

# Playing the game to tackle work-related stress

*The need for evidence-based solutions to the problem of work-related stress among employees in the Netherlands is increasing. Research institute TNO suggested that managers might learn about the issue by playing a specially designed game based around work-related stress. This led to the development of The Engagement game which, it is hoped, people in leadership roles will use to explore how to stimulate workers' enthusiasm, and better manage work-related stress.*

## Background

Work-related stress is one of the most serious occupational hazards in the Netherlands. It is caused by a variety of factors, including the content and organisation of work, the management style of supervisors and the organisational culture.

It is a complex issue, and there are no simple solutions to the problems of work-related stress. Although a lot of research has been done on ways of dealing with work-related stress, the need for evidence-based interventions remains (Leka and Cox, 2008).

Effective solutions to reducing work-related stress and optimising the work engagement of employees require a combined approach. First there is a need to minimise the negative influences of work pressures and stress on the one hand, while reinforcing the positive influences of work engagement and proactive behaviour on the other (Schaufeli and Bakker, 2007; Ouweneel et al, 2009; Masson et al, 2008).

In addition, the commitment of managers and supervisors to this method and their feelings of 'ownership' towards the process are crucial for the success of the approach (Leka and Cox, 2008, Morrison and Payne, 2003).

The characteristics of a 'serious game' based on the subject – where players experience the consequences of their own actions in the short and long term – suggest it could be a useful training tool for managers. It is possible that a well-designed game could raise awareness of their role in stimulating work engagement and managing work-related stress.

## Development of the game

Working alongside games developer [RANJ](#), independent research company [TNO](#) decided to help create a game to help managers develop their skills in dealing with work-related stress.

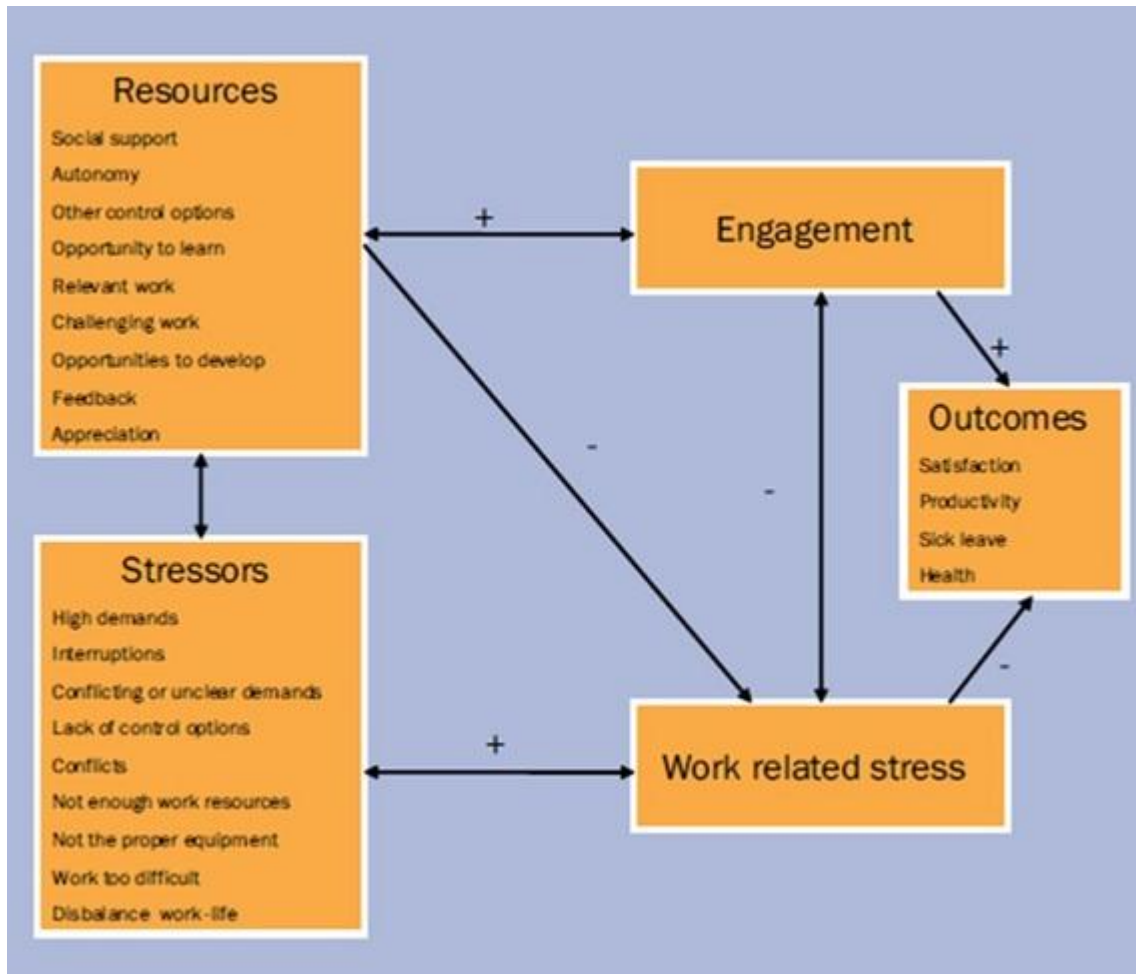
[The Engagement game](#) is based on a scientific model in which the determinants and effects of work-related stress and work engagement are integrated.

