ECTPA survey instrument information

The following information about ECTPA instruments (scales and interview protocol) can be found in this document:

- The name of the scale and subscales
- Number of items
- The name of the original instrument
- The language of the original instrument
- Inventor of the original instrument
- References
- Short descriptions of the concepts

The Scales in the Survey Instrument

1. Teacher's professional agency in the classroom

Scale	Teacher's professional agency in the classroom
Subscales	1. Collaborative environment and transformative practice (CLE) 2. Reflection in the classroom (REF)
N of items	7 (CLE) + 4 (REF) = 11
Original instrument	Teacher's Professional Agecy (TPA)
Original language	Finnish
Inventor	Kirsi Pyhältö, Janne Pietarinen, Tiina Soini
References	Pyhältö, K., T. Soini, and J. Pietarinen. (2012). Do Comprehensive School Teachers Perceive Themselves as Active Professional Agents in School Reforms? Journal of Educational Change 13 (1): 95–116. Pyhältö, K., Pietarinen, J. & Soini, T. (2014). Comprehensive school teachers' professional agency in large-scale educational change. Journal of Educational Change. DOI 10.1007/s10833-013-9215-8. Soini, T., Pietarinen, J. & Pyhältö, K. (2016). What if teachers learn in the classroom? Teacher Development, 20:3, 380-397
Description	

We consider t**eacher professional agency in classroom** (Pyhältö, Pietarinen & Soini, 2011; 2012; Kumpulainen, Toom & Saalasti, 2011) as a capacity that prepares the way for intentional and responsible management of new learning, both at an individual and community level. This entails using others intentionally as a resource for learning and, equally, acting as a support for them (Edwards, 2005;

Pyhältö & Stubb, 2012) i.e. co-regulative learning. TPA in classroom includes two modes: **reflection & collaborative learning environment** both of which include the interrelated elements of teachers'

- **motivation to learn** continuously about teaching (*I want*),
- **efficacy beliefs about their learning** as teachers (*I am able*), and
- **intentional strategies for facilitating and managing** new learning (*I can and do*)

in everyday pedagogical practices (e.g., Pyhältö et al., 2014, 2015; Van Eekelen, Vermunt, & Boshuizen, 2006; Sachs, 2000; Turnbull, 2002; 2005; Edwards, 2005; Hakkarainen, Paavola & Lipponen, 2004; Soini et al., 2015).

Teachers' professional agency is not a fixed disposition of an individual teacher (Greeno, 2006; Lipponen & Kumpulainen, 2011), rather it is context-dependent and relational (e.g. Priestley et al., 2012) and develops and changes throughout the career (Greeno, 2006; Edwards, 2007; Engeström, 2005a; Rainio, 2008; Schwartz & Okita, 2009). Becoming an active professional agent provides perceiving oneself as an active learner, who is able to act intentionally, make decisions and reflect thoroughly the impact of one's actions.

2. Teacher's professional agency in the teacher community

Scale	Teacher's professional agency in the teacher community
Subscales	1. Transformative practice (PRAC) 2. Mutual agreement (AGRM) 3. Collective efficacy (CE) 4. Positive interdependency (INTER) 5. Active help-seeking (HELP)
N of items	6 (PRAC) + 3 (AGRM) + 5 (CE) + 4 (INTER) + 4 (HELP) = 22
Original instrument	Teacher's Professional Agecy (TPA)
Original language	Finnish
Inventor	Kirsi Pyhältö, Janne Pietarinen, Tiina Soini
References	Pyhältö, K., T. Soini, and J. Pietarinen. (2012). Do Comprehensive School Teachers Perceive Themselves as Active Professional Agents in School Reforms? Journal of Educational Change 13 (1): 95–116. Pyhältö, K., Pietarinen, J. & Soini, T. (2014). Comprehensive school teachers' professional agency in large-scale educational change. Journal of Educational Change. DOI 10.1007/s10833-013-9215-8. Pyhältö, K. Pietarinen, K. & Soini, T. (2015). Teachers' professional agency and learning – from adaption to active modification in the teacher

	community. Teachers and teaching: Theory and Practice. DOI:10.1080/13540602.2014.995483

