Singapore:
What makes an effective teacher?

SERIES 12 OF 23

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Decades of research make it clear: teachers make a difference in student learning. In fact, Stanford University economist Eric Hanushek (1992) has noted that the difference between a good and a bad teacher can be a full level of achievement in a single school year. Given the strength of these findings, nations around the world recognize that in order to improve educational outcomes and equity they must focus on effectiveness of teachers. A critical step toward achieving that goal is for individual countries to identify the competencies required for effectiveness and use them to inform teaching standards, pre-service teacher preparation, professional development programs and performance evaluations. To make an impact, those systems and processes will need to be based on a common understanding, within each country, of what it means to be an effective teacher.

Oxfam’s international study of teacher competences and standards concludes that in order to build that common understanding, it is “absolutely necessary that the question as to what is considered a quality educator is investigated among stakeholders” (Bourgonje & Tromp, 2011, p. 145). Giving stakeholders a voice not only allows us to understand how they think and feel about a topic; it provides an opportunity to help frame important policy decisions that directly impact their lives. Pearson is therefore surveying learners, teachers, principals, education researchers, policymakers and parents in 23 countries regarding their perceptions of what it takes to be an effective teacher. Pearson is comparing the views expressed by these stakeholders with both current government teaching standards and research on effective teaching.
This report, the twelfth in the series, summarizes the results of the survey conducted in Singapore, where for decades, they have been looked to as a model education system due to consistently high student achievement on international tests. In the global report, 23 participating countries are compared not only across stakeholder groups, but by country as well.

**The Survey**

To learn the top qualities education stakeholders in Singapore seek in their teachers, we administered surveys across the country (see Table A1 in the Appendix). The stakeholder groups include:

- Students ages 15-19
- Parents of K-12 students
- K-12 (primary and secondary) teachers
- K-12 (primary and secondary) administrators
- Education researchers and policymakers

Respondents were asked to list, in their own words, between 3 and 15 qualities that they feel are most important in making an “effective” teacher and to indicate what type of teacher, by subject(s) and grade level(s), they were thinking about while creating their list. The survey did not define “effective” for respondents, other than that it meant “good,” allowing respondents to define what an effective teacher meant for themselves. We developed a coding system to categorize responses, based on prior research about competencies of effective teachers. This coding scheme was reviewed by teachers, principals, education policymakers and researchers and revised iteratively as additional responses were coded, resulting in a final list of 32 categories.

**The Most Important Qualities of Teachers in Singapore**

We found remarkable consistency in how the groups of surveyed stakeholders responded when they were asked to list between 3 and 15 of what they believed to be the most important qualities or competencies of effective teachers. The most common response across the full sample was that effective teachers need to build trusting, compassionate Relationships with their students. It was also the most common response when comparing primary and secondary grade levels, private and public schools, and males and females.

The second and third most common responses across all stakeholder groups were knowledge of students and dedication. Knowledge of Learners involves regarding students as individuals and paying attention to their individual learning needs, and how they learn and develop. Dedication refers to a love of teaching or passion for the work, which includes commitment to students’ success.
Executive Summary

Most Important Qualities of Teachers in Singapore

| 1 | Ability to Develop Trusting, Productive Relationships |
| 2 | Knowledge of Learners |
| 3 | Dedication to Teaching |
| 4 | Engaging Students in Learning |
| 5 | Patient, Caring, Kind Personality |
| 6 | Classroom Management |
| 7 | Professionalism |
| 8 | Subject Matter Expertise |
| 9 | Ability to Make Ideas and Content Clear |
| 10 | Teaching Skills/Pedagogical Practices |

When the responses of all stakeholder groups are combined, the other seven categories in the Top 10 qualities or competencies mentioned, were in descending order:

- Ability to make content and learning *Engaging* and to motivate students to learn
- A *Patient, Caring*, and kind personality
- Ability to create and manage a productive learning environment (*Classroom Management*)
- Workplace Professionalism
- Deep content or *Subject Knowledge*
- The ability to make new or complex ideas and content clear for learners (*Make Ideas Clear*)
- *Teaching Skills* and pedagogical methods

Nine of the Top 10 most frequent responses for each group of stakeholders were shared by all groups and include trusting relationships with students, knowledge of learners, dedication, ability to engage students, patient, caring, and kind personality, classroom management, professionalism, subject knowledge, and ability to make ideas and content clear. Additionally, stakeholders associated with public and private schools shared all of their Top 10 response categories, in varying order, with each group valuing the same top 3 in the same order.

When addressing the qualities most valued for a primary or secondary teacher,
respondents also shared all of their Top 10, again in varying order, with the same top 2 in the same order. These results reflect that the qualities most valued were not specific to grade level taught. Male and female respondents shared all of their Top 10 most valued qualities, and valued the same top 2 qualities in the same order.

The categories of qualities mentioned most often across the entire sample reflect how strongly education stakeholders in Singapore value dispositions of relatedness, responsiveness, and character in their teachers. There is research that supports the link between these dispositions, teacher effectiveness, and student outcomes. The dispositions of effective teachers are characterized as the bridge between a teacher’s capabilities (what they know and CAN do) and the actions they take (what they choose to do).

Overall, the survey responses align well with research on effective teaching and with the Evaluation Performance and Management System for public school teachers outlined by the Ministry of Education. But there were a few significant gaps between what the educator stakeholder groups (teachers, principals, researchers, and policymakers) valued most and what research tells us matters most in enhancing student learning. Few educators addressed the importance of knowledge and use of Assessment to evaluate and track student progress. Yet researchers suggest that this is the single most important aspect of teaching practice to enhance student learning. Also, few referenced making learning Challenging and rigorous for all students, in the belief that all can learn. Additionally, there was surprisingly little mention of using Technology to enhance learning, and no mention of focusing on Deeper Learning, all of which have garnered strong interest among teacher groups, researchers and policymakers.

Implications
The greater emphasis placed on teacher dispositions such as relatedness, caring and kindness, reflect a strong focus on the dispositions required for effective teaching. Dispositions are considered to be the bridge between what a teacher is able to do and what he or she chooses to do. Moreover, the results reflect a strong emphasis on a student-centered focus for teaching and learning. These findings among Singapore education stakeholders may reflect the belief that without these critical dispositions, teaching-specific knowledge and skills are insufficient to foster effective learning. This study offers an opportunity for Singapore to evaluate teacher effectiveness policies and the impact on the quality of the teaching workforce. Ultimately, the survey results reaffirm the notion that, at its foundation, learning is a social enterprise, and effective teaching is about trusting relationships between teachers and students that foster student success, as these communities define it.
Using These Results to Improve Teaching Practice in Singapore

We recommend that the results of this survey be used to inform and guide the definition of what it means to be an effective teacher in the teaching and learning contexts of Singapore. Moreover, the results can inform discussions about teacher preparation, hiring, training, and evaluation, and education policymaking in the spirit of Singapore’s emphasis on continuous improvement.

Given the stakeholders’ emphasis on the importance of teacher-student relationships, teacher training programs could place greater emphasis on dispositions that stakeholders believe are essential for effectiveness, such as patience, compassion, passion for the work, and responsibility.

Cognitive science tells us that these relationships are critical to fostering effective learning, and thus this finding should be taken seriously. The programs could assess these qualities in candidates, counsel candidates on career fit, and provide training to develop and enhance teaching dispositions in future teachers. As other researchers have noted, focusing on improving the social relationship that is at the heart of student learning should lead to improvements in a wide range of student outcomes in schools.

Likewise, training programs may want to emphasize the knowledge and skills that were mentioned less frequently but have been shown to be critical to effective teaching and student learning, such assessment of student progress and provision of a challenging, rigorous curriculum for all students, integration of technology for learning, and involving families in their students’ education.

While this research identifies many different qualities and competencies of effective teachers, we caution against using the results to generate a checklist approach under the misguided belief that there is a single winning pattern of competencies to be an effective teacher. Finally, it cannot be overstated that to be effective teachers, the work conditions and environment, first and foremost, must be well managed; school context and community culture have a profound influence on the way different teacher roles and competencies are understood, prioritized, and practiced.