This theoretical model was developed based on a large literature review and experiences from practice of TNO and partner organisations. The model is largely based on the recently developed [Job Demands-Resources model \(JD-R\)](#) (Bakker, Schaufeli and Demerouti, 1999;

Bakker and Demerouti, 2007) and contains employee-level operationalisations of all concepts (Figure 1).

The model as shown in Figure 1 is too complex to be implemented in a serious game. Instead, a simplification of the theoretical model is used for the definition of the game rules. In sessions with game developers and scientific researchers in the field of occupational health, psychology and pedagogy, the game rules were formulated from the theoretical model. The game rules link player actions to visible results in the virtual company.

**Figure 1: Theoretical model**



## Results

The game that was developed entails a simulation model.

Any interventions players make will either provide more resources or remove stressors for the worker characters in the game. Interventions will have an automatic impact on outcome measures, mediated by work-related stress and work engagement.

Just as in real life, not all possible interventions are good interventions. They can have positive effects in the short term, but negative effects in the long term. An important part of

the game is to have regular dialogue with the workers. Discussions with workers provide important information on the state of those workers and on opportunities for improvement.

The setting of the online game is a restaurant, an easily recognisable environment for all managers. The player's goal is to improve the work engagement of the workers and make it a successful restaurant.

Important outcome measures are customer satisfaction, the number of customers and turnover (Figures 2 and 3).

**Figure 2: The workplace**



**Figure 3: Matching stressors and resources**



## Follow-up

Through playing the game, managers can try out different interventions and learn from seeing the effect their decisions have on staff.

Time is speeded up in the game, so the long-term effects are seen more quickly and the relationship between any interventions and their effects are more obvious.

Theoretically, this is a very strong way of learning – by doing and experiencing – but little is known about the effects of serious gaming in the field of occupational health. To find out more, an effect and process evaluation study will be performed.

The overall research question of the study will be: ‘Is a serious game an appropriate management intervention to prevent work-related stress and raise work engagement among workers?’

To answer this question, four studies will be conducted to examine:

- the effect of the game on the manager (behaviour, cognitions etc);
- the effect on the managers’ (‘real life’) workers;
- the contribution to the learning effects of the different elements in the game;
- the contribution to the learning effects on the development process.

Results from the studies are expected in 2014.

## References

Bakker, A.B. and Demerouti, E. (2007), ‘The Job Demands-Resource model: state of the art’, *Journal of Managerial Psychology*, Vol. 22, No. 3, pp. 309–328.

Bakker, A.B., Schaufeli, W.B. and Demerouti, E. (1999), 'Werkstressoren, energiebronnen en burnout: het WEB Model' [Work stressors, energy and burnout; the WEB model], in J. Winnubst, J., Schuur, F. and Dam, J. (eds), *Praktijkboek gezond werken* [Healthy working practices handbook], Elsevier, Maarssen, II 3.2, pp. 1–19.

Leka, S. and Cox, T. (2008), *PRIMAEF Guidance on the European Framework for Psychosocial Risk Management*, WHO, Geneva.

Masson, R.C., Royal M.A., Agnew T.G. and Fine S. (2008), 'Leveraging employee engagement: the practical implications', *Industrial and Organizational Psychology*, Vol. 1, No. 1, pp. 56–59.

Morrison, D.L. and Payne, R.L. (2003), 'Multilevel approaches to stress management', *Australian Psychologist*, Vol. 38, No. 2, pp. 128–137.

Ouweneel, E., Schaufeli, W.B. and Le Blanc, P. (2009), 'Van preventie naar amplitie: Interventies voor optimaal functionerende werknemers' [From prevention to amplition: interventions for optimally functioning employees], *Gedrag & Organisatie* [Behaviour and organisation], Vol. 22, No. 2, pp. 118–135.

Schaufeli, W.B. and Bakker, A.B. (2007), *De psychologie van arbeid en gezondheid* [The psychology of work and health], Bohn Stafleu van Loghum, Houten.

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