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12. Designing a Network Curriculum in Higher Education

An Enhancement of Intrinsic Student Motivation?

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Increasing students' motivation in higher education by designing a specific curriculum has always been a challenging but very complex process. The Department of Business, Finance and Marketing (BFM) of The Hague University of Applied Sciences (THUAS) initiated a redesign of the curricula with the major goals of increasing flexibility of learning opportunities and offering students a more motivating, inspiring and richer diversity of learning experiences. In the literature of learning in higher education this has often been labeled as 'offering extracurricular learning opportunities'. The redesign of the curriculum implies that the new one will result in an enhancement of the flexibility of the curriculum, by offering learning opportunities beyond the borders of specific programs like marketing, finance or entrepreneurship and retail management. The richness and diversity should create flexible platforms, offering students the possibility to enrich their career choices to design their own personalised career path, hopefully maximizing the possibilities for their talent development. However, very little is known about the relationship between the students' satisfaction with extracurricular learning opportunities, aiming at the personalisation of students' career choices, and their motivation. In this chapter we describe our research into this relationship between student motivation and learning environments.

Theoretical considerations

Jobs and professions comprise different situations with different job demands. Over the last decades a sharp increase of the heterogeneity of job demands has taken place, leading to a much higher variety of job demands within the same job or profession: 'within-job or profession differences' (Tett & Burnett, 2003; Al Ariss, Cascio, & Paauwe, 2014). Organisations that have to cope with a severe, global competition demand strong innervational capacities and strategic implementation flexibility. These latter capacities are often labelled as 'organisational agility', which is closely related to individual capacities of managers and professionals who in time activate a broad spectrum of diverse personal qualities or competencies (Nijssen & Paauwe, 2012).

Consequently, curricula in higher education with a very limited spectrum of subjects will not develop professional qualities to perform in an agile way. It is unlikely that curricula

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with a limited spectrum of subjects will provide students with the necessary diversity of competencies to cope with a strong heterogeneity of job demands. It's hardly surprising that quite some serious criticism has been expressed that a limited diversity of subjects has been offered within higher education and professional development projects, leading to a limited subject-related diversity of expertise and skills, paying too little attention to the heterogeneity of demands within job professions (Tett & Burnett, 2003; Kell, Rittmayer, Crook, & Motowidlo, 2010).

Two relevant frameworks: The Person-Environment-Fit (PEF) and Ability-Motivation-Opportunity (AMO)

Two theoretical frameworks exist, supporting the hypothesis that increased flexibility and possibilities for extracurricular learning activities could be very valuable for higher education. The *Person-Environment-Fit (PEF)* framework has taught us that specific personality traits are related to an intrinsically motivated performance in specific work- and learning environments (Smith & Schneider, 2004). By example, if an accountancy student wishes to develop advisory or entrepreneurial networking skills, an excellent or positive performance is closely related to high(er) scores on the personality traits extraversion. According to the PEF framework, individuals with higher scores on extraversion enjoy frequent social interaction, leading to a positive or out-performance in work-or learning environments with frequent social interactions. Figure 1 shows this relationship, using the example of the personality traits extraversion:.

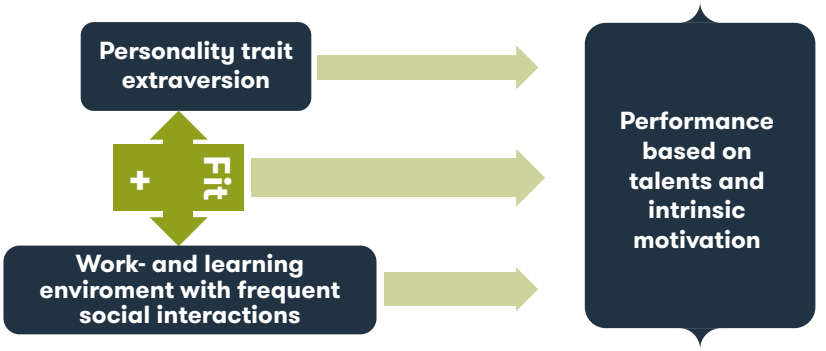

Figure 1: The PEF framework (Smith & Schneider, 2004)

Many curricula, however, do not offer a learning and work environment with frequent social interactions. Consequently, it will be harder for students with talents and capacities based on extraversion to manifest themselves enough.