“Given the stakeholders’ emphasis on the importance of relationships, teacher training programs could put a greater emphasis on dispositions.”
What makes an effective teacher? By whose definition? With the global focus on improving the quality of the teaching workforce, identifying the qualities of an effective teacher, and the accompanying competencies required, is a critical first step. Many countries are in the process of developing or revising their teacher evaluation systems, teaching standards, pre-service teacher preparation, and/or in-service teacher training programs. To make an impact, those systems and processes should be based on a common understanding of what it means to be an effective teacher, with a set of standards reflecting the expected knowledge, skills, attributes, and other competencies. An important decision for preparing, training, and evaluating teachers is how the standards are developed and by whom (e.g., Bourgonje & Tromp, 2011; OECD, 2013).

Oxfam’s international study of teacher competencies and standards concludes that it is “absolutely necessary that the question as to what is considered a quality educator is investigated among stakeholders” (Bourgonje & Tromp, 2011, p. 145). It is often the case that those who are most directly impacted by the set of competencies and standards—i.e. the teachers themselves, their students, students’ families and school principals—have little say in defining which features of effective teachers are valued most.

In response to these concerns, we undertook this study to understand what key stakeholders in school systems from around the world value as the most important qualities of an effective teacher. Our focus was to compare the perspectives of the following sources regarding these qualities:

1. Key education stakeholders (students, parents, teachers, principals, education researchers and policymakers);
2. The government (reflected in national teaching standards); and
3. Research on effective teaching

This report summarizes what we found in Singapore.¹

¹ There are 23 countries (technically, Singapore is a city state) participating in this survey, listed in Table A1 in the Appendix of this report.
Our Study

We engaged an international marketing research firm to collect the survey data from the six stakeholder groups (see Figure 1) across Singapore. Given the limited sample size of education researchers and policymakers, we combined their surveys and responses in our analyses.

Along with demographic items—e.g., respondent’s city, gender, school or job experience—participants responded to two key items:

1. List a minimum of 3 and a maximum of 15 of the most important qualities of an effective (good) teacher.

2. Indicate the type of teacher you are thinking of as you create the list.

For the second part, we provided a matrix of grade levels and subject areas taught. This allows us to examine whether the list of qualities differs for different grade levels and subject areas. It is important to note: *we did not provide a list of qualities for respondents to endorse; we asked them to list their own, in their own words, so as not to influence results.*
The study was driven by the following set of research questions:

1. What do different stakeholder groups regard as the most important qualities of an effective teacher?

2. Do these qualities differ by context?

3. How do these qualities align with teaching standards and research on teacher effectiveness?

Figure 2 summarizes the methods we used for data collection. More detailed information is in the Appendix of this report, including data collection and sampling methods, areas surveyed, coding of survey responses (Table A3); and who we surveyed (Figures A2–A6).

Figure 2. Summary of survey methodology

1. Translated surveys and locals reviewed wording
2. 3rd party marketing research organization collected data via online surveys and CATI per ESOMAR guidelines
3. Pearson trained data coders and conducted random quality checks

*Note: CATI = Computer Assisted Telephonic Interviews. ESOMAR is an international organization that promotes the value of market and opinion research to inform decision-making. Their guidelines for ensuring high quality data and rigorous methodology are found at www.esomar.org

The Singapore Education System

Education in Singapore is primarily managed by the Ministry of Education (MoE). Education became compulsory in 2003 for students aged 6 to 14 through the end of primary school. Singapore's educational performance is widely regarded as one of the most successful in the world, as attested by its Top 5 rankings in all categories of the 2012 PISA assessments (OECD, 2014). Recent educational reforms have strived to move to a more "student-centered, values-centric" education with a focus on holistic education, including moral development
and citizenship. Moreover, the Program for Rebuilding and Improving Existing Schools (PRIME) aims to provide schools with the latest technologies in computers and media resources, larger classrooms and staff rooms, and pastoral care rooms along with health and fitness rooms. Singapore also emphasizes bilingualism in an effort to better prepare students, with a focus on both English and Mother Tongue languages.³

In 2014, the majority of students attended government funded public schools. Students aged 4 to 6 may attend preschool. Primary school lasts six years, including the foundation stage from primary 1 to 4 and the orientation stage from primary 5 to 6. The focus of primary school education is language and mathematics, but subject-based banding allows students to specialize their education by mixing both standard and foundation subjects to teach to their strengths. Students take the Primary School Leaving Exam (PSLE) to determine which secondary school they attend. Secondary schools are chosen by exam scores and student choice to fit their needs. Secondary education generally lasts from 4 to 5 years. There are numerous types of secondary schools including autonomous schools, independent schools, Special Assistance Plan (SAP) schools, specialised independent schools, and specialised schools. Autonomous and independent schools have broad curricula but Independent schools also enjoy more freedom in how they teach and run programs. SAP schools focus on English and Chinese biliteracy, while Specialised Independent schools are tailored for students with aptitudes in various subjects. Specialised schools are geared towards students who prefer practical learning, including vocational programs.⁴ There are also three courses to choose from at the Secondary level: Express, Normal Academic (N(A)), and Normal Technical (N(T)). The Express course leads to the General Certificate of Education (GCE) O-Level exam, while N(A) and N(T) courses lead to GCE N-Level exams. Students have the opportunity to switch to a different course during their academic career if they find it suits them better. Integrated Programmes are for gifted students who prefer a more independent learning style. After six years, students in Integrated Programmes have the opportunity to take pre-university exams, bypassing the O-Level exams (MoE, 2015).

In an effort to better prepare students for the 21st century and to become lifelong students, the MoE will implement both an Applied Learning programme and a Learning for Life programme in every school by 2017. These programmes will focus on developing 21st century skills through integrating real-life issues into the classroom while still allowing students to pursue their own interests (MoE, 2015).

Figure 3 summarizes some key information about the Singapore education system.
**Teacher Preparation**

Teachers in Singapore typically receive their pre-service training at the National Institute of Education (MoE, 2015). In order to become eligible to teach at both the primary and secondary levels, individuals have a few different options. The most common route is to have a university degree, along with a professional teaching qualification such as the Post-Graduate Diploma in Education (PGDE) or a diploma in education. Other routes include having five O-Level passes including Mathematics and English, along with either a Polytechnic Diploma or two A-Level passes and two AO-Level passes; two A/H2-Level passes and two AO/H1-Level passes; or an acceptable IB Diploma score. Teachers in Singapore are also provided with many opportunities to take part in various in-service professional development activities.

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**Figure 3. The Singapore education system**

- **93%** of teachers hold a higher education diploma
- **96%** of teachers are employed full time
- **2.9%** of GDP spent on education

#### Student Teacher Ratio

- **Primary**: 16.5
- **Secondary**: 12.5

#### Types of Schools

- **Primary**:
  - Specialised: 22.2%
  - Independent: 18.2%
  - Government Aided: 77.8%
  - Government: 77.3%

- **Secondary**:
  - Specialised: 18.8%
  - Independent: 37.5%
  - Government Aided: 18.8%
  - Government: 25.0%

#### Number of Students

- **Primary**:
  - Specialised: 28.8%
  - Independent: 71.2%
  - Government Aided: 1.1%
  - Government: 1.4%

- **Secondary**:
  - Specialised: 20.8%
  - Independent: 70.0%
  - Government Aided: 0.6%
  - Government: 6.6%

#### PISA rankings (2012)

- **Math**
  - 2 of 65
- **Science**
  - 3 of 65
- **Reading**
  - 3 of 65

#### Teacher Gender Ratio

- **Female**: 65%
- **Male**: 35%

Notes: All data is from 2014 except for teacher statistics (2013), education expenditure (2013), and PISA scores (2012). Student teacher ratio includes students and teachers in Government, Government Aided, Independent, Specialised Independent and Specialised schools. Mixed Level schools comprise Primary & Secondary Schools (P1-S4/5) and Secondary & Junior College Schools (S1-JC2).