Description

We consider **teacher professional agency in professional community** (Pyhältö, Pietarinen & Soini, 2011; 2012; Kumpulainen, Toom & Saalasti, 2011) as a capacity that prepares the way for intentional and responsible management of new learning, both at an individual and community level. This entails using others intentionally as a resource for learning and, equally, acting as a support for them (Edwards, 2005; Pyhältö & Stubb, 2012) i.e. co-regulative learning. TPA in professional community includes five modes: **transformative practice, mutual agreement, collective efficacy, positive interdependency & active help-seeking** both of which include the interrelated elements of teachers'

- **motivation to learn** continuously about teaching (*I want*),
- **efficacy beliefs about their learning** as teachers (*I am able*), and
- **intentional strategies for facilitating and managing** new learning (*I can and do*)

in everyday pedagogical practices (e.g., Pyhältö et al., 2014, 2015; Van Eekelen, Vermunt, & Boshuizen, 2006; Sachs, 2000; Turnbull, 2002; 2005; Edwards, 2005; Hakkarainen, Paavola & Lipponen, 2004; Soini et al., 2015).

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3. Teacher-working environment fit

Scale	Teacher-working environment fit (FIT)
Subscales	1. Climate (CLI) 2. Recognition (RECOG)
N of items	3 (CLI) + 3 (RECOG) = 6
Original instrument	Healthy Organisation Barometer
Original language	Finnish
Inventor	Lindström, 1997; Lindström, Hottinen, & Bredenberg, 2000
References	Lindström, K. (1997). Assessing and promoting healthy work organizations. In P. Seppälä, T. Luopajärvi, C. Nygard, & M. Mattila (Eds.), From experience to innovation (pp. 504e506). Helsinki: Finnish Institute of Occupational Health. Lindström, K., Hottinen, V., & Bredenberg, K. (2000). Työilmapiiri-ja hyvinvointibarometri

[The Healthy Organization Barometer]. Helsinki: Finnish Institute of Occupational Health.

Pietarinen, J., Pyhältö, K., Soini, T. & Salmela-Aro, K. (2013) Reducing teacher burnout: A socio-contextual approach. Teaching and Teacher Education, 35, 62–72.

Soini, T., Pietarinen, J., Pyhältö, K., Haverinen, K., Jindal-Snape, D. & Kontu, E. (2019). Special education teachers' experienced burnout and perceived fit with the professional community: A 5-year follow-up study. British Educational Research Journal. DOI: 10.1002/berj.3516.

Description

Teacher-working environment fit refers to a dynamic interaction between the employee and the working environment that affects teacher's perceived fit and wellbeing (Locke, 1969; Edwards & Cable, 2009; Cable & Edwards 2004; Pervin 1989). It can be observed through the perceived work climate in the community and, at a more personal level, their own perception of appreciation and recognition by the community.

Fit is also used to refer job demands – requirement model, in that frame "our fit" concentrates the social resources in work community.

Climate. The perceived work climate is socially constructed, shared, and maintained by the principal and the teachers in the school community (Cohen, McCabe, Michelli & Pickeral 2009).

Recognition. Receiving personal recognition and being respected and trusted by teacher colleagues are also related to teacher engagement in collaborative learning with their colleagues (see Hargreaves, 2001; Hökkä et al., 2017; Thapa et al., 2013; Vangrieken et al., 2017). Moreover, appreciation has been shown to support teachers' work engagement in challenging situations (Bakker et al., 2007). Accordingly, receiving personal recognition may be a significant resource for agency for learning in the professional community.

4. Teacher's socio-contextual burnout

Scale	Teacher's socio-contextual burnout
Subscales	1. Cynicism towards teacher community (CYN) 2. Inadequacy in teacher–student interaction (INAD) 3. Exhaustion (EXH)
N of items	3 (CYN) + 3 (INAD) + 3 (EXH) = 9
Original instrument	Socio-Contextual Teacher Burnout Inventory (STBI)
Original language	Finnish
Inventor	Janne Pietarinen, Kirsi Pyhältö, Tiina Soini Builds on Maslach's Burnout Inventory
References	Soini, T., Pietarinen, J., Pyhältö, K., Haverinen, K., Jindal-Snape, D. & Kontu, E. (2019). Special

	education teachers' experienced burnout and perceived fit with the professional community: A 5-year follow-up study. British Educational Research Journal. DOI: 10.1002/berj.3516.
	Pietarinen, J., Pyhältö, K., Soini, T. & Salmela-Aro, K. (2013) Reducing teacher burnout: A socio-contextual approach. Teaching and Teacher Education, 35, 62–72.
	Pietarinen, J., Pyhältö, K., Soini, T. & Salmela-Aro, K. (2013) Validity and Reliability of the Socio-Contextual Teacher Burnout Inventory (STBI). *Psychology*, 4 (1).
	Maslach, C., Schaufeli,W., & Leiter, P. (2001). Job burnout: new directions in research and intervention. Current Directions in Psychological Science, 12, 189e192.
	Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. Journal of Occupational Behavior, 2, 99e113.