Furthermore, the *Ability-Motivation-Opportunity (AMO)* framework has indicated that personal qualities and talents will only manifest themselves as effectiveness enhancing capacities when the work or learning environment offers the opportunity to carry out critical successful behaviours (Siemsen, Roth, & Balasubramanian, 2008). For example, if marketing students need to develop specific social sales skills and only a theoretical course is offered focusing on cognitive reproductive learning, talents and capacities related to extraversion won't manifest themselves. This is based on scientific insights that active learning opportunities with frequent social interactions are demanded for the manifestation of talents and capacities related to extraversion. Examples of these active learning opportunities are real-time social skills trainings in which apparent and overt behaviours are trained and developed.

Goal commitment

There is a wide scientific consensus that goal commitment is of utter importance. This holds for a learning performance in higher education as well as for organisational work performance (Latham & Locke, 1991; Vangrieken, Meredith, Packer, & Kyndt, 2017). This is especially the case when the learning and development process is characterised by collaborative learning and by complex interdependencies between teachers and students (Johnson & Johnson, 2009)

Students' activation

Furthermore, the theoretical framework of Ryan & Deci (2000) has shown that stimulating students during lessons to participate in a highly active way has an important positive impact on learning effectiveness in this educational context. Based on the Ryan & Deci (2000) framework, the relevance of the dimension 'activation' in this research context was analysed.

Methodology and model development

Based on a qualitative inventory and the theoretical considerations above, the following five latent variables or dimensions were used in this research:

1. *Intra-psychological aspects of students' motivation*: measures of this dimension were the perceived satisfaction with their talent development, the enjoyment whilst studying, and the feelings of being stimulated in professional development.
2. *Students perceived flexibility of learning opportunities*: students' satisfaction with *extra-curricular learning opportunities* beyond the boundaries of specific programs.
3. *Activation:* students' perceived stimulation within the curriculum of one program to *actively participate during the lessons*.

4. *Goal commitment:* students' general *goal commitment* towards learning goals of the educational material presented during lessons, students perceived the transparency of the valence and instrumentality of subjects in the curriculum for the prospect workplace.
5. *Digitalisation:* students' perceived quality and possibilities with respect to *digital learning opportunities.*

The core of this study is the analysis, whether significant relationships exist between the intra-psychological aspects of students' motivation with the dimensions 2. to 5. listed above.

Research question
Do students' satisfaction with extracurricular learning opportunities positively impact intra-psychological aspects of students' motivation, with higher forms of activation, goal commitment and the perceived satisfaction with the digitalisation of the curriculum supporting the strength of this positive impact.

A questionnaire was set up containing questions about these five variables.
The number of students participating in this study was 618, all of whom were part of five programs within the Department of BFM of THUAS. Twenty-three cases were deleted from the data-file due to a high number of missing values.

To facilitate the reader, in this chapter we will label the latent variables as dimensions. In the model, we will analyse and test the relationship of *intra-psychological aspects of students' motivation* with*:*

1) students' satisfaction with extra-curricular learning opportunities
2) students' satisfaction with lessons stimulating activation
3) goal commitment
4) students' satisfaction with digitalisation

By applying a structural equation methodology, the structure and the strength of the impact between the dimensions will be analysed. The strong advantage of applying this methodology is that it is 'theory driven' not 'data driven'. This means that it can be used to test the validity of models.

Testing the validity of the five dimensions
The first step in testing and analysing the model is verifying the validity of all the dimensions and their measures. The method is called a confirmative factor analysis, as it has to confirm the underlying structure of the model. This analysis revealed that the dimension *activation* was *not* measured in a valid way.

Results

Final model

The final model was constructed including the following dimensions: *digitalisation, satisfaction with extra-curricular learning opportunities, goal commitment* and the impact of these three dimensions on *the intra-psychological aspects of students 'intrinsic motivation.*

To explore whether the research results can be generalised to the whole student population, we analysed whether significant differences existed for students studying in the first two years, when compared with students from the third and fourth year. We labelled this variable as 'Year 1&2 vs. 3&4'. This was done to analyse whether the impact or effect of these dimensions differed for the groups of students studying in the first two years, when compared with students studying in the third and fourth year.

