WinHR

Westcoast Institute
for Human Resources

The Impact of Game Design Elements on Participants' Reactions in Gamified Assessment

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Contents

Introduction
- Game Design Elements
- Procedural Justice
- Hypotheses

Method
- Participants
- Instruments
- Design

Results
- Hypotheses Testing

Discussion
- Explanation
- Limitations and Research Recommendations
- Practical Implications

Introduction

Purpose

Game-Based Assessment (GBA) is increasingly used in recruitment and selection. The purpose of this study is to investigate the impact of different design elements on participants' reactions towards a GBA in self-assessment and selection settings.

→ **How do different game design elements impact the acceptance of GBA?**

Definitions

Gamification = the "use of game design elements in non-game contexts." (Deterding et al. 2011)

Gameplay "is all the activities and strategies game designers employ to get and keep the player engaged and motivated to complete each level and an entire game." (Prensky, 2002)

Game-based assessment is defined as a method of data collection used to make inferences incorporating gaming or gaming elements and psychometrically developed assessment based on information and communication technology (Warszta & Siemsen, 2017, April)

Game Design Elements

Scoring	Level	Leader boards
Teams	Time constraints	Goals
Rewards	Feedback	Story

Juul (2005); Salen & Zimmerman (2004)
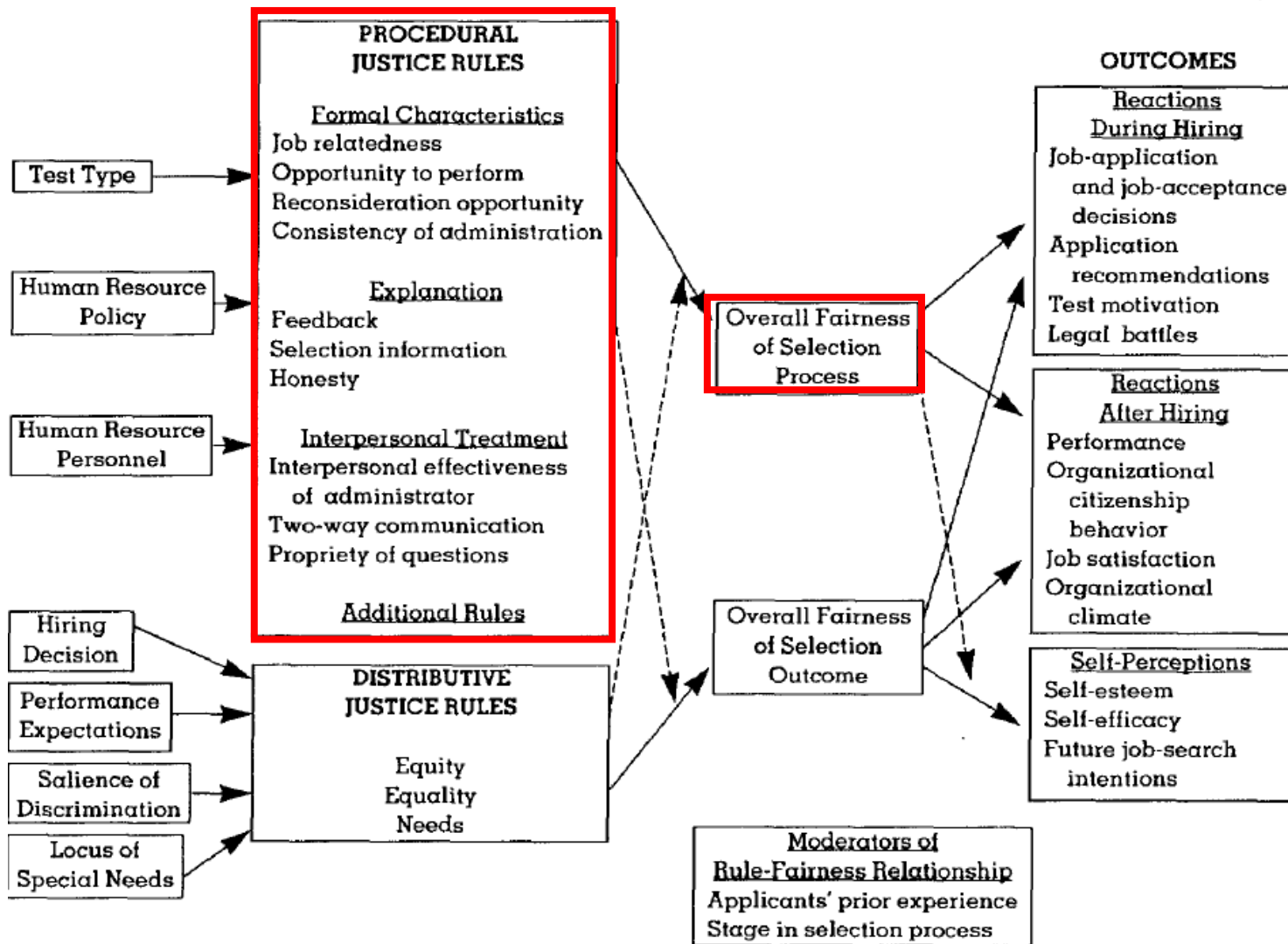
Gilliland's (1993, p. 700) Model of Applicants' Reactions To Employment Selection Systems

