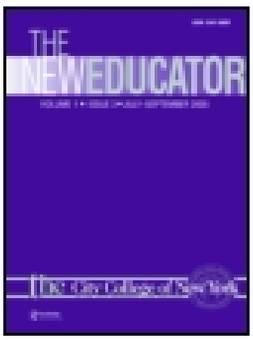

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# Teaching Across the Grades: Dispositions of Ideally Competent Teachers

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**ABSTRACT**

The study of dispositions for effective teaching has become a key topic in education. Diverse characteristics, skills, and behaviors have been proposed as centrally important. Nevertheless, little work has been done on evaluating these disparate claims, or whether importance varies across primary and secondary teaching contexts. We address these issues by using a new instrument that incorporated a wide range and a large number of individual dispositions with an established methodology (the Q-sort; Block, 2008) that allows dispositions to be meaningfully ranked by importance and then compared across grade level. A diverse group of experienced teachers were consistent in their rankings, and their judgments showed both similarities and differences across grade level. We discuss theoretical and practical implications.



## Introduction

The study of dispositions for effective teaching has become a key topic in educational reform discourse (e.g., Hindman & Stronge, 2009; Walker, 2010). Indeed, during both initial teacher education and licensing, teacher dispositions must be assessed to ensure that only the most suitable candidates enter the profession. Further, because certain dispositions are associated with retention in the field (e.g., Hong, 2012), attention to dispositions may reduce teacher attrition. As will become evident in our review below, there are diverse characteristics, skills, and behaviors that have been proposed as centrally important teacher dispositions. However, little work has been done on evaluating these conflicting claims (i.e., on identifying which of these diverse dispositions are actually thought to be most important by experienced teachers) or on assessing the question of whether the relative importance of various dispositions varies across grade level from primary to secondary school.

We addressed these issues using a new instrument (the Teacher Behaviour Q-sort) that incorporated a wide range and large number of individual

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dispositions with an established methodology (the Q-sort; Block, 2008) that allows dispositions to be meaningfully ranked by importance and then compared across grade level. The Q-sort method has a number of advantages over questionnaire and checklist formats because it employs a forced distribution (i.e., a specified number of items *must* be placed in each category from most to least descriptive). This minimizes social desirability and allows raters to make up to nine meaningful distinctions, or rankings, between items (see below). Further, because everyone completing a Q-sort has worked within the same required framework, rankings can be meaningfully compared. In contrast, unconstrained responses from questionnaires and checklists reflect the unique ways in which they are understood by different respondents. Thus, the Q-sort method provides an ideal technique for evaluating the relative importance of diverse dispositions.



## Literature review

### *Dispositions*

We begin by reviewing the many (and often inconsistent) definitions of dispositions. We then consider the importance of assessing them and the methods that have been utilized to evaluate dispositions within initial teacher education (ITE) and the subsequent certification process.

Although dispositions are sometimes confused with attitudes or "habits of mind" (Random House, 1982, p. 383), the root meaning is a tendency to behave in certain ways. Thus, dispositions are always observable, even when characterized in very general terms. Sockett (2006), for example, categorized dispositions into three primary general areas: *character* (such as integrity and courage), *intellect* (including open-mindedness and impartiality), and *care* (such as receptivity and relatedness). Other definitions focus on just one or two of these aspects. For example, Ripski, LoCasale-Crouch, and Decker (2011) focus on character traits by defining dispositions as personality attributes that "dispose a person towards certain behaviors, choices, and experiences" (p. 78) and that are stable and resistant to change. Dottin (2009) describes pedagogical dispositions as "habits of pedagogical mindfulness and thoughtfulness (reflective capacity) that render professional actions and conduct more intelligent" (p. 85). Although it can sometimes be helpful to think of dispositions as akin to values or personality traits, the critical issue is still how they are translated into behavior, affecting the practice of teaching. These behaviors include a wide range of tasks and responsibilities, including communication with parents, reporting, and emotionally supporting at-risk students.

Other authors have tried to move away from necessarily vague general statements of traits to specify actual skills and competencies. For example, Nixon, Packard, and Dam (2013) proposed a continuum of traits and behaviors,

such as values and ethics (which are not unique to teaching) to competence-related knowledge and skills such as pedagogical and content knowledge. Others have argued that all dispositions, regardless of type, are linked to pedagogical knowledge, skills, and actions (Diez & Murrell, 2010; Dottin, 2009).