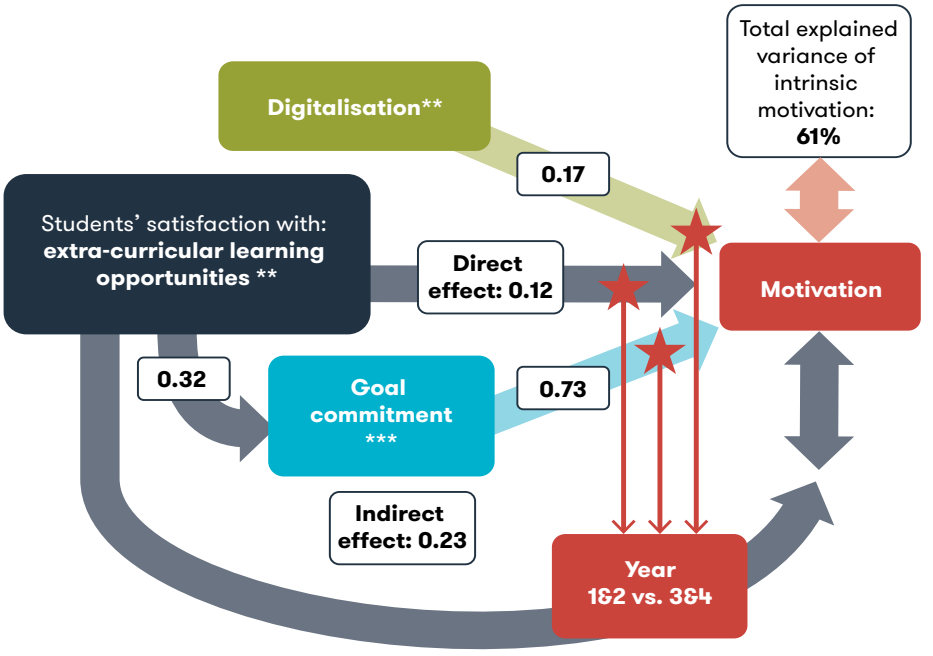

Figure 2: The (final) full model

Major, overall conclusion

Comparing year 1 & 2 with year 3 & 4
As explained earlier, the three vertical (red) arrows are included in the model to check whether the impact of digitalisation, satisfaction with extracurricular learning opportunities and goal commitment would differ for students studying in the *first two years*, when compared with students studying in the *third and fourth year*. This is the major reason that the control variable 'Year 1&2 vs. Year 3&4' is included in the model.

This has important implications; no conclusions are allowed without specifying that the *negative impact* for 1) *digitalisation*, and the *positive impact* for 2*) extracurricular learning* and 3) *goal commitment*, especially holds for students studying in year three and four. Based on this insight, it's very important to highlight that if one wants to enhance the intra-psychological aspects of students' motivation by designing a network curriculum within the economic domain, this will probably only have a positive effect for students studying in the third and fourth year.

Results on the relationship between motivation with extracurricular learning opportunities, goal commitment and digitalisation
The structural equation analysis showed that the model, presented in Figure 2, is valid and forms a solid basis for the theoretical interpretations of the impact of the three dimensions on the intra-psychological aspects of students' motivation, such as satisfaction with talent development, enjoying one's study, etc.

Indirect effect
The effect of '*satisfaction with extracurricular learning opportunities'* is a complex one. Figure 3 reveals that there is a smaller but significant direct effect of this dimension on intrinsic motivation. But there is also a strong indirect effect.

The relevance of the model revealing an indirect effect of the dimension 'satisfaction with extracurricular learning opportunities' on intrinsic motivation is very easily explained by the following thought experiment: *Just imagine in Figure 3 that one would remove the middle sprocket with the title 'goal commitment'. The whole impact of extracurricular opportunities would vanish, leaving only the small direct impact.*

Figure 3. The indirect effect of the dimension 'goal commitment' on motivation.

What does this indirect effect mean?
The indirect effect of the variable extracurricular learning opportunities should be interpreted as follows: the influence of the flexibility of learning opportunities on motivation follows a path, which is explained below.
Higher averages of students' satisfaction with the flexibility in extracurricular learning lead to higher averages on goal commitment.

Consequently, high averages of goal commitment have a very strong impact on intrinsic motivation.
The direct effect of flexibility of learning opportunities on motivation is very small. This indicates that if one wants to influence intrinsic motivation by the increase in extracurricular learning opportunities, this should always be combined with an enhancement of teachers' capacities in achieving a strong learning goal commitment.

Most salient
The most salient result of this study is that the effect of extracurricular learning activities, within the economic domain but beyond the borders of specific educational programs on students' satisfaction, is indirect. The model reveals a very strong effect from goal commitment on the measured (*inner-psychological aspects of*) intrinsic motivation. This means that only designing a network curriculum will have very little effect, *unless* it is combined with a stronger goal commitment. Increasing the goal commitment is likely to have a very high impact on motivation.