Sources: Teacher statistics (OECD, 2013); education expenditure (http://www.uis.unesco.org); student teacher ratio (MoE, 2015); PISA rankings (OECD, 2014); types of schools and number of students (MoE, 2015).
**Teacher Preparation**

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**Teaching Standards**

Like many of the countries in our study, Singapore has multiple sets of teaching standards, depending on the purpose. For example, the MoE put forth a set of values, skills and knowledge “for the 21st Century teacher to support the 21st Century learner.” The emphasis is on a personalized, learner-centered approach to teaching and learning. Known as the V3SK, the document specifies competencies related to learner-centered values, teacher identify, and service to the profession and community.

In 2001, Singapore’s MoE designed and implemented a new method of measuring teacher effectiveness for teachers in all subjects and grades that was linked to performance. The system, known as the *Evaluation and Performance Management System* was designed to ensure Singapore’s continued recruitment, retention, and performance of talented teachers. The new system reflected a “major shift” from focusing teacher evaluation on observable characteristics (e.g., subject matter knowledge, classroom management, pedagogical skills), to emphasizing characteristics that lead to exceptional performance (Steiner, 2010). The EPMS is used together with performance outcomes to evaluate, career track, promote, and pay teachers. The performance outcomes for Singapore’s teachers include student learning, child development, collaboration with parents, and contribution to the school community (Steiner, 2010).

Since the EPMS are designed to apply to all teachers regardless of grade or subject, we focus on these standards for alignment with our survey findings, as shown in Table 2 of this report.

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5 See https://www.moe.gov.sg/careers/teach/frequently-asked-questions
Developing Effective Teachers in Singapore

The education system in Singapore has proven to be successful and serves as a global model for countries working on improving their systems. Along with ranking in the Top 5 of the 2012 PISA assessments, Singapore has other impressive educational achievements relating to its teaching workforce. Some of these achievements include:

- **A young but strong teaching workforce:** While the average age of teachers in Singapore is the lowest among TALIS countries at 36 years, 83% of teachers (vs. TALIS average of 67%) have completed subject-specific practicums before becoming full-fledged teachers. In addition, 99% of new teachers in Singapore complete formal induction programmes (vs. TALIS average of 44%) preparing them for entering the teaching profession (OECD, 2013).

- **Strong teacher mentoring system:** Approximately 39% of teachers (vs. TALIS average of 14%) in Singapore serve as mentors to other teachers while 40% of teachers (vs. TALIS average of 13%) report having an assigned mentor (OECD, 2013).

- **Supportive school environments:** Approximately 81% of teachers in Singapore claim that their schools provide collaborative environments characterized by mutual respect and support (OECD, 2013).

- **High job satisfaction:** Approximately 88% of teachers in Singapore report being satisfied with their job, with 82% stating they would choose the teaching profession over again if given the choice (vs TALIS average of 78%) (OECD, 2013).

- **High perceived value of the teaching profession in Singapore:** Almost 70% of teachers feel that their profession is valued by Singapore society (vs. TALIS average of 31%) (OECD, 2013).

- **High participation in professional development:** Participation rates in various professional development activities are high among teachers in Singapore. These include activities such as attending courses and workshops (93%), attending conferences (61%), in-service teacher training (17%), networking (53%), and research (45%) (OECD, 2013).

Given these and numerous other achievements of the Singapore education system, it is important to acknowledge that results of this study should be considered with that context in mind. When asking individuals to share what they value most in their teachers, we cannot forget about the education system and the context in which these responses occur.
The main purpose of this survey was to elicit from a variety of key stakeholder groups what qualities they believe are most important for a teacher to be effective. Stakeholders included 102 students, 101 parents, 105 teachers, 18 principals, and 25 education researchers and policymakers from the different regions of Singapore (see Appendix for regions surveyed). Most of the students (93%) went to public schools and all were in secondary school. Their median age was 16. For parents, 93% had attended public schools as a student. Teachers had a median of six years experience and principals had a median of 5.5 years experience. Most teachers (62%) worked in public schools while most principals (83%) worked in private schools, many of whom worked in pre-schools, all of which are private in Singapore. The education researchers and policymakers were also experienced, with a median of six years on the job. More detailed information about each stakeholder group is in the Appendix (Figures A2 – A6).

We asked survey participants to list a minimum of 3 and maximum of 15 most important qualities of an effective teacher. The number of responses ranged from 3 to 10, and the median number of responses was 3 for the entire sample and for each stakeholder group. It is important to note, however, that multiple qualities were often listed within a single response.

A description of how we developed the coding categories and a description of each can be found in Table A3 in the Appendix.

A key question driving this study was whether there were important differences in the qualities that different groups of education stakeholders value most for a teacher to be regarded as effective. Therefore we compared the results by five stakeholder groups (we combined education researchers and policymakers due to the small numbers), public and private schools, grade levels, and gender of respondents.

To compare our survey results with teaching standards and research on teacher effectiveness, we conducted an extensive review of the research literature and the aforementioned guidelines for teacher competencies put forth by the MoE. We focused on international research aimed at identifying general competencies that could be applied globally for K-12 teachers, and on studies conducted specifically with teachers in Singapore.

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6 Because the term “effective” implies a person who is successful at producing an intended outcome, we let the stakeholders determine what the term “effective” meant to them with respect to teachers and teaching.

7 On average, participants varied from the median number of responses by about 1. Additionally, each response often included multiple qualities, so the median value is a low estimate of the number of responses from each stakeholder group.
What We Learned

**Top 10 Reported Qualities of An Effective Teacher**

The Top 10 endorsed qualities across all stakeholder groups surveyed in Singapore are shown in Figure 4. The color spectrum ranges from red to green—the lowest to highest frequency of endorsement. To ensure a high response rate, we did not ask participants to prioritize or rank order the qualities they listed. Therefore we report the frequency by which each category was endorsed, for the overall sample (“All”), and by stakeholder group. The color patterns indicate some interesting differences between some of the stakeholder groups, which we address in the following section.

![Figure 4. Top 10 most important qualities of an effective teacher](image)

Note: A description of each category is found in Table A3 in the Appendix. These are the Top 10 qualities for the entire sample, with frequencies by stakeholder group. Red reflects the lowest and green the highest frequency of endorsed categories.
The following describes the top 5 qualities mentioned most frequently by the entire sample of stakeholders.

**Ability to Develop Trusting, Productive Relationships**

It is clear from the results of this survey that stakeholders in Singapore strongly value the teacher’s ability to cultivate trusting, productive Relationships and relate to as well as mentor students. Relationships with students was the most valued quality or competency of an effective teacher for parents, students and teachers with parents reporting this quality most frequently (34.6% of their responses). As our word cloud illustrates, being caring and patient towards students were some of the most common descriptors, along with listening and understanding (see Figure 5).

Researchers have documented the link between learning outcomes and strong, collaborative relationships between teachers and students (e.g., Zins et al., 2004; Singh & Sarkar, 2012; Gehlbach et al., 2012; Collie, Martin, Papworth, & Ginns, 2016). In a study by Gehlbach and colleagues (2012) with middle school students and teachers in the United States, the researchers found that as teacher/student relationships improved, teachers interacted more frequently with the students, and students finished the semester with higher grades. Moreover, the achievement gap between under-served and well-served students dropped by 65 percent.

![Figure 5. Ability to build trusting relationships](image)
Teaching is characterized as a complex relationship between the educator and the student, where teachers “know and respond with intelligence and compassion” to students and their learning (Rodgers & Raider-Roth, 2006). Barber (1995) refers to this relationship as part of the “unknown universe” of teaching:

...that crucial part of education that is to do with the classroom interaction of learner and teacher and with the extraordinary ability of teachers to generate sparks of learning, even in the most inauspicious of circumstances (p. 76).

Bransford et al. (2007) note that teachers need to be able to build productive, trusting relationships with students to create a safe, positive and productive teaching and learning environment. Cognitive neuroscience also emphasizes the importance of trusting social relationships for enabling, supporting and enhancing learning. In essence, trusting relationships reduce the cognitive load and outcomes, including learning, require less effort (Coan & Sbarra, 2015).

