

Fostering situational interest and cognitive activation through complex business simulations

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I. Introduction

- Business simulations contribute to the development of knowledge about economics, understanding of business processes, and decision-making

II. Research question

- Is there a relation between cognitive activation and situational interest in learning processes with complex learning arrangements?

III. Theoretical framework

Complex learning arrangements (Achtenhagen, 2001)

- Scenarios of complex problems with relevance to life, reality, and interests
- Offer learners opportunities for (complete and cooperative) action and experience
- Imply a cognitive activation of the learners

Multimedia design

- Multimedia design of the environment can contribute to situational interest and cognitive activation

(Hidi & Renninger, 2006; Makransky et al., 2020; Foertsch et al., 2017)

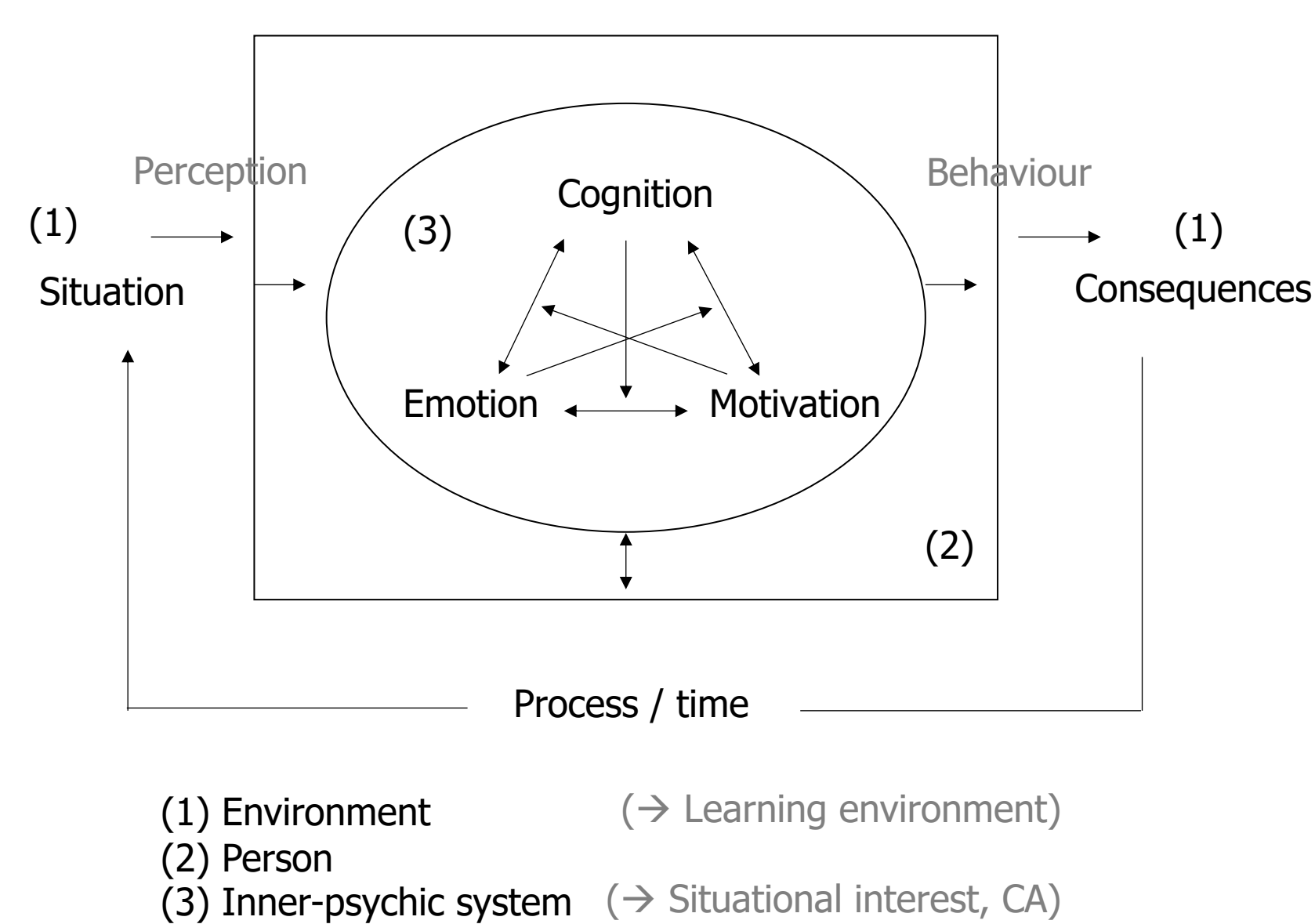


Fig. 1: Person-environment-interaction (adapted from Becker, Oldenburger & Piehl, 1987, p. 433)

Interest

- Individual interest vs. situational interest
- Situational interest marks the connection between the actual learning content and the person related to the learning setting (Hidi, 2006)

Cognitive activation

- "the potential to trigger students' conceptual involvement with the learning task" (Kunter et al. 2007, p. 43)

→ Both are short-term and interrelated concepts, considering the reciprocal relationship between the psychic components of emotion, motivation, and cognition (Becker et al., 1987)

IV. Method

Sample

- $N = 35$ students (29 m, 4 f, 1 d)
- Age $M = 22.2$ years
- Foundation in Economics (summer term 2021 and winter term 2021/2022)

Complex learning environment

- Business simulation ("Auto Manufacturing", IndustryMasters)
- Students (working in groups of 3 to 4) had to manage an internationally operating automotive production company for eight weeks over 16 quarters to play
- Business decisions (R & D, Production, Marketing, HR, Finance, Company)