A minor but still significant positive effect exists between students' satisfaction and digitalisation. The impact of digitalisation, measuring students' satisfaction with the use of digital learning opportunities, is relatively small but significant (0.17), revealing only a smaller impact on intrinsic motivation. As explained earlier, the effect of digitalisation on intrinsic motivation is positive for the group of students studying in the first two years, and negative for students studying in year three and four. This indicates that different pedagogical techniques and distinctive designs of the curricula should be deployed for these two groups of students.

Further elaborations on the research results
From a theoretical point of view, it's interesting to see that the results of the studies support the theoretical insight that student motivation is best defined by the interaction between push and pull variables. The push variables in this case being the intra-psychological measures of motivation, the pull variables are the characteristics of the learning environment. This is very much in line with theoretical frameworks described earlier, such as the AMO framework (Siemsen, et. al., 2008) and the motivation/goal setting model (Locke & Latham, 2002). Moreover, the model shows, just like in the field of organisational behaviour, that the experienced meaningfulness of the learning environment impacts the intra-psychological aspects of motivation (Chalofsky & Krishna, 2009).

If an enhancement of a student's motivation is the strategic educational aim, it has to be combined with an increased learning goal commitment. As explained before, learning goal commitment is closely related to the transparency of the experienced valence and instrumentality of the learning content for the prospective work context. For example, entrepreneurial students often prefer a very active learning environment with little affinity for abstract data analysis. Consequently, teachers in finance and accountancy should highlight the importance and relevance of these financial skills for entrepreneurial effectiveness.

This is often labelled as the strength of the knowledge transfer, meaning that high transparency on the valence and instrumentality of the learning material for the future work, presented by the curriculum, increases the chance that learned expertise and skills will be transferred to the actual workplace (Kessels, 2001; Kessels, 2001; Kessels & Kwakman, 2007).

Organisational learning and strategic competence development in higher education
The considerations described above highlight the importance that the restructuring of the curriculum should be supported by strategic human resource development programs or organisational learning. In this context two competencies seem to be core for the effective implementation of a network curriculum:

1. *An enhancement of teachers' visionary and dialogical career coaching competencies on learning-career choices, offering a demand and personal growth based learning environment, stimulating and inspiring students to develop a strong focus on the search process for extracurricular learning activities to develop individual talents and capacities.*
2. *Enhancing teachers' pedagogical, visionary qualities to communicate the valence and instrumentality of specific subjects to a heterogeneous group of students, originating from a broad diversity of curricula.*

The limited focus during a restructuring process is a frequently occurring negative organisational phenomenon. Restructuring organisations is a regularly applied management tool when new organisational strategies have to be implemented. The limited focus, mainly on the design and implementation of a new structure, has an important implication: *the underestimation of the importance of learning interventions in organisational development or in human resource development* (HRD). Organisational learning of HRD-interventions is necessary to equip members of the organisation, i.e. teachers, with the strategically demanded core competencies or professional qualities to realise a new strategy. Neglecting the necessity for human and organisational development to provide professionals with the necessary new competencies has a name: '*structuritis'* (Ten Have, Ten Have, Huijsmans, & Van der Eng, 2015). Research on this phenomenon by Ten Have et al. (2015) has shown that implementing a new organisational strategy without the strategic organisational development of the necessary core competencies, proves to have a very low effectiveness.

Transformational leadership qualities of tutors aimed at students' intrinsic motivation
The key issue in higher education is competence development, with knowledge transfer and knowledge innovation being a quite elementary part of this process. This is a highly intellectual process. As explained earlier, the results reveal that tutors communicating a strong vision on the valence and instrumentality of expertise and competency have a very high impact on intrinsic motivation. Also, intellectual stimulation and recognizing individual talents by individual consideration in the learning process are demanded. Intellectual stimulation and individual consideration of talent development are core dimensions of transformational leadership (see for an overview in García-Morales, Jiménez-Barrionuevo, Gutiérrez-Gutiérrez, 2012). Research on transformational leadership qualities and also the theoretical *Person-Environment-Fit (PEF)* framework has shown that the effectiveness of individual learning and innovation capacities of self-directed professionals, such as tutors, highly depends on these transformational leadership qualities (see for an overview in García-Morales, et al., 2012; Lorsche & Morse, 1974; Quinn, 1991):