**Knowledge of Learners**

The second most commonly reported quality of an effective teacher for the entire sample was *Knowledge of Learners*. This is a broad category that includes knowledge of the cognitive, social, and emotional development of learners. Such knowledge includes an understanding of how students learn at a given developmental level; how learning in a specific subject area typically progresses (e.g., learning progressions or trajectories); awareness that learners have individual needs and abilities; and an understanding that instruction should be tailored to meet each learner’s needs. This broad set of competencies appears often in the research on effective teaching, underscoring the notion that instructional practices should align with what learning science tells us about how humans learn (e.g., Clark & Mayer, 2011; Dunlosky et al., 2013) and that “one size does not fit all” in teaching and learning (e.g., Bransford et al., 2007; Klem & Connell, 2004; Leu, 2005; OECD, 2013; Bourgonje & Tromp, 2011).

In Singapore, many of the responses focused on having an understanding of student’s needs, and making an effort to help students of all abilities, including those who are “slower” or “weaker.” This category was ranked highest among principals (1st) who also reported it most frequently (17.6% of responses). **Figure 6** illustrates survey responses regarding this category.
What We Learned

Dedication to Teaching

The third most frequently cited quality by the overall survey sample was the teacher's Dedication. It was ranked highest in the Top 10 list for teachers (3rd) and was reported with similar frequency for teachers and principals (13.3% and 13.2% of responses respectively.) Dedication refers to a love of teaching or passion for the work, which includes commitment to students' success. Responses often referred to a passion for teaching and going the extra mile for students. Dedication is a reflection of an individual's intrinsic motivation. According to the popular book “Drive” (Pink, 2011), intrinsic motivation is driven by an individual's sense of autonomy or control over their own work and their own lives; the ability to learn and create new things; and the desire to improve oneself and make the world a better place.

Like everyone else, for teachers to be intrinsically motivated to be effective in their work, these conditions of autonomy, mastery, and contribution to a greater good must be in place. As mentioned earlier in this report, the vast majority (88%) of Singapore teachers appear to be satisfied with their job and workplace conditions (OECD, 2013).

The features most frequently mentioned related to being a dedicated teacher are illustrated in Figure 7.
Engaging Students in Learning

The fourth most frequently mentioned quality across all stakeholders is the teacher’s ability of Engaging students in the course content, in learning, and includes the ability to motivate students to learn. Researchers talk about three types of engagement that are required for students to learn: cognitive, emotional and behavioral (Fredricks, 2014). Research supported ways to increase student engagement include (James, 2014):

- making the learning activities meaningful for the students
- helping students to believe they can master the learning
- nurturing students’ sense of control over their own behaviors and goals
- having students work collaboratively to learn
- building positive teacher-student relationships
- focusing on mastery learning instead of grades and exam scores

Survey responses in our study primarily focused on making content interesting and the teacher’s ability to motivate students to learn. Students often mentioned making the learning fun. Researchers and policymakers mentioned this category most frequently (ranked 2nd and 11.3% of responses). Figure 8 highlights the features mentioned most.
Patient, Caring, Kind Personality

The fifth most valued quality for the full sample was personality characteristics related to being a compassionate person, particularly with students (Patient, Caring). This category was ranked highest among the Top 10 lists for parents and students and was mentioned most frequently by students (9.6% of responses). There is a significant body of research indicating that teacher dispositions are strongly related to student learning and development (Schulte et al., n.d.). Several key dispositions include a caring attitude and sensitivity to student differences. There is also research on the impact of work environment, dispositions and burnout in teachers. Kokkinos (2007) found that work environment stressors, particularly management of student misbehavior and time constraints, were associated with emotional exhaustion and burnout in primary school teachers. In such situations, teachers are more likely to be emotionally detached and to become more cynical toward their students in order to avoid subsequent stress. However, dispositions that make up a caring attitude, such as sociability, were found to function as buffers.

Recent surveys of English teachers indicate that workplace stress, particularly due to being overworked and student misbehavior, may be a growing concern (Precey, 2015). Figure 9 illustrates respondents’ ideas in this category, highlighting the importance of being caring, patient and approachable, along with having a sense of humor. It is likely that these characteristics are helpful, if not necessary, in building the trusting relationships between teachers and students that the stakeholders in Singapore clearly value.
Do Responses Differ by Stakeholder Group?

The first research question driving this study was whether the five different stakeholder groups differed in the qualities they valued most in an effective teacher. Figure 10 compares the Top 10 most valued qualities for each stakeholder group. All stakeholders shared 9 of their Top 10 most valued qualities: Relationships, Knowledge of Learners, Dedication, Engaging, Patient, Caring personality, Classroom Management, Professionalism, Subject Knowledge, and Making Ideas and Content Clear. Where stakeholder groups varied, includes the following:

- **Teaching** or pedagogical **Skills** made the Top 10 list for all stakeholder groups except principals.
- **Cultural Competence** made the Top 10 list for principals only.

All stakeholder groups except principals shared all 10 of their Top 10 lists, and principals shared 9 categories with the other four stakeholder groups. Overall, we take these results to mean that education stakeholder groups, despite their different roles in the education system, value similar qualities as the most important for being an effective teacher. Moreover, it is notable that the teacher’s ability to develop and maintain trusting and compassionate relationships with students is highly valued, particularly by parents, students and teachers while school leaders (principals) and research and policymakers prioritize the more technical knowledge for the profession (e.g., subject knowledge, knowledge and understanding of learners).
Do Responses Differ by Context?

The second research question driving this study was whether the qualities most valued in an effective teacher differed by context. We compared responses by the type of school (public and private), grade level (primary and secondary) and subject matter. All stakeholder groups except education researchers and policymakers indicated their affiliation with public or private schools, so their data are not included in that analysis. Figure 11 compares the Top 10 qualities valued by those from public and private schools. Categories are color coded for ease of comparison.
As Figure 11 illustrates, public schools shared the same Top 10 responses as the private schools, although they varied in order of frequency, suggesting some possible differences in priorities. However, both groups share the same top 3 in the same order.

**Figure 11. Top 10 qualities by type of school**

Note: Categories are color coded for ease of comparison. Education researchers and policymakers were not asked to indicate public versus private school and therefore their data are not included.
For grade levels, results were similar. **Figure 12** shows the results for the Top 10 categories across the sample, by grade level of the teacher the respondents were thinking of when they listed the most important qualities of an effective teacher. Both grade levels show the same Top 10 categories, with the same top 2 priorities. Interestingly, for secondary teachers, stakeholders emphasized the ability to engage students in their learning more so than for primary teachers.

![Figure 12. Top 10 qualities by grade level]

We were unable to make meaningful comparisons between content areas taught due to the high number of content areas and low number of responses representing them, even after combining conceptually similar areas.
We also compared the responses of male and female respondents to assess if there were any important differences. They share the same Top 10 most valued qualities, and share the same top 2 in the same order (see Figure 13). Two noticeable differences include the females’ emphasis on the teacher’s Dedication to his or her work and students, and the males’ emphasis on a Patient, Caring personality.

![Figure 12. Top 10 qualities by gender](image)

We interpret these findings to suggest that key education stakeholders—parents, teachers, students, principals, education researchers and policymakers—value the same qualities of an effective teacher regardless of whether they come from public or private schools, and regardless of grade level taught. Moreover, male and female stakeholders value the same qualities in teachers. **Overall, and regardless of context, these stakeholders value the ability of teachers to develop and maintain trusting, compassionate relationships with students.**
What We Learned

Do Survey Responses Align with Teaching Standards and Research?

The third research question driving this study was whether stakeholders’ values regarding effective teachers align with teaching standards, and how survey responses and teaching standards compare to what research tells us about effective teachers and teaching. Research on competencies of effective teachers is broad and often country-specific. Therefore, we focused primarily on studies identifying general (versus content-specific) competencies of grade school (primary and secondary) level teachers.