Ruitenberg (2011) makes a similar point in her account of the legal proceedings between the British Columbia Council of Teachers (BCCT) and Trinity Western University (TWU), a faith-based institution offering an ITE program. The BCCT charged that TWU grads were not representing the neutral religious beliefs required of public school teachers. The court ruled that teachers' ethical views or beliefs are irrelevant—it is only their actions in the classroom that are important. Therefore, the focus on observable behaviors (which are rooted in attitudes and beliefs) is justifiable. This is the view that we adopted when we considered how best to assess dispositions.

### *Importance of dispositions*

Despite difficulties arriving at a consistent definition, the study of dispositions for effective teaching has become a key topic of reform in public schools and teacher-education programs. For example, in the United States such governing bodies as the Council for the Accreditation of Educator Preparation (CAEP) mandates the assessment of dispositions for ITE (requirements at admission and graduation) (CAEP, 2015). The Interstate Teacher Assessment and Support Consortium (InTASC) has identified critical dispositions that are necessary for effective teaching practice and that must be assessed prior to professional state licensing (Council of Chief State School Officers, 2013). The ultimate goal is to ensure teacher quality in all schools for all children. This goal has become increasingly important given the continual diversification of the national populations of Canada and the United States, where classroom teachers must address the needs of a wide range of student abilities and backgrounds (Mills, 2012; Mueller & Hindin, 2009). Thus, teacher dispositions important for success in the field are also becoming a consideration for admission into ITE programs.

Although there is a longstanding tradition for universities and ITE programs to use grade point average (GPA) as the primary admission criterion (Casey & Childs, 2007), many acknowledge the role that dispositions play in a teacher candidate's success. Teacher candidates (TCs) with strong academic abilities may be well advanced in ITE programs before faculty identify significant weaknesses in such essential "soft skills" as caring, tolerance, time management, and strong self-esteem (Phifer, 2007). In fact, Anderson and Brydges' study (2010) of at-risk TCs found that, in 75% of cases, failure could be attributed to dispositional issues.

Once in the field, dispositions continue to influence effective teaching and retention in the profession. Although skill and knowledge play key roles in teacher effectiveness, characteristics such as persistence, desire to connect

personally, resilience, and self-efficacy are also vital (Darling Hammond & Youngs, 2002; Hindman & Stronge, 2009; Klassen, 2011; Staiger & Rockoff, 2010; Walker, 2010). Some of these qualities are also related to professional attrition. For example, Hong (2012) reported that teachers who leave within the first five years of employment have weaker self-efficacy beliefs and unsuccessful strategies to prevent burnout, compared to teachers who remain in the profession. Similarly, Rieg, Paquette, and Chen (2007) found that one of the primary reasons that novice teachers leave the profession is because of on-the-job stress.

### *Assessing dispositions*

Given their importance, dispositions have long been assessed informally. BEd programs, for example, often require a letter of intent in which applicants outline their reasons for pursuing a teaching career. Based on this letter, a judgment is made about the applicant's ability to be an ethical, committed member of the teaching profession. Reference letters or writing samples may be required as measures of applicants' aptitude and personal qualities. Kattner's study (2011) required applicants to write a story from which the admission committee would make inferences about personal qualities and dispositions. Similarly, Mueller and Hindin (2009) utilized case scenarios to tap aptitudes and character. Some teacher-education programs also utilize interviews to assess candidate dispositions and personal qualities (e.g., Byrnes, Kiger, & Schechtman, 2003).

Although written submissions, reference letters, and interviews may provide useful information about an applicant's suitability and future performance (e.g., Byrnes et al., 2003; Caskey, Peterson, & Temple, 2001; Haberman, 1987), there are problems associated with each of these methods. For example, validity is compromised when applicants respond in socially desirable ways; it can be difficult to assess the credentials of referees or the accuracy of their statements; and it can be costly, both in time and money, to train evaluators and interviewers to acceptable levels of reliability and consistency.

Some researchers (e.g., Rinaldo & Slepkov, 2012) have attempted to tap competence and character dispositions more systematically, directly, and quickly using self-reports (checklists or questionnaires). However, Anderson and Brydges (2010) found that TCs (particularly those who were least successful in their practicum) tended to inflate their ratings. Similarly, Schulte, Edick, Edwards, and Mackiel's Teacher Disposition Index (2004) lacked strong predictive power. Evidently self-report methods often fail to constrain social desirability and self-serving bias.