Salience of Procedural Justice Rules

Positive relationships with the overall fairness of selection process (*process fairness*) were found for

- *Job relatedness* and *face validity* **(Hausknecht, Day & Thomas, 2004)**

- *Opportunity to perform* **(Hausknecht, Day & Thomas, 2004)**

- *Timeliness of feedback* **(Dineen, Noe & Wang, 2004)**

Matching Procedural Justice Rules and Game Design Elements

Procedural Justice Rule	Game Design Element
Job relatedness / face validity	Story (e.g. business setting vs. fantasy setting)
Opportunity to perform	Levels
Feedback	Scoring (e.g. immediate scoring)

→ **How do these elements impact process fairness?**

2 Additional Questions

What is the effect of graphical elements on process fairness?

How does the context (self-assessment vs. selection) impact process fairness?

Pictures: Lord of the Rings (Beam Software, 1985); The Last Ninja (System 3, 1987)

Hypotheses

H1: „A business-related background story impacts positively on process fairness."

H2: „Levels impact positively on process fairness ."

H3: „Immediate scoring impacts positively on process fairness ."

H4: „Graphical elements impact positively on process fairness."

H5: „A self-assessment context impacts positively on process fairness."

Method

Sample & Instruments

- 36 participants (23 female, 13 male)
- Age: between 18 and 42 years (M = 22.25; SD = 4.61)
- Work experience: between 0 and 24 years (M=3.22; SD=4.73)
- Selection procedures completed: between 0 and 15 (M=2.77; SD=3.71)

Dependent variables

- *Process fairness*: 3 items by Bauer et al. (2001); α between .81 and .96 ; sample item: "Overall, the assessment method was fair."
- *Acceptance in self-assessment*: 3 items based on Bauer et al. (2001); α between .92 and .96 ; sample item: "Overall, the self-assessment method was fair."

Controls

- Age, gender, work experience, and the number of selection procedures the participants had completed before the experiment

Design

A policy-capturing design experiment (cf. Dineen, Noe & Wang, 2004) was conducted. In a 2x2x2x2 design sixteen vignettes were formulated testing the impact of the four independent variables.

- background *story* (business vs. fantasy),
- *levels* (levels vs.no levels),
- *graphical elements* (pictures vs. no pictures),
- and *scoring* (scoring vs. no scoring)

Each vignette described a GBA with a different combination of design elements. For each vignette participants were asked to rate the *process fairness* of the GBA in a *self-selection* (low stakes) and *selection* (high stakes) context.

The Game Based Assessment takes place in a consulting company. You are working as a junior consultant and have to complete tasks in order to become a managing consultant. To do this you interact with colleagues and customers and solve tasks. The screen shows your contacts. You can see the questions of your conversation partners and can choose your answer from a set of possible answers. After each answer you get 0 - 5 points, depending on whether the answer was correct or not correct. The difficulty of the game increases with the playing time. Depending on the progress of the game, you will level up and earn rewards. You go through different ranks.

Results

Results

Independent Variables	B	SE(b)	*ß*	R²
Step 1: Controls				.03
Gender	-.18	.07	-.08*	
Age	-.03	.01	.12**	
Number of selection procedures	-.02	.01	-.05	
Step 2: Experimental Manipulation				.30
Gender	-.16	.06	-.07**	
Age	.03	.01	.13**	
Number of selection procedures	.02	.01	-.05*	
Selection vs. self assessment	.08	.06	.04*	
story: fantasy vs. business	1.09	.06	.50**	
Graphical elements	.16	.06	.07**	
Levels	.21	.06	.10**	
Feedback	.14	.06	.06*	

Note: dependent variable: *process fairness*; * p < 0.05; ** p < 0.01; Gender: 1=male 2=female

Hypotheses

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All hypotheses were confirmed. Strongest impact was found for the background story.

Discussion

Discussion

Explanation of the results

Overall, results are consistent with justice theory.

A business-oriented background story make the GBA look like a work-sample test.

Limitations and Recommendations

No real-life setting

Results should be replicated with a larger sample.

Practical Implications

A business-oriented background story, levels, scoring, and pictures could be used to improve participants' reactions towards GBA.

Thank you for your attention!

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