We compare our survey results with the competencies contained within Singapore’s Enhanced Performance Management System (EPMS). These competencies are used by Singapore teachers and schools as tools for self-assessment, professional development, and career development/promotion. EPMS describes different competencies for each of the different roles within the education system (teachers, principals, and specialists). Given the focus of our survey, we focus on the competencies relevant for teachers. Additionally, some of the competencies apply to all teachers, while others only apply to more senior/experienced teachers; we demonstrated how both align to our survey results in Table 2.

<table>
<thead>
<tr>
<th>Competency Cluster</th>
<th>Competencies</th>
<th>Our Survey Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuturing the Whole Child</td>
<td>All Teachers • share values with student (11) • take action by discovering students’ possibilities and developing the student’s self-confidence and values (11, 12, 31)</td>
<td>10 - Leadership 11 - Ability to build productive, trusting relationships, relate to, &amp; mentor students 12 - Knowledge of how students learn &amp; develop; personalize learning 18 - Collaborator; ability to work with colleagues 31 - Teaching students skills necessary for college &amp; career success/21st century skills</td>
</tr>
<tr>
<td></td>
<td>Master Teachers • act consistently in the student’s interest (11), • get others in the school to join the education process (10, 18) • influence policies, programs, and procedures that nurture the whole child (10)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Competencies within Singapore’s Enhanced Performance Management System aligned with survey results
### Competency Cluster

<table>
<thead>
<tr>
<th>Competency Cluster</th>
<th>Competencies</th>
<th>Our Survey Responses</th>
</tr>
</thead>
</table>
| Cultivating Knowledge | **Subject Mastery** | 1 - Deep content knowledge, understanding of subject matter and curriculum  
2 - Passion; commitment; dedication  
3 - Creativity, adaptability, innovation  
10 - Leadership  
14 - Mindset & passion for continuous learning & challenging oneself to improve  
20 - Pedagogical knowledge, skills & methods |
| | All Teachers |  
| | • active interest in subject area and awareness of related education issues in the subject area (1, 2)  
| | • take initiative to keep abreast of education trends and development in the subject (1, 14)  
| | Master Teachers |  
| | • apply knowledge of trends and developments in the lessons (20)  
| | • get feedback to determine effectiveness (14)  
| | • develop innovative approaches (3)  
| | • provide thought leadership by exploring and expanding the horizon of the teaching field and subject area (10, 14)  
| | **Analytical Thinking** | 7 - Ability to plan meaningful lessons/ learning tasks/ instruction; organized  
16 - Intelligence; critical thinking; problem-solving ability |
| | All Teachers |  
| | • break down problems (16)  
| | • identify cause-and-effect relationships (16)  
| | • prioritize tasks according to their importance (7)  
| | Master Teachers |  
| | • see basic and multiple relationships (16)  
| | • analyze and develop solutions to complex, multidimensional problems (16)  

Table 2. Competencies within Singapore's *Enhanced Performance Management System* aligned with survey results (continued)
### What We Learned

<table>
<thead>
<tr>
<th>Competency Cluster</th>
<th>Competencies</th>
<th>Our Survey Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivating Knowledge (cont)</td>
<td>Initiative</td>
<td>10 - Leadership</td>
</tr>
<tr>
<td></td>
<td>All Teachers</td>
<td>16 - Intelligence; critical thinking; problem-solving ability</td>
</tr>
<tr>
<td></td>
<td>• recognize and respond to current situations, opportunities, and challenges</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• act decisively in critical situations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• address potential problems before they worsen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Master Teachers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• think and act ahead of time to optimize opportunities (16)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• identify and prevent potential problems before they happen (16)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• anticipate situations in the long-term and create opportunities and avoid or address problems that are not evident, as to attain long-term benefits (16)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaching Creatively</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All Teachers</td>
<td>3 - Creativity, adaptability, innovation</td>
</tr>
<tr>
<td></td>
<td>• use routine methods to teach (20)</td>
<td>6 - Engaging; motivating students to learn</td>
</tr>
<tr>
<td></td>
<td>• provide worksheets and notes (20)</td>
<td>12 - Knowledge of how students learn &amp; develop; personalize learning</td>
</tr>
<tr>
<td></td>
<td>• appeal to students interests by using specific techniques and approaches to teach concepts while ascertaining learning through simple questioning (6, 12, 13, 20)</td>
<td>13 - Knowledge &amp; use of assessment</td>
</tr>
<tr>
<td></td>
<td>Master Teachers</td>
<td>20 - Pedagogical knowledge, skills &amp; methods</td>
</tr>
<tr>
<td></td>
<td>• use a variety of approaches (20)</td>
<td>31 - Teaching students skills necessary for college &amp; career success/21st century skills; focus on non-cognitive skills</td>
</tr>
<tr>
<td></td>
<td>• use reflective questioning to assist student comprehension (20)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• teach a range of concepts simultaneously (20)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• exploit learning opportunities inside and outside the classroom and integrate concepts in interesting and innovative ways (3, 6, 20)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• inspire learning beyond the curriculum by empowering and motivating students to be creative, independent, and passionate learners (6, 31)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Competencies within Singapore's Enhanced Performance Management System aligned with survey results (continued)
### Winning Hearts and Minds

#### Understanding Environment

**All Teachers**
- know school policies and procedures (17)
- recognize organizational capabilities (10)
- understand reasons for people's resistance (10)
- understand the rationale behind school policies (17)

**Master Teachers**
- apply understanding of school issues to their work (17)
- comprehend school climate and apply this knowledge to attain positive outcomes (17)
- develop activities that align with school's educational vision (17)
- apply knowledge of socio-economic forces which impact the school and its programs (24)
- address long-term issues influencing the school's relation to the external world (10, 17)

#### Developing Others

**All Teachers**
- give suggestions to address immediate developmental needs (10, 18)
- provide guidance to beginning teachers that draws on personal experience and knowledge (10, 18)

**Master Teachers**
- coach teachers for development (10, 18)
- stretch potential of self and colleagues through professional development (14, 18)

---

Table 2. Competencies within Singapore's *Enhanced Performance Management System* aligned with survey results (continued)
<table>
<thead>
<tr>
<th>Competency Cluster</th>
<th>Competencies</th>
<th>Our Survey Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with Others</td>
<td><strong>Partnering with Parents</strong></td>
<td></td>
</tr>
<tr>
<td>All Teachers</td>
<td>• keep parents informed about activities, student progress, and policies (25)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• treat parents as partners (25)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• encourage parent involvement (25)</td>
<td></td>
</tr>
<tr>
<td>Master Teachers</td>
<td>• work collaboratively with parents (25)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• build and nurture long-term relationships with parents (25)</td>
<td></td>
</tr>
<tr>
<td>Working in Teams</td>
<td><strong>All Teachers</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• willingly help others and share information (18)</td>
<td>5 - Patient, caring, kind, fair</td>
</tr>
<tr>
<td></td>
<td>• express positive attitudes and expectations of others (5, 18)</td>
<td>10 - Leadership</td>
</tr>
<tr>
<td></td>
<td>• show willingness and keenness to learn from colleagues to attain work targets and goals (14, 18)</td>
<td>14 - Mindset &amp; passion for continuous learning &amp; challenging oneself to improve</td>
</tr>
<tr>
<td>Master Teachers</td>
<td>• encourage and empower team teachers (18)</td>
<td>16 - Intelligence; critical thinking; problem-solving ability</td>
</tr>
<tr>
<td></td>
<td>• build team commitment (18)</td>
<td>18 - Collaborator; ability to work with colleagues</td>
</tr>
<tr>
<td></td>
<td>• highlight and resolve issues that affect teacher effectiveness (10, 16, 18)</td>
<td></td>
</tr>
</tbody>
</table>

Note: Numbers reflect the coding categories from Table A3 in the Appendix. The EPMS can be found at http://opportunityculture.org/images/stories/singapore_lessons_2010.pdf

Table 2. Competencies within Singapore’s Enhanced Performance Management System aligned with survey results (continued)
What We Learned

Overall, the survey results aligned well with the *Enhanced Performance Management System (EPMS)* and with research on the competencies and dispositions of effective teachers. Regarding the standards, there weren’t any in the EPMS that were not mentioned by stakeholders in our survey. However, there were several competencies mentioned in our survey responses and in research on effective teaching that were not mentioned in the EPMS. These include:

- The teacher’s ability to create a positive, productive learning environment in order to maximize learning opportunities—i.e. *Classroom Management*. This was the 6th most frequently reported set of teacher competencies, emphasized most by teachers and by education researchers and policymakers (about 7% of their responses). It is important to note that the EPMS deliberately does not include observable skills, including classroom management, but instead focuses on the “underlying competencies” that lead to high performance (Steiner, 2010).