One technique that does constrain social desirability and bias is the Q-sort method. Moreover, Q-sorts can be used either as self-report instruments or by those who observe the TC in the classroom. We now consider this technique in more detail.

### The Q-sort method

The Q-sort method has been used successfully in the field of psychology to assess personality characteristics in children, youth, and adults (e.g., Block, 1971; Block & Block, 2006; Sroufe, Egeland, Carlson, & Collins, 2005). In education, the Q-sort method has been used to measure teachers' beliefs about classroom discipline (Rimm-Kaufman, Storm, Sawyer, Pianto, & LaParo, 2006). However, to our knowledge, it has yet to be used to assess behaviors required for successful teaching.

One approach to the issue of identifying and contrasting behaviors required for successful teaching is to develop a *prototype* or *criterion* Q-sort. Criterion sorts are developed by having qualified judges each complete a Q-sort for some specified ideal, such as a well-functioning adolescent or adult (Block, 1971, 2006; Helson & Srivastava, 2002; Waters, Noyes, Vaughn, & Ricks, 1985) or, in our case, an ideally competent teacher. If the Q-sorts completed by the judges are strongly correlated (*r*s in the .70s are usually considered adequate; Block, 1971, 2006), that is, evidence for agreement about the qualities that constitute the ideal. Items are then averaged across judges to form the criterion sort.

For the current study, we developed a Q-sort measure of dispositions, the Teacher Behaviour Q-sort (TBQ), consisting of 100 items sampling the diverse aspects of dispositions reviewed above. Items were derived from the British Columbia Ministry of Education (2012) teaching standards, Rinaldo and Shlepkov (2012), the California Adult Q-sort (Block, 1971, Appendix A), and the California Child Q-sort (Block & Block, 1969). Following Ruitenberg (2011), items assessed observable behaviors rather than attitudes or beliefs.

The domains assessed by the TBQ include and extend those identified by Devine, Fahie, and McGillicuddy (2013), Nixon et al. (2013), and Ripski et al. (2011). They include *professional skills* (e.g., "Respects confidentiality," "Knowledgeable about children with special needs" [Items 3 and 10, Appendix 1]), *effectiveness* (e.g., "Effective at assessment and evaluation" [Item 14], "Expresses ideas well and communicates clearly" [Item 28]), *problem-solving* (e.g., "Handles conflicts and concerns in a professional manner" [Item 23], "Accepts suggestions and guidance; responds positively to constructive criticism" [Item 24]), and *ability to cope* (e.g., "Tends to go to pieces under stress" [Item 50], "Seeks help or support as needed" [Item 16]), as well as *personal characteristics* (e.g., "Warm and responsive" [Item 59], "Vital, energetic, lively" [Item 56]), *relationships with others* (e.g., "Cooperative, easy to get along with" [Item 69], "Behaves in a sympathetic or considerate manner; compassionate" [Item 64]), and *emotions* (e.g., "Overreacts to minor frustrations, easily irritated or angered" [Item 81], "cheerful" [Item 94]).

In summary, there is agreement that dispositions are critical for successful teaching, that they should be considered during teacher-education programs

and for later licensing, and they are associated with retention the field. However, they are difficult to measure, and there is disagreement about which dispositions are most important. Our first goal, then, was to assess whether there was a consensus among knowledgeable judges about the relative importance of the very diverse characteristics reviewed above. If there was such a consensus and it was possible to develop a criterion Q-sort, then we could identify those characteristics thought to be most important. Our second goal was to assess whether those items judged to be most important differed by grade level. Although teachers across grades share many skills, they also experience somewhat divergent demands. For example, it is plausible to think that warmth and responsiveness might be considered more important for primary teachers than for high school teachers. In order to achieve our goals, we chose a survey research design (Creswell, 2015), which enabled the identification of trends in a large amount of data.



## Method

### Participants

The 22 judges (16 females and six males) for the criterion sorts included ten BEd faculty at Thompson Rivers University (TRU), nine experienced teachers (identified by school principals as "master teachers"), and three school principals from a school district in south-central British Columbia. Although this constituted a sample of convenience (rather than a representative sample), we invited only individuals who were considered to be knowledgeable about good teaching practices and who had substantial "hands-on" experience with classroom demands (in all but one case, at least 10 years). Judges were asked to select the grade level they felt best qualified to judge: primary (K–3), intermediate (6–8), or high school (10–12). We chose these groupings because we thought that they would clearly illustrate grade differences, if any existed. Judges were invited by e-mail to individually use the TBQ to describe an ideally competent teacher at their chosen grade level. All participants received a $30 honorarium.

