

Learning-by-doing studies on the field of forwarding

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The CONI board game

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Abstract

Applying the learning-by-doing method is the most effective way to develop practical skills on the field of logistics. In the development of the CONI strategic boardgame at Szabó-Szoba R&D Laboratory, Széchenyi University Győr we are focusing on the importance of transportation and forwarding rules, events and risk factors to support the participants in getting real-life, problem-oriented experience about the nature of commercial and technical aspects of transportation.

Index Terms— forwarding, learning-by-doing, improve logistics skills, interactive board game

1 Introduction

Excellent theoretical and professional knowledge of the own specific study area is not enough in today's society. New competence requirements are coming from the corporate sector. The integrated teaching means combining different curriculum in practice orientated lesson.

We are working on the development of the CONI board game environment for transportation and forwarding studies. The aim of the game is to support participants to be familiar with the transport and forwarding terms, events, risk, etc. on the learning-by-doing way.

In this frame students should get to practice and apply their basic theoretical learning in prompt and real decision making situations. There are special board games in educational teaching methodology widely used at other Universities in Europe and North Amerika. These games simulate active learning.

When the participants are playing with board games they can make decisions to manage forwarding operations that are simulated physically. The general business games or total enterprise board games are aimed to teach objective decision-making and decision synthesis. This functional board game is intended to teach specific skills in a particular logistics area.

The CONI board game does not require computer or any additional equipment. We provide a sequential decision-making exercise simulated on the board.

The CONI game provides a virtual forwarding environment for training decisions-making skills in the area of international logistics - and in the same time participant (students or graduated people) can simply learn the rules of forwarding.

CONI presents forwarding processes as time-bound, continuously evolving, dynamic processes. During the game participants do some extra profits which cover a broad range of

various business topics. For example: profitability and variability. Fixed costs have key role and the game will facilitate the understanding of these issues. This board game will also provide an extensive and illustrated experience how forwarding is going on the field of land, sea and air transport. It is possible to study many different approaches and wide range of forwarding rules on the same platform.

The main features of CONI are process-based thinking, analytical thinking, problem-solving, goal orientation, ecological thinking, mobility, and the overall interest of the importance of visualization.

One of the most important advantages of the game is that the economical impact of the decisions and practical measures are directly visible. The logistics board game supports the growth of professional identity in business logistics well.

The CONI environment can be also used for teambuilding, as it requires a partner to play it. The participants will get a common experience and common decision making and playing will familiarize the new students to each other. Originally it is not a team game but the team group is continuously going through different communication and interaction situations. Analysis is an important part of the CONI and the learning process and various written and oral reports and presentations can be part of the learning.

Combining the course of communication with the game learning could provide excellent results. CONI game supports the learning of transport and logistics professional vocabulary in english and utilization of the various reports available can be used.

2 Learning with board game

Modern board games offer a rich and engaging game experience combined with a strong focus on curriculum standards and interpersonal interactions. By combining a high level of complexity and vibrant themes, these titles keep players engaged in active learning throughout the game.

Board games are important tools to provide hands-on and heads-on skill and knowledge development for people of all ages on all subjects. Not only do well-designed games create an engaging atmosphere, they also provide a nonthreatening, playful, yet competitive environment in which to focus on content and reinforce and apply learning.

Mistakes are useful and point out what we need to learn. The board itself provides a visual metaphor to help connect information. Game elements, discussions, and problem solving with

fellow team members about the content are vehicles for learning. Subtle redundancy to reinforce learning and insure retention should be incorporated into the game design.

Good questions, problems to solve, and situations to consider allow players to think through and apply what they learn. Effective games serve to organize information in a conceptual framework and to make it concrete. They provide analogies and metaphors to link new information.

When played in teams, members learn together; no one ever feels singled out for not knowing an answer. Questions help to verify understanding and to signal where more learning is needed. For those who learn best from concrete specifics, games transform abstract concepts. Others, who need to begin with the big picture, are supported by the metaphor(s) of the game itself. Games are ideal to accommodate different learning styles. In addition to requiring critical thinking, team-based board games help to build communication and relationship skills as players work face-to-face to answer questions or solve problems and see that together they often figure out something they thought they didn't know. The power of collaboration becomes apparent to all and, in organizational settings, can transform working relationships.

The board game environment is excellent for supporting the formal theoretical studies – in our case these are:

- commerce, transport and logistics
- distribution
- forwarding rules, terms

Commerce in its wide sense is the act of buying and selling goods and services, and the exchange and distribution of goods and services for money. It is the moving of goods from those who want to sell, to those who want to buy. Commerce in its narrow sense means the trade between buyers and sellers in different countries.

Transport (logistics): this is the carriage of goods by land, sea or air and the work of all the people involved. The task of logistics is to forward: the proper product to the proper place in the proper quality and quantity in the proper time.

Distribution is the process of physically satisfying the need or demand for goods and services. It is a process by which both industrial and consumer goods or services are transferred from the producer to the to the final consumer or user. The transfer of possession mostly involves physically moving, or transporting goods, for which the commercial term is visible. The vast majority of transfer of goods and services are carried out using the normal means of transport, by land, sea or air.

Transport is first used to move raw materials to where production processes are located and then again to move semi-finished goods. In the final stage, transport moves goods from a producer's final production location to either the wholesaler's or direct to the consumer's home.

International sales contracts normally include commercial terms. International trades use international terms, the meanings of which have been agreed by most of the trading countries of the world. While getting the goods from the seller to the purchaser there are many costs: packing, obtaining documentation, insurance, freight, duty etc. and the two parties must decide before signing a contract who is going to pay what.