- The teacher’s ability to *Challenge* ALL students with a rigorous curriculum (the 15th most frequently reported quality by the overall sample, or 0.8% of the total responses). Although this set of competencies is not included in the EPMS, it is included in the V3SK standards (for 21st Century teachers) also put forth by the MoE (addressed earlier in this report).

- The teacher as a *Moral*, ethical individual, serving as a model for others, including students. This was reported most frequently by education researchers and policymakers (0.8% of their responses). It may be that the dispositions associated with being a moral person are assumed in the EPMS domain of Nurturing the Whole Child.

- Competencies related to speaking, reading and/or writing in *English*, reported most frequently by education researchers and policymakers (0.8% of their responses).
The key research questions driving this study were

1. whether there were important differences in the qualities that different groups of education stakeholders value for a teacher to be regarded as effective;

2. whether context made a difference in the qualities most valued; and

3. the extent to which the qualities most valued aligned with the national teaching standards and with research on effective teachers and effective teaching.

Regarding research questions 1 and 2, we hypothesized that we would find important differences between what is valued by stakeholder groups (parents, students, etc.); for primary and secondary teachers; for public and private school teachers; and perhaps, by males and females. However, we were surprised by the general consistency in findings across the groups. All stakeholder groups endorsed the importance of teachers building trusting, compassionate Relationships with and relating well to students; their Knowledge of Learners, regarding who they are as individuals, their learning needs, and how they learn and develop; Dedication to the profession; ability to Engage and motivate students; the importance of a Patient, Caring and kind personality; Classroom Management; Professionalism; ability to Make Ideas, Content Clear; and the teacher’s Subject Matter Knowledge. When we compared contexts, public and private schools shared all of their Top 10 and valued the same top 3 in
the same order. Males and females also shared all of their Top 10 most valued qualities for an effective teacher and valued the same top 2 qualities in the same order. When we compared which qualities were valued most for primary and secondary teachers, both grade levels reported the same Top 10 categories, with the same top 2 in the same order. Across all these comparisons, building relationships with students was reported most frequently and emphasized the most by students, parents and teachers.

Regarding research question 3, we found that survey responses were generally well aligned to documented competencies of effective teachers and teaching practices supported by research, and with the EPMS developed for K-12 teachers for self evaluation and professional growth. Several categories, all of which were reported with low frequency by all stakeholders, were not found in the EPMS: the teacher’s classroom management, ability to challenge all students, moral character, and English language fluency.

Researchers note that in order to support student learning, teachers need a complex array of knowledge and skills, based on what we know about how humans learn. Moreover, these requirements are changing in light of the types of knowledge and skills that today’s students require to survive and succeed (Darling-Hammond, 2006; Greenhill, 2010; OECD, 2013). Bransford et al. (2007) broadly define the areas of knowledge and attending skills required for effective teachers as:

- Knowledge of learners and how they learn and develop within social contexts.
- Knowledge of subject matter and curriculum goals.
- Knowledge of teaching, including subject matter, diverse learners, use of assessment, and classroom management.

To that broad list, reports like 21st Century Knowledge and Skills in Educator Preparation and others have added knowledge and use of technology, as well as broader dispositions and professional skills including (but not limited to) general intelligence and analytical thinking; strong communication skills; leadership; collaborative learning; and continuous reflection on one’s own practice to learn and improve (Greenhill, 2010).

In our study in Singapore, we were surprised to find that a small percentage of responses from the education professionals—teachers, principals, education researchers and policymakers—including specific knowledge and skills that are well understood to enhance student learning, particularly the following:

“

It was surprising to find that a small percentage of responses from educators included certain knowledge and skills known to enhance student learning, such as assessment or challenging curriculum.

”
None (0%) of principal and 0.2% of teacher responses addressed the teacher’s critical knowledge and use of Assessment to monitor student progress. Wiliam (2007) and others suggest that the ability to consistently assess student learning progress and adjust instruction accordingly is the single most important aspect of teaching practice to enhance student learning. We therefore expected to see this competency mentioned far more frequently by principals and teachers.

About 1% of responses from principals and teachers, and 0% of those from education researchers and policymakers addressed making learning Challenging and rigorous for all students, in the belief that all can learn. Research indicates that a “watered-down” curriculum, in fact, has been shown to increase drop-out, repeating grades, and/or need for remediation (Stronge, 2007). It may be that a challenging curriculum is the norm in Singapore and therefore this set of competencies was not viewed as necessary to discuss.

None of the educators in this study mentioned the importance of focusing on the learning process itself and emphasizing Deeper Learning of content for students. Deeper learning includes the following three domains (Martinez, McGrath, & Foster, 2015):

- **Cognitive**: students understand content principles and concepts and develop a strong academic foundation
- **Interpersonal**: students learn to work collaboratively and to solve complex problems
- **Intrapersonal**: students learn how to monitor and direct their own learning

Globally, there has been a renewed focus among researchers and practitioners on the importance of teaching for deeper learning, which may be in response to the strong emphasis on testing and student achievement over the past decade. Recent research in the U.S. concluded that a deeper learning curriculum improved students’ content knowledge, problem solving skills, graduation rates, college enrollment to selective institutions, collaboration skills, academic engagement, and motivation (Zeiser et al., 2014).

Educators made little mention of important teacher behaviors within the school community, including taking on Leadership roles and contributing to the profession, working Collaboratively with colleagues, and working with Families to keep them informed and to support student learning. Darling-Hammond (2010) notes the importance of these competencies for effective teaching, and research on effective schools show these practices to be important as well (e.g., Fullan, 2003). They are also explicitly addressed and emphasized in the Enhanced Performance Management System.
What Surprised Us

• We thought we would see more mention of the importance of integrating Technology for learning, yet none of educators’ responses referred to this competency. In 21st Century schools, teaching and learning are both expected to be impacted, if not transformed, by technology (e.g., Greenhill, 2010). Use of technology for teaching and learning is explicitly addressed in Singapore’s PRIME initiative, mentioned earlier in this report.

Although it is understandable that not all important knowledge, skills and dispositions for effective teaching would be reported by each educator, we expected that these categories would appear more frequently. It is clear from research and education policy literature that these categories are associated with student learning, and in the case of the use of assessment and deeper learning, they are central to effective teaching.

Implications

Singapore is known globally as a model for a high quality education system. In the spirit of continuous improvement, the MoE continues to target new initiatives to meet the needs of the educators and students, building on research and expert knowledge in best practices, as exemplified by the PRIME initiative.

In light of Singapore’s exemplary status, it is notable that the surveyed education stakeholders strongly value teacher dispositions of care (Relationships; Patient, Caring personality) and character (Professionalism; Dedication), and focus foremost on the needs of the learner (Knowledge of Learners). The importance of dispositions may reflect an underlying belief that without them, a teacher’s subject matter knowledge and pedagogical skills will do little to help students learn and succeed. In fact, Ritchart (2002) views dispositions as the gap between abilities and actions: having these professional dispositions of care and character, for example, enables teachers to use effective professional judgment and do the right thing for students. Research tells us that when teachers create a safe and supportive learning environment, students are more motivated and consistently engaged. Cognitive scientists tell us that these conditions reduce the cognitive load of learning by allowing individuals to shift their focus from worry and potential risk to the learning task at hand. Creating a climate where students feel cared for, that they belong, and where they are free to take risks and make mistakes as they learn new material, is critical for productive learning to occur. As Figure 14 illustrates, it may be that these dispositions serve as a foundation for effective teaching, i.e. the base of the pyramid, supporting the requisite professionalism and teaching-specific knowledge and skills. In combination, these three domains of teacher qualities or competencies cultivate productive student learning.

