Developing an individual and collective self-efficacy scale for the teaching of writing in high schools

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A B S T R A C T

The study reported on here focuses on self-efficacy in relation to high-school teachers' teaching of writing. 140 New Zealand teachers from four schools completed a teacher-of-writing self-efficacy scale (TWSES) based on a rhetorical model of the writing process and incorporating five hypothesized dimensions. An initial principal components analysis was undertaken on 25 individual self-efficacy items to investigate the dimensionality of the data and the extent to which it reflected the dimensions hypothesized. A two-component solution emerged, termed "pre-writing instructional strategies" (accounting for 52% of total variance) and "compositional strategy demonstration" (7% of variance). Further principal components analyses conducted on groups of items deemed to be thematically coherent, that loaded on each component, confirmed that the data set for each group, treated separately to any other items, was approximately uni-dimensional. Measurement scales were calibrated to each group of items, and served as the dependent variables for comparisons of teachers' self-efficacy in different subjects. Statistically significant variations occurred in the resultant scale locations for teachers of English, the humanities, science and mathematics. The study findings have implications for the teaching of writing as conceptualized in the secondary school, and indicate a value in viewing disciplinary literacies in rhetorical terms.

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In the last thirty years, self-efficacy has become a major research focus in studies undertaken from a cognitive or socio-cognitive perspective. Self-efficacy pioneer, Bandura, defined perceived self-efficacy as "concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (1982, p. 122). In other words, self-efficacy is a belief, held either individually or collectively, that future outcomes can be influenced within the context of external constraints, including the discursive constraints associated with disciplinary literacies.

Klassen, Tze, Betts, and Gordon (2011) have defined self-efficacy in teachers as "the confidence teachers hold about their individual and collective capability to influence student learning" (p. 21). Over the years, teacher self-efficacy has developed into a two-dimensional construct. Following Tschannen-Moran, Hoy, and Hoy (1998), we term the first of these the *self-perception of teaching competence*, i.e. "the teacher judges personal capabilities such as skills, knowledge, strategies, or personality traits balanced against personal weaknesses or liabilities in this particular teaching context" (p. 228). The second we term *the sense of task difficulty*, i.e. "the relative importance of factors that make teaching difficult or act as constraints is weighted against an assessment of the resources available that facilitate learning" (p. 228).

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The study reported on here focuses on self-efficacy in relation to one aspect of a secondary-school teacher's instructional practice: the teaching of writing. In this respect, it was less concerned with personal teaching efficacy, and more with a specific, but significant, aspect of a teacher's work.

Out study aim was to develop an instrument to measure teacher-of-writing self-efficacy (TWSES) based on a rhetorical view of the writing process, to analyze its dimensionality and to compare the teacher-of-writing self-efficacy of high-school teachers across a range of subjects. We agreed with Bandura's assertion that: "Scales of perceived self-efficacy must be tailored to the particular domain of functioning that is the object of interest" (2006, pp. 307–308). The rhetorical view of the writing process will be discussed below, and needs to be distinguished from cognitive perspectives developed by such researchers as Flower and Hayes in the early 1980s (Flower & Hayes, 1981; Hayes, 1996).

This study is timely for a range of reasons. The writing-across-the-curriculum movement has been active in a range of settings for around four decades. More recently, it has merged with a growing focus on, and an attendant literature advocating, the key role of disciplinary literacies (including subject-specific writing) in enhancing student performance across the full range of curriculum areas (see, for example, Moje, 2008; Shanahan & Shanahan, 2008). At the same time, there is a widespread recognition in the Anglophone world, of a reluctance for many high-school teachers to view themselves as writers or teachers of writing (Carney & Indrisano, 2013).

While policy-makers may have much to say on the subject of teacher competence, we view a focus on teacher efficacy in the context of pre-service and in-service teacher education as a far more productive way of approaching professional learning. We would like to think that our efforts to produce a self-efficacy scale in relation to the teaching of writing will contribute to the debate around what this domain-specific construct might look like and how it might be used in research that investigates, for example, the relationship between enhanced self-efficacy around the teaching of writing and student outcomes. (For a modest instance of such an investigation, see Locke, Whitehead, & Dix, 2013.)

The dimensionality of a construct such as a rhetorical understanding of teaching writing can be conceptualized in terms of the number of distinct aspects that underpin it. A construct with two dimensions thus has two distinct aspects, in the sense that individuals vary in their relative strength with respect to each. Constructs such as self-efficacy for the teaching of writing are *latent traits*, meaning that they cannot be directly measured. Instead, instruments such as questionnaires and surveys are used as proxy measures of these latent traits.

The dimensionality of the data collected using a questionnaire may be investigated using statistical approaches such as principal components analysis or factor analysis. A dimension comprises a subset of items (questions) that, from a qualitative perspective, relate to a common theme, and that, from a statistical perspective, are more highly correlated with one another than they are with other items on the questionnaire.

It is beyond the scope of this article to discuss in detail the relationship between the theorized dimensionality of a construct and the dimensionality of the data arising from an instrument designed to measure it. It should be noted, however, that while questionnaire design is usually shaped by a theoretical conception of a construct, the *statistical* dimensionality of the data collected using that questionnaire often does not reflect the *theorized* dimensionality of the construct. This proved to be the case in our study. The TWSES was trialed with 140 New Zealand secondary-school teachers. However, the dimensions of self-efficacy we *hypothesized* in relation to the teaching of writing were drawn from an international literature on the writing process.

1. A rhetorical view of the writing process

A number of literature reviews on effective writing instruction have drawn attention to the importance of supporting the writing process and the various strategies associated with it (Graham & Perrin, 2007; Hillocks, 2006; Myhill, Fisher, Jones, & Lines, 2008). While there is some relationship between theories of writing development and theories around the nature of the writing process (Camp, 2012), our focus here is very much on process – the stages required for a text to be produced in a particular context and the discourses that variously construct this process. We distinguish two understandings of the writing process: *a sequence of cognitive operations* (associated broadly with psychological theory) and *a rhetorical orientation to the production of text* (associated with socially situated views of writing).

The view of the writing process as a sequence of cognitive operations, propounded by cognitive psychologists Flower and Hayes (1980, 1981), has been highly influential for writing researchers and educational practitioners alike (Vanderburg, 2006). This view focuses on the individual writer and the range and sequencing of tasks required to complete the production of a text, from initially conceptualizing the task and its requirements (including some sense of audience and purpose; planning), to locating appropriate content, transforming that content into language fit for task (translating), and finally ensuring that the finished product meets task requirements (reviewing). While this view suggests a linear sequencing of tasks, in fact, writing is very much a *recursive* (non-linear) activity. Recursivity refers to the way in which writers are *not* locked into a set of rigid stages but go backwards and forward between operations such as content generation, translating and revision.

Rhetorical approaches to writing enjoyed a resurgence in the 1990s, through the work of Andrews (1992) and others associated with the *new Rhetoric* (see Locke, 2015). The writing process as rhetorically oriented views the stages as determined by the contextual demands of a situation involving a rhetor (text-maker or designer), an audience, content, and textual function/purpose. In Bakhtinan terms (1986), it also embraces the concept of intertextuality – texts as utterances in a chain of utterances. Such a view is not solely focused on the individual writer but rather encompasses the social context