### Procedures

Each of the 100 items of the TBQ was printed on a 3 × 5 card. Following the recommendations of Block (2008), the task of the judges was to sort this set of 100 cards into nine categories (piles) from most to least descriptive of an ideal teacher, conforming to a forced normal distribution[1] of 5, 8, 12, 16, 18, 16, 12, 8, and 5 items. To do this, cards are sorted twice. The first sorting creates only three piles (clearly descriptive, clearly *un*descriptive, and neutral

[1]"Normal" because the specified numbers form a bell-shaped distribution.

or unsure). For the second sorting, the judge takes the pile of "descriptive" cards and identifies the five that are most descriptive, then the eight that are next, and then the next 12. If any cards still remain, they are placed in the "neutral" pile; or cards are taken from the neutral pile if needed to make up the required 5, 8, and 12 "descriptive" piles. Then the judge begins at the other end, taking the "undescriptive" cards and identifying the five least descriptive ones, then the next eight, then the next 12. Finally, the neutral pile is sorted into three piles, working in towards the middle and ensuring that each pile has the required number of cards (16, 18, and 16). Then each pile is placed in an appropriately labeled envelope and returned to the investigators. The whole process typically takes 60 to 90 minutes.

Items were scored according to the envelope in which they were placed, from 1 (least descriptive) to 9 (most descriptive). Separate spreadsheets were created for each level—primary, intermediate, and high school. Participants were columns and Q-items were rows, allowing us to calculate correlations between Q-sets (persons) and to average across items.



## Results

### *Reliability*

Consensus across judges, examined separately at each level (primary, intermediate, and high school), was satisfactory. For the 28 correlations generated by all possible comparisons between the eight primary judges, mean $r$ = .75 (range = .60–.88). For the seven intermediate judges, mean $r$ = .71 (range = .51–.79). One high school sort was discarded because it failed to converge (mean $r$ with the other judges = .17). For the remaining seven high school judges, mean $r$ = .73 (range = .60–.86). These correlations are comparable to those for other criterion sorts (e.g., Block, 1971, 2006).

Criterion sorts, created by averaging items across judges, showed strong internal consistency. Spearman-Brown reliability coefficients were .96, .95, and .95, respectively, for the primary, intermediate, and high-school criterion sorts. These very high coefficients indicated that we had enough judges at each level (cf. Waters et al., 1985, who developed five criterion Q-sorts using seven judges for each, and Block, 2008, who recommends a minimum of five judges).

Both the correlations and the reliability coefficients indicate a consensus among our judges about how the very diverse dispositions in our Q-sort should be ranked. Thus, our initial goal received an affirmative answer. This allowed us to address our second goal by examining the criterion sorts that had emerged.

### The criterion sorts: Commonalities and differences

As expected, given the shared characteristics of teaching across grades, the three criterion sorts were strongly correlated (*r*s ranged from .93 to .95). Nevertheless, differences were evident also despite the lack of power entailed by the small number of judges.

To explore commonalities and differences, we first examined the most and least characteristic items in the primary and high school sorts,[2] that is, items with ranks of 8 or 9 (criterion scores > 7.5) and 1 or 2 (criterion scores < 2.5). We then looked for similar patterns in the less-extreme items. In all, 19 of 100 items had significantly different ranks in the two criterion sorts (alpha = .10), and binomial tests rejected the omnibus null hypothesis that all differences were zero, $p = .005$. Finally, we compared these differences with the intermediate sort.



### Salient characteristics of ideal primary and high-school teachers

What, then, were the particular dispositions consistently thought to be important across judges? Examination of the criterion sorts found three sets of shared characteristics for primary and high-school teachers. As shown in Table 1, by far the largest set of shared items were those reflecting the ability to successfully cope with stress, that is, to resolve problems quickly and competently while remaining calm and self-controlled. This included the ability to accept responsibility for creating problems in the first place (Item 26)—so necessary for their successful resolution. (Note the double-negative for Item 26. As shown in Table 1, it is ranked low; therefore, being *un*willing to accept responsibility is *un*descriptive. For clarity and simplicity, we have chosen to rephrase such double-negative findings positively. Note that 12 of the 13 resilience and coping items in Table 1 have this "double-negative" quality.)