“Singapore continuously improves its education system by targeting new initiatives to meet the needs of educators and students.”
In a study in India, Singh and Sarkar (2012) conclude that “what the teacher does and believes, rather than what the teacher knows, is what ultimately counts for their students.”

Given the emphasis among all stakeholder groups, it may be that teacher preparation and training initiatives should emphasize the development and foster these critical dispositions of care and character. Research demonstrates that teachers can improve in these areas through careful and purposeful training programs (Taylor & Wasicakso, 2000; Schulte et al., n.d.). As popular U.S. author and educator Jessica Lahey (2014) reports, “if we can figure out how to improve the social relationship that is at the heart of much of students’ learning, we should be able to improve a vast constellation of student outcomes in schools.”
Bourgonje and Tromp (2011) argue that it is critical to formulate a clear definition of teacher effectiveness to meet the goal of placing an effective teacher in every classroom. “Effectiveness” in any field is defined as the ability to produce expected outcomes. The results from this survey can serve as a starting point for developing a shared definition of valued outcomes and therefore, effectiveness as it relates to teaching. The data reflect what stakeholders value most regarding the qualities of an effective teacher. Research on effective teaching supports these values, and they are well-aligned with the teaching standards specified in the Standards of Training for K-12 teachers.

Data are only as powerful as the questions they inspire, the policies they inform, and the practices we are spurred to examine (McComb, 2016). The value of our study is in the use of these results to shape critical discussions for reviewing current pre-service and in-service teacher training, as well as hiring and teacher evaluation policies. Findings from this survey in Singapore reflect a student-centered view of teaching and learning, which is consistent with the MoE’s focus on building student-centered teachers (as described in the V3SK document). The emphasis on the ability of teachers to build productive, trusting relationships and serve as a mentor with students as well as the teacher’s knowledge and understanding of students suggests important areas for teacher preparation, professional growth, and evaluation. Similar statements can be made for other sets of knowledge and skills valued by the survey respondents and supported by research for improving student learning. Low endorsement rates by education professionals (teachers, principals, education researchers, and policymakers) regarding critical knowledge and skills for teachers, also suggests potential areas in need of emphasis for training and development. Some potential areas for teacher training, development and evaluation in Singapore include:

- **Dispositions:** Focus on what are often referred to as “non-cognitive” or psychosocial factors, including social-emotional intelligence, to support teachers in building trusting relationships and a safe, productive learning environment to enhance student learning. These skills have been linked to academic achievement and career success, and globally, business leadership training is now incorporating a focus on these kinds of skills to build successful leaders. Neurocognitive scientists emphasize the importance of trusting relationships for human learning (e.g., Coan
& Sbarra, 2015), and mastering the dispositions, knowledge and skills required to do this well should have a positive impact on a wide array of student outcomes (Lahey, 2014). Dottin (2009) provides examples of how teacher preparation programs and ongoing professional development can incorporate training and support of critical dispositions needed for professional judgment and intelligent teaching practice.

- **Assessment**: Training in the use of assessment for monitoring student progress and facilitating student control of their learning. Assessments aligned with learning standards or progressions can help to integrate lesson planning and instructional practices. A surprisingly low number of responses by principals and teachers in this study addressed use of assessment, yet the ability to regularly monitor student progress and adjust instruction accordingly is central to effective teaching.

- **Engaging families**: Research in school improvement indicates that engaging families in their child’s learning helps to motivate and support students and connect families with schools. Few responses on the part of principals, teachers and education researchers and policymakers addressed the teacher’s ability to connect with families; yet this is a critical set of competencies as indicated in the *Evaluation Performance Management System* as part of Singapore’s education policies.

**Important Considerations**

It is important to note that like all research studies, this one has limitations in what we can interpret and conclude from the data we collected. We gathered data across Singapore, from stakeholder groups representing public and private schools, using computer assisted telephone interviews. However, we cannot claim that this sample accurately represents the views of all members of each stakeholder group across Singapore. Moreover, because we asked respondents to generate their own lists of qualities or competencies they value most, their responses reflect what came to mind at the time of the survey. If given a list of qualities of effective teachers to prioritize, results might be different.

We caution against using these survey results to inform a checklist approach to defining effective teaching. Rodgers and Raider-Roth (2006) argue that teaching should not be reduced to a list of behaviors and skills that takes us further away from a clear understanding of what it means to teach. Teaching involves a multitude of factors that occur in a variety of ways, with many moving parts, and there is no single winning pattern of knowledge, skills, dispositions, and so on. Yet, as noted throughout this report, research indicates some common practices and shared understandings of what it means to be effective as a teacher. Results from our survey in Singapore reaffirm the notion that at its foundation, teaching is about relationships between teachers and students that ultimately foster student success, as these communities define it.
Finally, in light of our survey results and their potential use for driving teacher preparation, hiring, training, and/or evaluation, it cannot be overstated that for teachers to be effective, the work conditions and environment, first and foremost, must be well managed. As others have noted, school context and community culture have a profound influence on the way different teacher roles and competencies are understood, prioritized, and practiced (e.g., Harley et al., 2000; Darling-Hammond, 2010; Bourgonje & Tromp, 2011; Taylor et al., 2012).

In light of these concerns, we hope that the results of this study—reflecting the opinions of a wide array of education stakeholders across Singapore, representing public and private schools—will be used to inform and guide the definition of what it means to be an effective teacher in the context of the culture in which teaching and learning occur.

“Creating a climate where students feel cared for, that they belong, and where they are free to take risks and make mistakes as they learn new material, is critical for productive learning to occur.”


## Appendix

### Table A1. Participating countries

<table>
<thead>
<tr>
<th>Participating Countries</th>
<th>Data Collection Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>Cimigo</td>
</tr>
<tr>
<td>Hong Kong</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>Helme Consulting</td>
</tr>
<tr>
<td>Japan</td>
<td></td>
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<tr>
<td>Australia</td>
<td>Nielsen India</td>
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<td>India</td>
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<td>South Africa</td>
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<td>USA</td>
<td>Dashboard Marketing Intelligence</td>
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<td>Canada</td>
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<td>Singapore</td>
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<td>Saudi Arabia</td>
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<tr>
<td>Turkey</td>
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<tr>
<td>Morocco</td>
<td></td>
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<tr>
<td>Egypt</td>
<td></td>
</tr>
</tbody>
</table>
**Descriptions of Study Methods**

Dashboard collected data from multiple states in Singapore. Table A2 shows the proportion of responses from each region.

<table>
<thead>
<tr>
<th>Region</th>
<th>% of sample*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central</td>
<td>25.8%</td>
</tr>
<tr>
<td>East</td>
<td>19.3%</td>
</tr>
<tr>
<td>West</td>
<td>20.9%</td>
</tr>
<tr>
<td>North</td>
<td>15.6%</td>
</tr>
<tr>
<td>North-East</td>
<td>18.4%</td>
</tr>
</tbody>
</table>

*Researchers and policymakers are not included—they were not asked this question in their surveys. For students, parents, teachers and principals, these regions are where they lived.

**Table A2. Targeted sampling areas in Singapore**

**How We Surveyed**

Cimigo used two methods for data collection with the different stakeholder groups in Singapore:

<table>
<thead>
<tr>
<th>Target Group</th>
<th>Data Collection Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Students</td>
<td>Online interviews</td>
</tr>
<tr>
<td>Parents of Children</td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>CATI (Computer-Assisted Telephone Interviewing)</td>
</tr>
<tr>
<td>School Leaders</td>
<td></td>
</tr>
<tr>
<td>Researchers &amp; Policymakers</td>
<td></td>
</tr>
</tbody>
</table>

We specified quotas for public and private school responses. Data quality was monitored by random quality checks and voice recordings for a sub-sample (5-15%) of the interviews.
Who We Surveyed

In total, we surveyed 352 respondents.