- *a visionary, participative and empowering leadership style*
- *a participative leadership style that can be characterised by a stimulating and inspiring vision*
- *a leadership style aiming at empowering others to use their talents and individual capacities to analyse complex and ambiguous causalities*
- *little or no usage by leaders of coercive position power, associated with a top-down assertive leadership style with a strong focus on the consolidation of hierarchical positions*

Situational teaching skills, following a contingency approach
As explained earlier, the impact of goal commitment, satisfaction with the flexibility in extracurricular learning and digitalisation differ for students studying in the first two years, when compared to students studying in year three and four. The core issue is: students in the first two years could benefit from a supply-driven, directive teaching style. Students in year three and four would probably benefit from a coaching teaching style that demands transformational leadership qualities.

Recommendations

Designing a network curriculum by increasing the possibility of extracurricular learning opportunities in higher education could have a positive impact on students' motivation when it is combined with activities to increase goal students' commitment. This depends on teachers' qualities to communicate the valence and instrumentality of the learning possibilities offered for the prospective work environment.
This is a complex issue however. Teachers from different educational programs, even in the same domain, have a different orientation on existing learning opportunities within one specific program. Excellent coaching skills by tutors are important. These coaching skills are necessary to support students in the process of envisioning extracurricular learning opportunities when important career choices have to be made.

References

Al Ariss, A., Cascio, W. F., & Paauwe, J. (2014). Talent management: Current theories and future research directions. *Journal of World Business*, *49*(2), 173-179.

Chalofsky, N., & Krishna, V. (2009). Meaningfulness, commitment, and engagement: The intersection of a deeper level of intrinsic motivation. *Advances in Developing Human Resources*, *11*(2), 189-203.

García-Morales, V. J., Jiménez-Barrionuevo, M. M., & Gutiérrez-Gutiérrez, L. (2012). Transformational leadership influence on organisational performance through organisational learning and innovation. *Journal of Business Research, 65*(7), 1040-1050.

Johnson, D.W., Roger T., & Johnson, R.T. (2009). An Educational Psychology Success Story: Social Interdependence Theory and Cooperative Learning. *Educational Researcher*, *38,* 365.

Lorsch, J. W., & Morse, J. J. (1974). *Organisations and their members: A contingency approach*. London, UK: HarperCollins Publishers.

Kell, H.J. Rittmayer, A.D., Crook, A.E., & Motowidlo, S.J. (2010). Situational content moderates the association between the big five personality traits and behavioral effectiveness. *Human Performance, 23*, 213–228.

Kessels, J.W.M. (2001). Learning in organisations: A corporate curriculum for the knowledge economy. *Futures. 33,* 479-506.

Kessels, J.W.M., & Kwakman. K. (2007). Interface: Establishing knowledge links between higher education and business. *International Journal of Higher Education and Educational Planning. 54* (5) 689-703.

Kuijpers, M., & Meijers, F. (2012). Learning for now or later? Career competencies among students in higher education in the Netherlands. *Studies in Higher Education,* 37(4), 449-467.

Nijssen, M., & Paauwe, J. (2012). HRM in turbulent times: How to achieve organisational agility? *The International Journal of Human Resource Management*, *23*(16), 3315-3335.

Quinn, R. E. (1991). *Beyond rational management, mastering the* paradoxes *and competing demands of high performance.* San Francisco, CA: Jossey-Bass.

Ryan, R. M., & Deci, E. L. (January 01, 2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54-67.

Siemsen, E., Roth, A. V., & Balasubramanian, S. (2008). How motivation, opportunity, and ability drive knowledge sharing: The constraining-factor model. *Journal of Operations Management*, *26*(3), 426-445.

Smith, D. B., & Schneider, B. (2004). Where we've been and where we're going: Some conclusions regarding personality and organisations. In B. Schneider & D. Brent Smith (Eds.), *Personality and organisations*. London, UK: Lawrence Erlbaum Associates.

Ten Have, S., Ten Have, W.D., Huijsmans, A.B., & Van der Eng, N. (2015). *Change competence: Implementing effective change*. New York, NY: Routledge.

Tett, R., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied Psychology, 88,* 500–514.

Vangrieken, K., Meredith, C. Packer, T., & Kyndt, E. (2017). Teacher communities as a context for professional development: A systematic review. *Teaching and Teacher Education 61*(1), p.47-59.