A second set of six items concerned skills related to successful instruction in the classroom. This set included the largest difference in the primary and high-school criterion sorts. Having a good understanding of subject area (Item 17) was considered one of the two most important characteristics of an ideal high-school teacher, whereas for primary teachers, it was considered to be much less important; $t(13) = 4.15$, $p = .001$ (see Table 1 for means and effect sizes).

A third set of four items reflected respect and trust for other staff and students. This included facilitating others' goals (Item 75, another "double negative" because of its low score).

A final, residual set of items reflected differences in the area of social behavior. Warmth (Item 59) was considered to be highly desirable for primary teachers but

[2]We reasoned that if grade-level differences existed, they would be most evident in these two criterion Q-sorts.

**Table 1.** Most and least descriptive TBQ items (scores ≥ 7.5 or ≤ 2.5) on the criterion primary (P) and criterion high school (HS) Q-sorts.

| | Domain | Scores | | |
|---|---|---|---|---|
| Item | Resilience, coping, problem solving | P | HS | $r_{pb}^2$ |
| TBQ-50 | Tends to go to pieces under stress, becomes rattled and disorganized, cannot cope effectively. | 1.4 | 1.3 | |
| TBQ-26 | Unwilling to accept blame or responsibility for his/her actions. | 1.5 | 1.6 | |
| TBQ-81 | Overreacts to minor frustrations; is easily irritated and/ or angered. | 1.5 | 1.6 | |
| TBQ-85 | Expresses hostile feelings directly. | 2.0 | 2.1 | |
| TBQ-52 | Handles anxiety and conflicts by ignoring or avoiding them. | 2.0 | 2.9 | .29* |
| TBQ-80 | Has fluctuating moods; emotions change easily. | 2.1 | 2.4 | |
| TBQ-87 | Tends to be self-pitying; complains. | 2.2 | 2.0 | |
| TBQ-90 | Fearful and anxious. | 2.4 | 2.0 | |
| TBQ-86 | Self-dramatizing, overly emotional and attention seeking. | 2.4 | 2.3 | |
| TBQ-35 | Tends to delay or avoid action. (LOW indicates quick to act.) | 2.5 | 2.9 | |
| TBQ-51 | Tends to withdraw and disengage when under stress. | 2.5 | 2.9 | |
| TBQ-92 | Feels cheated and victimized by life. | 2.6 | 2.1 | |
| TBQ-33 | Competent, skillful. | 7.4 | 7.7 | |
| | **Teaching skills** | | | |
| TBQ-17 | Has a good understanding of the areas they teach. | 6.4 | 8.6 | .57** |
| TBQ-15 | Understands the relationships between planning, instruction, assessment, evaluation, and reporting. | 7.6 | 7.9 | |
| TBQ-9 | Knowledgeable about individual differences in how children learn. | 7.6 | 7.1 | |
| TBQ-13 | Effective at instruction in the classroom. | 7.8 | 8.4 | |
| TBQ-8 | Knowledgeable about children's cognitive development and learning abilities. | 8.1 | 7.1 | |
| | **Respect and trust** | | | |
| TBQ-75 | Tends to undermine, obstruct or sabotage others. | 1.6 | 1.3 | |
| TBQ-63 | Shows condescending behavior in relations with others. | 1.6 | 2 | |
| TBQ-74 | Tends to be suspicious and distrustful of others; questions their motives. | 2.2 | 2.6 | |
| TBQ-1 | Treats students with respect and dignity | 8.4 | 8.6 | |
| | **Other items** | | | |
| TBQ-100 | Tends to be rebellious and nonconforming. | 3.2 | 2.1 | .35* |
| TBQ-7 | Knowledgeable about children's social development. | 7.6 | 6.7 | |
| TBQ-59 | Warm and responsive. | 7.8 | 6.4 | .30* |
| TBQ-77 | Aloof, keeps people at a distance. | 2.5 | 3 | |

*Notes*. Binomial tests rejected the omnibus null hypothesis that all 26 comparisons were zero, $p = .04$. Scores ≥ 7.5 are most descriptive or characteristic; scores ≤ 2.5 are most undescriptive or uncharacteristic.
*$p < .05$. **$p = .001$.

was thought to be much less important for high-school teachers, $t(13) = 2.36$, $p = .03$. In contrast, it was thought much more important for high-school teachers to avoid nonconformity (Item 100) than for primary teachers to do so, $t(13) = 2.67$, $p = .02$.