Incoterms define who bears the costs and risks of the delivery of the goods and where is the point in the process of forwarding where responsibilities are passed over. For example when the buyer agrees to take delivery of the goods from the seller will quote a lower price. The first version of Incoterms was issued by the International Chamber of Commerce in Paris in 1936, and there have been several revisions since then.

3 The CONI board game: functions under development

We have started the CONI development in August, 2012. In the actual phase of the research we are concentrating on finding and collecting all the necessary functions of the CONI environment. In this chapter we are giving a short overview about the actual state of the board game development process.

3.1 Principles

- The aim of the game to support participants to be familiar with the transport and forwarding terms, given and risk on the learning by doing way
- Demonstrate all kind of transportation and forwarding tradeoffs, problems – form the fields of
 - Risk management
 - Fleet management – routing, scheduling, considering driving time (AETR), etc.
 - Finance and juristic side of transportation
 - Fix const, variable cost, extra cost (penalty. loan, etc).
 - Make contracts for transport (price, responsibility, deadlines, delivery in time conditions, etc).
 - Theoretical background

3.2 Demonstrated parameters and problems of transportation

- Risks of gameplay
 - Time window problems – unused capacity
 - Arrive earlier...waiting
 - Late
 - Waiting for products at the distribution centre
 - Searching for transport tasks – unused capacity, uncovered cost
 - Driving time – optimize fleet and time
 - Waiting near the partner
 - Waiting at parking lots
 - Pilots on holiday
- Risk Cards – sanctions: waste time, extra cost
 - Road conditions, weather
 - Traffic jam
 - Stau
 - Accident
 - Demonstration, strike
 - Human mistake
 - Organization
 - Administration
 - Failure
 - Extra cost and waste time
 - Able to decide...i.e. change the tyres or take risks (pull other risk card)
 - Traffic control – extra cost waste time
- Insurance for the transport or for the truck
 - Decrease the extra const
 - Increase the fix cost

- Seal (“plomb”)
 - Half loaded truck with seal
 - More money
 - Unused capacity
 - Half loaded truck without seal
 - Less money
 - Option to bathing more forward
- Outsourcing
 - Option to outsourcing a transport to one of participant

3.3 Parts and participants

- Board
 - Constructed from hexagonal elements for each training
 - Flexible to model different geographical conditions and make various trainings
 - Each cell mean the same distance (for example 80 km), it make us commutable the spent time (like the speed of the truck is 80km/h)
 - Dedicated cells for special cards...forward, risk, theoretical question
 - Numbering the cells
 - Flexible layout
 - Start the dedication of cells from left, upper corner (numbering the forwarding tasks start and end point on the same way)
 - Depot for each participants
 - The truck have to go back in defined time
 - Parking places
 - i.e. For spend rest time
- Round counter
 - Count the number of round, like date...

- Dice
 - 2 dices
 - Number
 - Colour
 - Risk card
 - Question
 - Forward
 - 3 slide of transport...distance is on the other dice
- Cards
 - Forwards
 - Departure cell
 - Arrival cell
 - Number of rounds...the deadline calculated from the contract signing round number
 - Risk level
 - Price
 - With options (with-without seal, with-without insurance)
 - Risk
 - 2-5 set of risk cards with different risk levels
 - Defined the actual pack in the “forwarding contract”
 - Pull on the Risk cell
 - Theoretical questions
 - Question from the field of transportation, forwarding, logistics
 - Grate answer - extra round
 - Wrong answer – the money agent inform the participant about the great answer and later the participant can get back the same question
 - CMR doc fulfilment
- Trucks
 - 1 truck = 1 truck of the company
 - Different colours for each company
 - 2x6
 - 2+2 cabin
 - 2x4 load

- Participants
 - Directors of forwarding companies
 - Money agent

3.4 „Game play”

- Game start
 - Every player has equal money and 2-2 trucks
 - Constructed board layout
 - Mixed cards
- Before each throwing the participant have to pay the own actual fix cost
 - Depend on position of trucks, number of trucks
- The participants throw with dice
- Truck should go back in defined time and able to park in park places
- Participants can buy trucks
 - The fix cost is increasing
 - They need to pay the cost of administration, office, etc.
 - The truck can work when the fix cost already passed (so all permission is ready)
- Prices and other conditions are secret, just the player and the money agent know

4 Conclusion

Experiences of using business games show that they present a highly-motivated teaching method and an educational technique for active learning by engaging students in doing information processing and applying for making decisions, analysing consequences of the decisions, improving decisions. Working in teams and role-playing promote collaborative learning groups in the game.

Learning programmes have to focus on the growing competence requirements of the business sector.

In the prospective CONI board game the complexity of logistics, transportation and business can be taught and studied at the same time. The power of the business game in teaching and learning is based on real-time transactions, experimental learning and group-working. Development work has consisted of eg student task development (pre-tasks and reporting before and after the game) for both individual course and integrated course developments.

Board games provide exceptional, cost-effective resources.

They:

- incorporate heads- and hands-on learning
- summarise and reinforce important information in an easy-to-grasp format
- reduce the time needed to learn, remember, and apply new information
- promote discussion, collaboration, and build communication

Face-to-face games are a critical tool in our arsenal of educational products. The games described here are valuable supplements to other education tools. Games are useful, effective and enjoyable for graduated and undergraduated people. Board games provide many educational and teaching benefits and have proven their value when designed appropriately for learning.

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