Description
Teacher's socio-contextual burnout scale (Pietarinen et al. 2013) builds on previous research (Maslach et al., 2001; Taris et al., 2005; Bakker et al. 2008) and assumes that teacher's social contexts, pupils and teacher community, are the key factors in burnout. Teacher's burnout syndrome has three distinct symptoms: **Exhaustion** **Cynicism towards teacher community** **Inadequacy in teacher-pupil interaction**

5. Work engagement

Scale	Work engagement, shortened version
Subscales	1. Vigor (VIG) 2. Dedication (DED) 3. Absorption (ABS)
N of items	3 (VIG) + 3 (DED) + 3(ABS) = 9
Original instrument	Work Engagement Scale (UWES)
Original language	Dutch
Inventor	Schaufeli and Bakker
References	Schaufeli, W.B. & Van Dierendonck, D. (2000). UBOS -- Utrechtse Burnout Schaal. Handleiding [UBOS Test Manual]. Lisse, The Netherlands: Swets Test Services. Schaufeli, W.B., Salanova, M., Gonzalez-Roma. V. & Bakker, A.B. (2002a). The measurement of

	engagement and burnout and: A confirmative analytic approach. Journal of Happiness Studies, 3, 71-92.
	Schaufeli, W. and Bakker, A. (2004) UWES Utrecht Work Engagement Scale Preliminary Manual. Occupational Health Psychology Unit Utrecht University, Utrecht.

Description
Vigor/energy refers to high levels of mental resilience and vigour while studying/at work (e.g. Schaufeli et al. 2002; Salmela-Aro and Upadyaya 2012).   **Dedication** refers to perceiving schoolwork as meaningful and to a sense of enthusiasm, pride, identification, and inspiration regarding studies/work (e.g. Salmela-Aro 2017; Tuominen-Soini and Salmela-Aro 2014).   **Absorption** refers to feelings of competence and being fully concentrated on and happily engrossed in studying/working so that time passes quickly (e.g. Schaufeli and Bakker 2004; cf. the concept of flow in Csikszentmihalyi 1990).

6. Teacher Learning

Scale	Teacher Learning
Subscales	1. Meaning-oriented learning (MEAN) 2. Application-oriented learning (APP) 3. Problematic learning (PROB)
N of items	6 (MEAN) + 6 (APP) + 6 (PROB) = 18
Original instrument	Inventory of Teacher Learning (ITL)
Original language	English
Inventor	Vermunt et al. (2017, 2019); Shortened version: Hofmann & Vermunt (2017)
References	Vermunt, J.D., Vrikki, M., Warwick, P., & Mercer, N. (2017). Connecting teacher identity formation to patterns in teacher learning. In D.J. Clandinin & J. Husu (Eds.), The SAGE Handbook of Research on Teacher Education (pp. 143-159). London: SAGE. Vermunt, J.D., Vrikki, M., Van Halem, N., Warwick, P., & Mercer, N. (2019). The impact of Lesson Study professional development on the quality of teacher learning. Teaching and Teacher Education, 81, 61-73. https://doi.org/10.1016/j.tate.2019.02.009 Hofmann, R., & Vermunt, J.D. (2017). Professional development in clinical leadership: Evaluation of the Chief Residents Clinical Leadership and Management Programme. University of Cambridge, Faculty of Education Working Paper no. 5, 12/2017. Open access

We make a distinction between professional development and professional learning. Teacher learning is a process in which teachers attain learning outcomes (changes in knowledge, beliefs, skills, attitudes) through the use of cognitive, affective, regulative and social learning activities. This process is influenced both by contextual factors (for example PD, school culture) as well as personal factors (for example, motivation, beliefs about learning, teaching experience, professional identity, and agency) (Leeferink, Koopman, Beijaard, & Ketelaar, 2015; Vermunt and Endedijk, 2011).