### Similar patterns among less-extreme items

Other differences emerged that, while not strongly descriptive, were consistent with patterns just noted. For example, along with greater warmth, behaving in a sympathetic manner (Item 64) was thought to be more important for primary teachers (means = 7.1 vs. 6.0 for high-school teachers; $t[13] = 2.03$, $p = .06$, $r_{pb}^2 = .24$), as was sensitivity to interpersonal cues (Item 62; means = 6.6 vs. 5.3 for high-school teachers; $t[13] = 2.12$, $p = .054$, $r_{pb}^2 = .26$), and empathy (Item 61; means = 6.8 vs. 6.0 for high-school teachers; $t[13] = 1.91$, $p = .08$, $r_{pb}^2 = .22$).

In contrast, achievement demands were more prominent for high-school teachers. It was more important for them to be concerned about accuracy and detail (Item 98; means = 5.9 vs. 4.4 for primary teachers, $t[13] = 2.89$, $p = .01$, $r_{pb}^2 = .39$), to be productive (Item 34; means = 6.4 vs. 5.2 for primary teachers, $t[13] = 1.98$, $p = .07$, $r_{pb}^2 = .23$), and to have high expectations of others (Item 30; means = 6.1 vs. 4.2 for primary teachers, $t[13] = 2.67$, $p = .02$, $r_{pb}^2 = .35$).

Other differences were consistent with the developmental and social status of younger children. For example, it was thought more important for primary teachers to communicate with parents in a timely manner (Item 11; means = 7.1 vs. 6.1 for high-school teachers, $t[13] = 2.00$, $p = .07$, $r_{pb}^2 = .24$) and to consider the advice of parents about their children (Item 12; means = 7.2 vs. 6.0 for high-school teachers, $t[13] = 2.37$, $p = .04$, $r_{pb}^2 = .30$).

### The ideal intermediate teacher

As expected, the intermediate criterion sort shared similarities and differences with both the other criterion sorts. As with primary teachers, empathy (Item 61) was considered to be more important for intermediate teachers than for high-school teachers (means = 7.4 vs. 6.0, respectively, $t[12] = 3.33$, $p = .006$, $r_{pb}^2 = .48$). Similarly, mastery of subject area was considered to be less important for intermediate than for high-school teachers (Item 17; means = 6.7 vs. 8.6 respectively, $t[12] = 3.09$, $p = .009$, $r_{pb}^2 = .44$), as was avoiding nonconformity (Item 100; means = 3.6 vs. 2.1 for intermediate and high-school teachers, respectively $t[12] = 2.27$, $p = .04$, $r_{pb}^2 = .30$). In contrast, like high-school teachers, intermediate teachers were expected to be more concerned about accuracy and detail than were primary teachers (Item 98; means = 5.6 vs. 4.4, $t[12] = 2.11$, $p = .055$, $r_{pb}^2 = .26$) and less concerned about communicating with parents (Item 11; means = 6.4 vs.

7.1 for primary teachers, Mann-Whitney $U = 42.5$, $p = .07$, $r_{pb}^2 = .17$).[3] Thus, judgments about ideal intermediate teachers were, in sensible ways, intermediate between descriptions of ideal primary and ideal high-school teachers.

## Discussion

The results of this study extend and clarify the growing body of literature on teacher dispositions by providing clear, consistent evidence about the perceived relative importance of a wide range of teacher characteristics. We found that, at all levels, ideal teachers were frequently and strongly characterized (scores < 1.5 or > 8.5) by their ability to handle stress, frustration, and crises. For primary teachers, warmth was also strongly valued; and, for intermediate and high-school teachers, supporting others in meeting goals and treating students with respect and dignity. Effective instruction in the classroom was also among the strongest characteristics at all three levels. Consistent with effective instruction, mastery of subject area was thought to be very important for high-school teachers (but less so for primary and intermediate teachers). Similar to some of the research reviewed earlier (Diez & Murrell, 2010; Dottin, 2009), our results indicate the importance of a wide range of dispositions. A good teacher is a master of many trades.

Overall, our findings reflect some of the beliefs expressed in the literature and that are prevalent in public-school settings about the necessity of pedagogical knowledge (Devine et al., 2013; Dottin, 2009). For example, primary-school teachers should be warm, caring persons who understand and nurture the individual needs of each child, cognitively and emotionally. High-school teachers, on the other hand, must be efficient and competent in their subject area.

