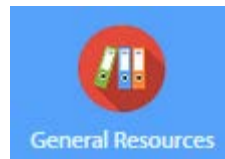
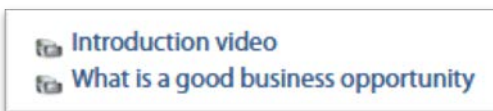


Fig. 6: At first players watch a short video explaining the objective of the game by choosing **General Resources**. Then he/she receives a short essay about what a good business idea is about.

Fig. 7: Selection area (video / business opportunity)



The **HOME**-button leads players back to the overview.



Fig. 8: Introduction video

By clicking the button **What is a good business opportunity** players get short definitions of aspects of successful entrepreneurship.



Fig. 9: Selection range to define good business opportunities

The definitions mean:

- **Opportunity:** Does this order suit the user's company? Is this order an benefit to the user's entrepreneurial activity?
- **Construction:** Is this order technically feasible for the user's company?
- **Planning:** Is this order financially and organizationally feasible for the user's company?

If necessary, these definitions should be explained and deepened by trainers and instructors.

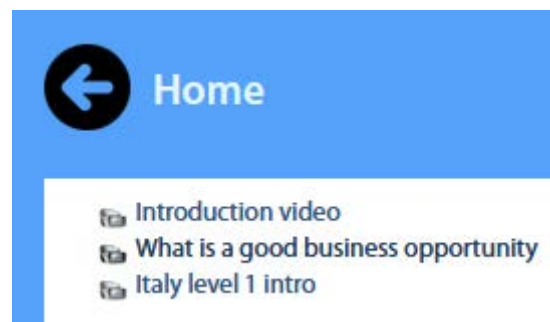


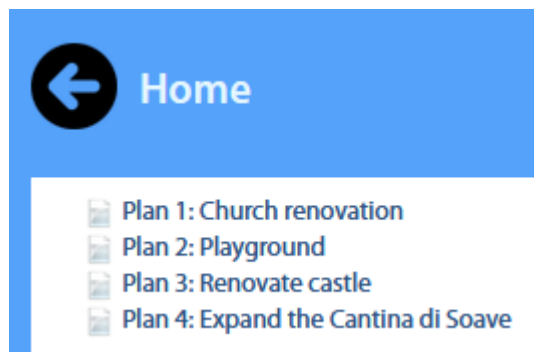
Fig. 10: After the first two points have been worked through, the first game level is available:



Fig. 11: The level starts again with an introductory video to familiarize players with a concrete situation.



Fig. 12 + 13: After the introduction video the actual strategy game starts. Players compete with three competitors and then decide upon four **business plans**. Only one of them brings the entrepreneurial success for the start-up company.



Players get a description of the business plans through

deposited documents as pdf files:

- **Plan 1: Renovation of a church**
(https://emerge.ou.nl/emerge/streaming/296/de_DE/italy-level1-business-opportunity1.pdf)
- **Plan 2: Playground**
(https://emerge.ou.nl/emerge/streaming/296/de_DE/italy-level1-business-opportunity2.pdf)
- **Plan 3: Renovation of a castle**
(https://emerge.ou.nl/emerge/streaming/296/de_DE/italy-level1-business-opportunity3.pdf)
- **Plan 4: Extension of the Cantina di Soave**
(https://emerge.ou.nl/emerge/streaming/296/de_DE/italy-level1-business-opportunity4.pdf)

HINT: Files can currently be accessed within the game. It may be useful to save them locally so that they can be called up again later.

	<p>In the appropriation phase Mr Buttinski asks players to select a project and to come up with an appropriate feedback on his / her choice (good or less good). Mr. Buttinski also explains the reasons and the background for his evaluation.</p> <p>After completing the first level, players take a look at an intermediate ranking and continue playing in the second level.</p> <p>Instructors in vocational training further differentiate and specify the missions and thus transfer the experience from TYCON to vocational training.</p> <p>Summary</p> <p>Learning contents are offered in the course of the game as interactive, narrative adapted action assignments. Players are confronted with problems in a system-controlled manner. In the course of the game, professional and entrepreneurial challenges enlarge (levels 1 - 3), but always remain in the acting context. Didactic structures of all levels remain the same. These provide players with confidence and allow them to concentrate on content and entrepreneurial requirements.</p>
<i>Embedding in the course / education</i>	<p>Playing is not only a basic human need rather it is the original learning method practiced from a very young age.</p> <p>It is obvious to consider the play instinct in every human being for targeted learning applications. TYCON takes up the positive gaming experiences ("pick up users where they are") and transform them to levels of learning. Learning takes place more intuitively and informally and thus contributes to the "lifelong learning" that is demanded by all. Young adults (trainees / apprentices) are particularly addressed in order to give them a first view of entrepreneurial thinking and acting.</p> <p>Professional expertise in the construction branch also increasingly gear to aspects of international trade. Transversal competences like action awareness are becoming decisive. IT increasingly influences the design of operational processes. Entrepreneurs are expected to act independently. At the same time they should be able to work in teams and to lead the like. In addition to specialist knowledge, intellectual flexibility is required to deal with changing situations and to interact in changing personal contexts (age, educational background, ethnicity, religion etc.).</p>
<i>(learning) activities and outcomes</i>	<p>The overall learning objective is to develop entrepreneurial thinking and acting. This is achieved by increasing challenges. Levels of difficulty refer less to construction aspects rather to company-specific management processes</p>

(corporate strategy, corporate goals, human resource management, dealing with problems and unexpected situations, etc.).

Playing and learning strategy

Essential task of TYCON is a stimulation of learning processes to initiate and train entrepreneurial thinking and acting while playing. At the same time, learning processes take place in TYCON themselves. Serious games are predominantly suitable for a problem-solving learning strategies. Players work out solutions by means of offered media, texts and link collections. Challenges in TYCON are demonstrating players connections between technical processes of construction projects on the one hand and entrepreneurial thinking and acting required for it on the other hand.

Considering this, players carry out series of assignment orders in European countries, divided into levels (corresponding to EQF levels 3 - 5). The levels of difficulty of the entrepreneurial decisions increase as the levels are raised. The focus of action assignments is the aspect of action individualised in the case lead of the respective country.

Furthermore, structures of the construction companies arise during the course of TYCON. Players start as start-up company and work their way up to the construction Tycoon.

Players are permanently accompanied by an instructor. In this way, contents of structural and / or entrepreneurial nature are further differentiated and clarified. In this case TYCON is part of a blended learning concept.

Tutorial support stands for a measure of controlling the learning objectives and to keep motivation of players high. Supplementary tasks (e.g. from the field of construction technology like comparison between medieval and modern wall constructions) or testimonies from daily life of building entrepreneurs round off TYCON.

Reviewing the learning success

Learning success is checked, among other things, through targeted knowledge and understanding questions. Specific questionnaires are developed for this purpose (printed and / or virtual).

Pure knowledge inquiries lead to concrete, verifiable right or wrong statements. By means of open, "action-oriented" questions the understanding for entrepreneurial thinking and acting is determined. These types of questions do not have a concrete result, but will be discussed with the instructors and with the other course participants.

