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Expectancy based measures of trainees' motivation to learn: an overview and
practical implications

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Introduction

21st Century organisations have long recognised that survival and success are closely linked to the training and development of their workforce. However, the time and money invested is only worthwhile if employees are motivated to learn (Colquitt et al., 2000). Indeed, evidence suggests that motivation to learn matters before, during, and after training (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). As practitioners who provide training and development courses to organisations we are often confronted with the following two challenges: (1) How should we assess or measure motivation to learn, and (2) how can we leverage it. This paper is concerned with the former.

Inconsistency in conceptualisation and measurement of motivation to learn means that anyone new to the topic is likely to find it difficult to decide which measure to use (Bauer et al. 2015). Whilst various motivational theories have been cited as the basis of measures, by far the most frequently used in the training field is Vroom's (1964) Expectancy or Valence – Instrumentality – Expectancy (VIE) theory. The assumption within this theory is that training is more likely to be worthwhile if trainees value the outcomes that are likely to be achieved (V), if they believe that training is likely to lead to something of benefit to them (i.e., “what’s in it for me”?) (I), and whether they believe that effort will lead to desirable outcomes (E). In this article a summary of the literature to date on motivation to learn is provided, with the overall aim to articulate patterns in expectancy based measures and to provide guidance for the practice of others.

Searching the literature

The literature search was guided by three main criteria. First, the focus was on empirical studies that made a reference to the terms motivation to learn, training motivation, or learning motivation, which are often used interchangeably. Second, whilst recognising that

the training literature makes reference to broader motivational constructs (e.g., self-efficacy, goal setting theory, self-determination theory), the present review focused on Expectancy based measures. Third, the primary focus was on literature from the organisational domain, research that was conducted in educational settings was included only if the focus was on work related outcomes, rather than academic achievement. A total of 66 studies met the inclusion criteria, with some studies using more than one measure.

Emerging themes

Examination of the literature revealed two main approaches to the measurement of motivation to learn through Expectancy theory. One approach is based on a unidimensional definition of the construct, whilst the other captures the multidimensional components of the VIE theory. A summary of the literature is presented in Table 1.

Table 1: Overview of expectancy based measures of Motivation to Learn

Type of measure	Source	No of studies	Number of items in measure
Unidimensional measure	Noe & Schmitt (1986)	33	2, 3, 3, 4, 4, 4, 4, 4, 5, 5, 5, 5, 5, 6, 6, 7,7, 7, 7, 7, 8, 8, 8, 8, 8, 8, 9, 9, 9, 10, 10, 11, 15
	Noe & Wilks (1993)	10	5, 10, 10, 10, 16, 16, 16, 17, 17, 17
	Other measures	17	2, 3, 3, 3, 3, 4, 4, 5, 5, 6, 6, 7, 7, 7, 9, 9, 12
Total		60	
Multidimensional measures	Lawler (1981)	6	12, 12, 15, 17, 17, 19
	Other measures	2	9, 19
Total		8	

Unidimensional measures typically offer a set of items that are rated on a likert type scale, asking trainees to indicate the extent to which they agree or disagree with statements. A

mean is then calculated to provide an overall score of motivation to learn. The data displayed in Table 1 demonstrates that this approach dominated the studies reviewed. Specifically, 33 of the studies measured motivation to learn through scales that were based on Noe & Schmitt's (1986) eight-item measure and 10 studies referred to Noe & Wilk's (1993) 17-item measure in their studies. However, there were pronounced variations in the use of the scales. Few researchers used the full scales, with the majority opting for a modified version and the modifications varied significantly between researchers. Some integrated the items with other measures of motivation to learn to create measures longer than the intended measure, whilst others opted for a reduced number of items. Other researchers developed unidimensional measures that were also direct measures of motivation, and although developed for each study, held many similarities to Noe and colleagues' measures.

In contrast to unidimensional measures, the *multidimensional approach* refer to instances where researchers create a scale that assess each VIE component separately. The formula used to calculate motivation is $E [\sum (v \times I)]$. The multiplicative relationships are critical to this approach as the formula suggests that if any of the terms are zero, motivation will be zero. Thus, it is not enough for trainees to believe that they are able to perform, they also need to value the outcomes and believe that these will be achieved through training. As demonstrated in Table 1, eight of the reviewed studies used the recommended formula and there were some variations amongst researchers in the scales used to assess motivation in this way. This approach is recommended for its ability to capture the complex nature of motivation (Baldwin & Karl, 1987; Kim et al., 2012).

Summary and practical implications

The review of the literature suggests that although a wide variety of measurements exist, there is a general preference to use a more direct and explicit approach to assess

motivation to learn. This approach is based on Noe & Schmitt (1986) definition, where motivation to learn was described as ‘*a specific desire of the trainee to learn the content of the training program*’ (p.743). This preference is not only due to its practical appeal, but also because the simple measure can be just as predictive of important training outcomes as the more complicated multidimensional approach (Tharenou, 2001). A recent meta-analytic study have shown that this approach is most predictive when the outcome of interest is learning, i.e., declarative knowledge or skill acquisition (Bauer et al., 2015).

In reality, however, we would like our trainees to gain more than new knowledge or a skill from our training courses. Most practitioners would agree that training should have far reaching benefits, with the ultimate goal of trainees transferring the new learning they acquired to the workplace. Expectancy based measures should therefore also be included when other outcome measures may be of interest such as transfer outcomes. This is because transfer is not influenced by trainees’ desire to learn, but by their expectancy based calculations (Bauer et al., 2015). Such calculations reflect trainees’ expectations and the value they place on training and whether they believe it is likely to be of benefit to them. It is therefore proposed that practitioners who are interested in measuring motivation to learn should consider the overall aim of the training course before deciding how to assess it. This is because different measures predict different outcomes.

References

Bauer, K., Orvis, K. A., Ely, K. & Surface, E. A. (2015). Re-examination of motivation in learning contexts: meta-analytically investigating the role type of motivation plays in prediction of key training outcomes. *Journal of Business Psychology*, 31, 33-50.

- Baldwin, T. T. & Karl, K. A. (1987). The development and empirical test of a measure for assessing motivation to learn in management education. *Academy of Management Proceeding, 1*, 117-121
- Colquitt, J. A., LePine, A., & Noe, R. A. (2000). Toward an integrative theory of training motivation: a meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology, 85*, 678-707.
- Kim, K. Oh, I-S., Chiaburu, D. S., & Brown, K. G. (2012). Does Positive Perception of Oneself Boost Learning Motivation and Performance? *International Journal of Selection and Assessment, 20*, 257 – 271.
- Lawler, E. E. (1981). *Pay and organizational development Reading*. MA: Addison-Wesley
- Noe, R. A., & Schmitt, N. (1986). The influence of trainee attitudes on training effectiveness: test of a model. *Personnel Psychology, 39*, 497-523.
- Noe, R. A., & Wilks, S.L. (1993). Investigation of the factors that influence employees'
- Salas, E., Tannenbaum, S. I., Kraiger, K. & Smith-Jentsch, K. A. (2012). The Science of Training and Development in Organizations: What Matters in Practice. *Psychological Science in Public Interest, 13(2)*, 74-101.
- Tharenou, P. (2001). The relationship of training motivation to participation in training and development. *Journal of Occupational and Organizational Psychology, 74*, 599-621.
- Vroom, V. H. (1964). *Work and Motivation*. New York: Wiley.