On the other hand, other results were more unexpected. A clear emphasis at all levels on crisis management, problem solving, and the ability to remain calm and self-controlled is striking. It is also striking that these characteristics are not often or easily taught in teacher-education programs, nor are they considered during the admission process. Both Day (2011) and Le Cornu (2009) note, however, that resilience can be learned during ITE programs. The ability to identify such characteristics in applicants would be an important asset, although longitudinal data will be necessary to establish their predictive validity (as assessed by the TBQ) for successful teaching and career retention.

The criterion sorts proved useful, too, in quantifying developmental shifts. Although it is thought important for both primary and high-school teachers to treat students with dignity and respect (Item 1), for example, as students grow older, warmth and compassion and consultation with parents become less valued in teachers. Indeed, Sudzina and Knowles (1993) found that inability to adapt teaching to specific developmental levels was one cause of

[3]We report a nonparametric test for significance because the presence of an influential outlier distorts the value of the full-sample $t$ test. For the trimmed $t$ test, $t(9) = 3.32$, $p = .009$, $rpb^2 = .55$, with trimmed means = 6.2 and 7.0 for intermediate and primary, respectively.

teacher-candidate failure on practicum. Awareness of such changes, as well as the dispositions that are important at all grade levels, can provide guidance in teacher training and evaluation.

In summary, this study identified characteristics thought to be necessary for successful teaching at all levels: primary, intermediate, and high school. As well, we identified behaviors deemed more important at some levels than at others. Practically speaking, our findings have implications for the content of teacher-education programs and might be useful for the assessment of teacher candidates at admission, during their program, or at certification. Such possibilities will need to be explored by future research.

## Limitations and future directions

The number of judges for each of the criterion sorts was small but within the range recommended by Block (2008) and found in other studies (e.g., Waters et al., 1985). The very high Spearman-Brown coefficients for each criterion indicate that the number of judges was adequate. The very high level of agreement across the three criterion sorts ($rs > .93$) indicates that the set of 22 judges, as a whole, showed a high level of consistency, a finding more noteworthy because the panels included school administrators and university faculty, as well as experienced teachers.

Nevertheless, we used a sample of convenience, not a representative sample. The inclusion of faculty from other universities and personnel from other school districts would have been desirable. It is plausible to suppose that there may be regional, national, or cultural differences in the qualities that are especially prized in teachers. Although we do not think that this is a serious issue in our panels, given that our results are congruent with other research and samples, it is one of the strengths of the Q-sort approach that these differences, if they exist, can be identified and quantified by contrasting criterion sorts developed in different subcultures and places. Further research could also explore the impact of variables such as years of teaching experience, gender, and race.

In addition to exploring such differences, other directions for future research also suggest themselves. The Teacher Behaviour Q-sort might be used by experienced "master" teachers to describe themselves. It is plausible to think that such teachers share many characteristics but also, because competent teachers must be flexible and resourceful, that they will differ as well. There are many types of excellence, and the TBQ can be used to describe them.

Such information, in conjunction with criterion sorts, could be used to evaluate applicants to teacher-education programs. Rather than relying solely on GPA, programs could make decisions based, in part, on current dispositions and the potential to become successful teachers. In addition, the TBQ could replace costly

(and problematic) measures of dispositions such as Letters of Intent and applicant interviews.

Finally, the TBQ may prove useful as a program-evaluation instrument. The comparison of Q-sorts completed as applicants enter and leave a teacher-education program can provide insight into how the program alters teacher-candidate views of their own competencies and characteristics. We intend to pursue these possibilities in our future research.

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## Appendix: Teacher behaviour Q-sort

Specified nine-point distribution: 5, 8, 12, 16, 18, 16, 12, 8, 5

Treats students with respect and dignity. (HIGH: encourages independence and individuality; LOW implies exploitation or abuse.)

Respects cultural differences in classrooms, schools, and communities. (MIDDLE implies indifference or lack of opportunity to observe. VERY LOW implies disrespect.)

Respects confidentiality. (VERY LOW implies inappropriate sharing of information.)

Behaves professionally with integrity and dignity. (LOW implies inappropriate dress or unprofessional behavior.)

Knowledgeable about the education system in British Columbia.

Knowledgeable about the law as it relates to teaching.

Knowledgeable about children's social development.

Knowledgeable about children's cognitive development and learning abilities.

Knowledgeable about individual differences in how children learn.

Knowledgeable about children with special needs.

Communicates with parents in a timely manner.