Meaning-oriented learning pattern

Teachers want to know why things work as they work in the classroom, looked for reasons behind new practices, tried to extend their understanding of their own practices and of new ideas, tried out new practices based on that understanding, worked on extending their theory of practice, often brought in knowledge and theory from outside and worked for a longer time on a certain theme (meaning-oriented learning pattern).

Problematic learning pattern

Teacher struggles with the educational innovation, experienced many frictions between how they wanted to teach and how that worked out in practice, often had no idea how to teach in another way, did not know how they might learn to teach in another way, had many negative emotions and sometimes avoided learning about the innovation at all.

7. School Leadership

Scale	School leadership
Subscales	1. Vision-building (VIS) 2. Participative decision-making (PART)
N of items	9 (VIS) + 8 (PART) = 17
Original instrument	SSVE questionnaire
Original language	Dutch
Inventor	Gejsel et al. 2001 (Vision building), Thoonen et al 2001 (Participative decision-making)
References	Geijsel, F., Sleegers, P., Berg, R. van den, & Kelchtermans, G. (2001). Conditions fostering the implementation of large-scale innovation programs in schools: teachers' perspectives. Educational Administration Quarterly, 37(1), 130-166. Thoonen, E. E. J. (2012). Improving classroom practices: The impact of leadership, schoolorganizational conditions and teacher factors (dissertation). Amsterdam: Universiteit van Amsterdam. Heijden, H.R.M.A. van der., Beijaard, D., Geldens, J.J.M., Popeijus, H.L. (2018). Understanding teachers as change agents: An investigation of primary school teachers' self-perception. Journal of Educational Change, 19(3), 347 – 373. doi: 10.1007/s10833-018-9320-9
Description	

School leadership is a key factor in positively influencing school organizational conditions, teacher motivation, and teacher learning.

School leaders can create supportive work conditions to meet teachers' specific needs and to encourage them to exercise professional agency. They play an important role in managing a professional learning community by providing conditions for vision building, participative decision-making, and professional teacher collaboration. School leaders can provide the necessary conditions to enhance vision building and participative decision-making in schools. **Vision building and participative decision-making** are important contextual factors for fostering agency.

Vision building. By building a school's vision, teachers feel attached to the organization and are motivated to combine organizational goals with their own personal goals. It is about having a clear vision on good education. To discuss together with colleagues in school what they want to achieve with their teaching/education.

Participative decision-making is about teachers having voice and influence at work. Teachers need to have a degree of autonomy to participate in the school's decision-making processes.

The Interview protocol: Journey Plot and Network Plot

Interview protocol	Journey Plot and Network Plot
Original instrument	Fins-Riess Interviews: Researcher's Identity Development in the Social Sciences
Original language	Finnish (English, Spanish and German)
Inventor	Castelló, Pyhältö and McAlpine
References	Castelló, M., Pyhältö, K., & McAlpine, L. (2018). European Cross-National Mixed-Method Study on Early Career Researcher Experience. In A. J. Jaeger , & A. J. Dinin (Eds.), *The Postdoc Landscape: The Invisible Scholars* (pp. 143-174). London: Academic Press. Journey plot: McAlpine, L. (2016). Becoming a PI: From 'doing' to 'managing' research. Teaching in Higher Education, 21(1), 49-63. DOI: 10.1080/13562517.2015.1110789 Turner, G. (2015). Learning to Supervise: Four Journeys. Innovations in Education and Teaching International, 52(1), 86–98. https://doi.org/10.1080/14703290031000088978 Sala-Bubaré, A., & Castelló, M. (2017). Exploring the relationship between doctoral students' experiences and research community positioning. Studies in Continuing Education, 39(1), 16-34. https://doi.org/10.1080/0158037X.2016.1216832 Vekkaila (o.s. Tuomainen), J., Pyhältö, K., Hakkarainen, K., Keskinen, J., & Lonka, K. (2012). Doctoral students' key learning experiences in natural science. International Journal for Researcher Development, 3(2). https://doi.org/10.1108/17597511311316991 Network plot: Sala-Bubaré, A., & Castelló, M. (2017). Exploring the relationship between doctoral students' experiences and research community positioning. Studies in Continuing Education, 39(1), 16-34.