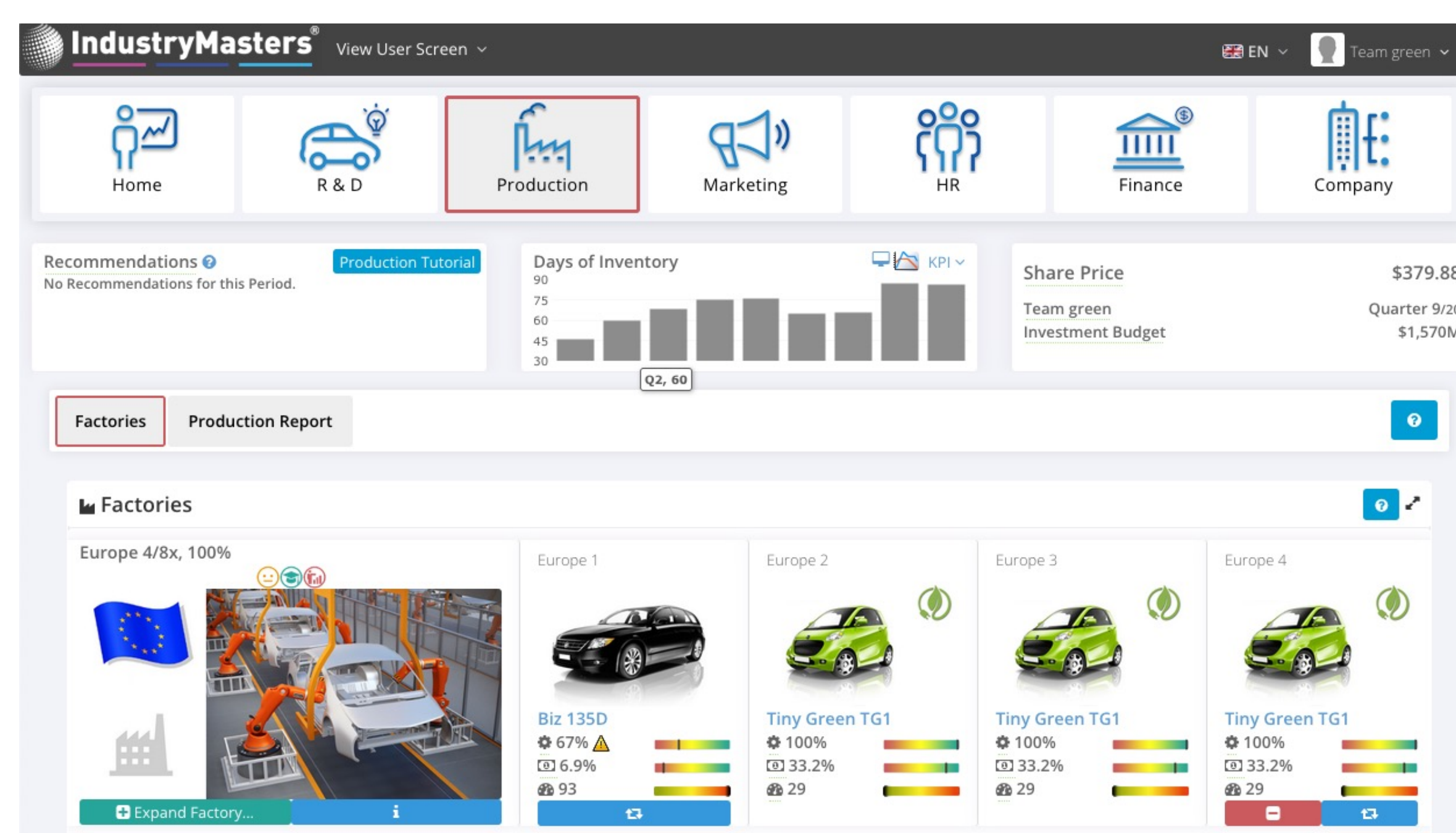


Fig. 2: Business simulation ("Auto Manufacturing", IndustryMasters, n.D.)

Data gathering

Online questionnaire (weekly, over eight weeks)

- Individual interest in economics and business processes (4 items)
- Maintained situational interest (5 items) (adapted from Rheinberg et al., 2001)
- Cognitive activation (11 items) (eight items adapted from Baumert, 2019)
- Pleasure and arousal (Russell et al., 1989)

Procedures of analysis

- Correlations
- Exploratory factor analysis (EFA)
- Analysis of variance (ANCOVA)

V. Results

Cognitive activation

- Exploratory factor analysis (EFA) showed a two-factor solution explaining 65 percent of the variance (Cronbachs $\alpha = .895$, $KMO = .896$; Rotation Varimax)
- Factor 1: "task-related cognitive activation", Cronbachs $\alpha = .901$ (Item example: The tasks are connected with questions that cannot be answered spontaneously, but that force you to think.)
- Factor 2: "design-related cognitive activation" Cronbachs $\alpha = .774$ (Item example: The multimedia design of the learning environment arouses interest in taking a closer look at the topic.)

- Significant positive correlation between situational interest and cognitive activation ($n = 229$, Spearman $r_s = .589$; $p = .000$)

Situational interest

ANCOVA (corr. $R^2 = .688$): significant effects of:

- pleasure ($\eta^2 = .092$, $p = .000$),
- individual interest ($\eta^2 = .161$, $p = .000$),
- and design-related cognitive activation ($\eta^2 = .303$, $p = .000$)

VI. Discussion

- Simulation-based learning in business administration has the potential to promote cognitive activation and situational interest

- Results support the assumed interrelation between cognitive activation and situational interest

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