Considers the advice of parents about their children.
Effective at instruction in the classroom.
Effective at assessment and evaluation.
Understands the relationships between planning, instruction, assessment, evaluation, and reporting.
Seeks help or support as needed.
Has a good understanding of the subject areas in which they teach.
Conveys the values, beliefs, and knowledge of a multicultural, inclusive society.
Able to identify personal needs for professional development.
Contributes own expertise to activities offered by schools, districts, professional organizations.
Punctual for class or appointments.
Demonstrates critical thinking (either written or verbal).
Handles conflicts and concerns in a professional manner.
Accepts suggestions and guidance; responds positively to constructive criticism.
Able to reflect on teaching as a practice.
Unwilling to accept blame or responsibility for his/her actions.
Uncomfortable with uncertainty and complexities.
Verbally fluent; can express ideas well and communicate clearly.
Displays good writing skills; expresses ideas well and communicates clearly.
Has high expectations of others.
Talkative. (Only amount of talk is at issue, not quality or fluency.)
Attentive and able to concentrate.
Competent, skillful.
Productive; gets things done (regardless of speed).
Reluctant to commit self to any definite course of action; tends to delay or avoid action. (LOW indicates quick to act.)
Creative in perception, thought, work, or play.
Curious and exploring, eager to learn, open to new experiences.
Planful, thinks ahead.
Able to see to the heart of important problems.
Reflective; thinks and deliberates before speaking or acting.
Uses and responds to reason.
Resourceful in initiating or carrying out activities.
Self-assertive.
Self-reliant, confident, trusts own judgment.
Seeks to be independent and autonomous.
Tends to be pleased with and proud of his/her products and accomplishments.
Persistent in activities, does not give up easily. (VERY HIGH: implies perseveration.)
Recovers or recoups after stressful experiences.
Shows physical symptoms of stress. (HIGH implies possible negative consequences for health; LOW implies physical calmness under stress.)
Tends to go to pieces under stress, becomes rattled and disorganized, can't cope effectively.
Tends to withdraw and disengage when under stress.
Handles anxiety and conflicts by ignoring or avoiding them.
Characteristically pushes and tries to stretch limits; sees what he or she can get away with.
Inhibited; delays gratification of needs and impulses unnecessarily. (LOW: Is unable to delay gratification; cannot wait for satisfactions.)
Shy and reserved, makes social contacts slowly.
Vital, energetic, lively.

Physically active.
Develops genuine and close relationships.
Warm and responsive.
Protective of those close to him/her. (HIGH implies overprotection. LOW implies lack of protection. MIDDLE implies appropriate nurturance.)
Shows a recognition of the feelings of others, is empathetic.
Sensitive to a wide range of interpersonal cues.
Shows condescending behavior in relations with others.
Behaves in a sympathetic or considerate manner; compassionate.
Behaves in a giving way toward others (regardless of the motivation involved).
Tends to arouse liking and acceptance in others.
Has social poise and presence; appears socially at ease.
Responds to humor.
Cooperative, with whom easy to get along.
Tactful rather than blunt and assertive.
A genuinely dependable and responsible person.
Turned to for advice and reassurance.
Open and straightforward. (LOW: guileful and deceitful, manipulative, opportunistic.)
Tends to be suspicious and distrustful of others; questions their motives.
Tends to undermine, obstruct or sabotage others.
Has transient interpersonal relationships, is fickle.
Aloof, keeps people at a distance; avoids close interpersonal relationships.
Likes to be by him/herself, enjoys solitary activities. (LOW: Likes to be with others; gregarious.)
Tends to keep thoughts, feelings, or products to self.
Has fluctuating moods; emotions change easily.
Overreacts to minor frustrations; is easily irritated and/or angered.
Emotionally bland or neutral; doesn't express strong feelings either positive or negative.
Emotional expressive (facially, gesturally, or verbally).
Can acknowledge unpleasant experience and admit to own negative feelings.
Expresses hostile feelings directly.
Self-dramatizing, overly emotional, and attention seeking.
Tends to be self-pitying; complains.
Tends to feel guilty (regardless of whether verbalized or not).
Tends to brood and ruminate or worry.
Fearful and anxious.
Restless and fidgety.
Feels cheated and victimized by life.
Calm, relaxed in manner.
Cheerful. (LOW: implies gloominess.)
Feels satisfied with himself/herself.
Has a wide range of interests. (Superficiality or depth of interest is irrelevant.)
Engages in personal fantasy and daydreams, fictional speculations.
Very attentive to and concerned about accuracy and detail.
Genuinely values intellectual and cognitive pursuits. (Ability or achievements are not relevant.)
Tends to be rebellious and nonconforming.