Figure A1 shows the grade levels represented by the respondents in the survey. Note that all of the students who participated were in high school (Years 9-12). Post-secondary generally refers to school levels reported by researchers and policymakers.

![Figure A1. School types represented by survey respondents]

Figures A2–A6 summarize key characteristics of each of the surveyed groups. For the students, more males participated and most attended public schools. All were in secondary school, and ages ranged from 15-18, with a median of 16.

![Figure A2. Surveyed student characteristics]
For **parents**, more females responded, and most (93%) attended public schools as children. Around one-third (37%) send their children to private schools.

**Figure A3. Surveyed parent characteristics**

The **teacher** respondents represented a wide range of experience, from 1 to 27 years on the job, and the median of 6 years suggests that on average, these were somewhat experienced teachers. Most taught in public schools (62%), and were female (85%).

**Figure A4. Surveyed teacher characteristics**
The surveyed principals also represented a range of experience, from 1 to 23 years of experience as principals, with a median of 5.5 years. This suggests that overall, this is a somewhat experienced group of principals. Most taught in private schools (83%), many of which were pre-schools, which are all privately run in Singapore. Most principals were female (94%).

The education researchers and policymakers we surveyed had 1 to 15 years of experience, with a median of 6 years at their current job, suggesting that on average, this group was fairly experienced. More females participated (64%) and most focused their work on primary school education.
Coding Survey Responses

We created a coding scheme for all responses. As a starting place, we used research about the competencies of effective teachers as a guide. Teachers, principals, education policymakers and researchers with expertise in teacher effectiveness then reviewed the list and provided feedback. As our research team coded more responses, we updated and revised the list, aiming for categories that were not so broad as to be unhelpful, and not so specific as to be too complex for comparisons across stakeholder groups and countries. Our final list and a description of each category is below in Table A3.

We measured interrater agreement using Fleiss’s Kappa statistic, specifying 0.75 or higher as the goal. We trained raters until they could meet this requirement.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Subject Knowledge</td>
<td>Mastery or expertise in one's content or subject area. Includes knowledge of the curriculum, learning objectives and/or standards in the given subject area</td>
</tr>
<tr>
<td>(2) Dedication</td>
<td>Dedication, passion, or commitment to one's work as a teacher; commitment to help all learners succeed</td>
</tr>
<tr>
<td>(3) Creativity</td>
<td>Qualities indicating the ability to think creatively, adapt, or embrace new ideas or teaching styles; includes being innovative</td>
</tr>
<tr>
<td>(4) Technology</td>
<td>Familiarity and/or fluency with and ability to use technology for teaching &amp; learning; keeping current or up-to-date with technology</td>
</tr>
<tr>
<td>(5) Patient, Caring Personality</td>
<td>Positive personality characteristics, e.g., patient, caring, kind, fair, humorous, friendly</td>
</tr>
<tr>
<td>(6) Engaging</td>
<td>Ability to make class fun and/or engaging and motivates learners to learn</td>
</tr>
<tr>
<td>(7) Planning</td>
<td>Ability to effectively plan lessons as well as being organized more generally; ability to organize the learning for the learner</td>
</tr>
<tr>
<td>(8) Class Management</td>
<td>Ability to effectively manage classrooms, learner behavior, and time for learning; develop classroom routines to maximize learning time; create a productive learning environment</td>
</tr>
<tr>
<td>(9) Make Ideas, Content Clear</td>
<td>Ability to present information in a clear, accessible manner</td>
</tr>
<tr>
<td>(10) Leadership</td>
<td>Qualities related to being a leader, e.g., decision-making skills, visionary, influential etc.</td>
</tr>
<tr>
<td>(11) Relationships</td>
<td>Ability to understand and establish trusting, productive relationships with learners; includes a mentoring role</td>
</tr>
<tr>
<td>(12) Know Learners</td>
<td>Understand how learners learn and develop, cognitively, socially, and emotionally, and adapt content to meet the needs of a range of learners/diverse learner populations, including those with special needs; attend to the individual needs of learners</td>
</tr>
<tr>
<td>(13) Use of Assessment</td>
<td>Assessment literacy, including the ability to develop and/or use assessments (both formal and informal) to evaluate learning, provide feedback to learners from the assessments, and/or monitor or track learning progress</td>
</tr>
<tr>
<td>(14) Always Learning</td>
<td>Willingness/passion/desire to learn and develop, to challenge oneself to improve, reflect on own practice, &amp; accept constructive criticism. Includes desire to stay updated on relevant knowledge and skills in their field; engaging in ongoing professional development</td>
</tr>
<tr>
<td>(15) Belief in Self</td>
<td>Confidence in oneself</td>
</tr>
</tbody>
</table>

Table A3. Coding categories of characteristics/competencies of effective teachers
Table A3. Coding categories of characteristics/competencies of effective teachers (continued)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(16) <strong>Intelligence</strong></td>
<td>General intelligence and/or being well-informed; a strong general fund of knowledge (not specific to the content being taught); critical thinking, analytical and problem-solving abilities</td>
</tr>
<tr>
<td>(17) <strong>Professionalism</strong></td>
<td>Workplace professionalism and responsibility (e.g., honesty, loyalty, punctuality); awareness of and compliance with rules and policies of the education system</td>
</tr>
<tr>
<td>(18) <strong>Collaborative</strong></td>
<td>Ability to work well with colleagues; shares knowledge and skills with colleagues; cooperative and works with others to improve as a team</td>
</tr>
<tr>
<td>(19) <strong>Moral</strong></td>
<td>Good moral character or general ethics; principled; can include religiosity and spirituality</td>
</tr>
<tr>
<td>(20) <strong>Teaching Skills</strong></td>
<td>Knowledge and use of various pedagogical/teaching techniques, general as well as specific to a given content area; pedagogical content knowledge</td>
</tr>
<tr>
<td>(22) <strong>Qualifications</strong></td>
<td>Possessing necessary preparation and credentials for teaching the grade levels and subject matter</td>
</tr>
<tr>
<td>(23) <strong>English Fluency</strong></td>
<td>Having the knowledge and skills to teach English to non-native speakers</td>
</tr>
<tr>
<td>(24) <strong>Cultural Competence</strong></td>
<td>Knowledge, appreciation and respect for different cultures and backgrounds; tolerant, unbiased regarding different learner backgrounds</td>
</tr>
<tr>
<td>(25) <strong>Families</strong></td>
<td>Ability to communicate and build relationships with learners’ parents and families; includes families in learner’s education</td>
</tr>
<tr>
<td>(26) <strong>Research</strong></td>
<td>Ability to conduct and understand research; studying one’s own practice and the impact on learners (e.g., action research, lesson study)</td>
</tr>
<tr>
<td>(27) <strong>Challenging</strong></td>
<td>Belief that all learners can learn; maintaining a challenging, rigorous curriculum for all learners</td>
</tr>
<tr>
<td>(28) <strong>Political context and/or beliefs</strong></td>
<td>The teacher as part of a political system in which education serves a specific role or purpose; reinforces political beliefs (especially in closed societies); or holds specific political beliefs (e.g., democratic, communist)</td>
</tr>
<tr>
<td>(31) <strong>Non-cognitive skills</strong></td>
<td>Focus on teaching learners the skills required to be successful in college and/or a career, e.g., learning how to be an independent learner, how to work collaboratively with others; also known as 21st Century and/or “non-cognitive” skills. Includes career guidance for learners</td>
</tr>
<tr>
<td>(32) <strong>Deep Learning</strong></td>
<td>Values the learning process and focuses on “deeper” learning and knowledge transfer vs. rote learning (memorization of and ability to recall facts) and exam scores</td>
</tr>
<tr>
<td>(21, 29, 30) <strong>“Other”</strong></td>
<td>Either odd responses (e.g., “eccentric,” “well-traveled”) or responses too general to code, e.g., “experienced” or “effective” (essentially repeating the question).</td>
</tr>
</tbody>
</table>

Note: Numbers reflecting coding system the research team used for survey responses, and checking alignment with teaching standards and research.