Jostens RENAISSANCE EDUCATION

TECHNICAL OVERVIEW

The Pulse Survey

An Assessment of the Student Recognition Culture in Schools

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Students need to be recognized in their schools. This seems to be a self-evident assertion. Yet, what "recognition" is, how students experience it, and what the effects of different kinds of recognition are on student motivation and school success are questions with surprisingly complex answers. And although there are warehouses full of research studies on "school climate," surprisingly little of that research deals specifically with recognition.

Search Institute developed *The Pulse Survey* for Jostens Renaissance Education to provide a 360-degree view of student recognition in middle schools and high schools. The survey examines five keys to a strong recognition culture in schools (see box), highlighting the experiences and perspectives of students, parents, and teachers about each area.

This technical summary reviews the research behind the survey, how the survey was developed and tested, and the psychometric properties of the survey based on pilot tests.

Recognition: Theory and Research

Recognition seems to be a simple idea. But even a quick look at common synonyms for "recognition" hints at the wide scope of ways "recognize" can be defined: appreciate, be aware of, respect, notice, discover, salute, acknowledge, honor, celebrate, applaud, cheer, commend, praise, prize, favor, certify, esteem, value, regard, or reward.

This listing mixes in formal, "tangible" recognitions (e.g., prizes, rewards, certificates, honors, etc.) with those that are informal and "intangible" (e.g., praise, notice, respect, etc.). It blends together types of recognition that ought to be available to every student (e.g., respect, notice, value, esteem) and types of recognition that typically are acknowledgements of high achievement that, by definition, not all students can attain (e.g., honors, prizes, and rewards). Some forms of recognition are about who a young person is—her or his values,

Five Keys to a Strong Recognition Culture in Schools

The Pulse Survey focuses on five elements of student recognition that contribute to a school culture that enhances student motivation:

1. INFORMAL RECOGNITION: Students are known and valued through positive relationships.

2. FORMAL RECOGNITION: Tangible rewards reinforce a positive recognition culture.

3. FAIRNESS IN RECOGNITION: Recognition opportunities are meaningful and unbiased.

4. FOCUS ON EFFORT: Students are recognized for working hard, not just doing well.

5. HAVING A VOICE: Students have a voice in school life and in how students are honored.

character, and inherent worth. Some are about what a young person accomplishes, usually in the form of excelling in competition with others in the school or as a representative of the school in competition against other schools (e.g., honor roll, student government leader, mathlete, or varsity sports).

At the core, all people—including students—need to know that they matter. Thus, recognition in all its forms can contribute to students believing that they matter—that they are important to others.

At least 1,000 school climate measures have been developed that include at least a minimal assessment of the degree to which supportive or positive relationships exist within a school, as perceived by either students, teachers/staff, or parents, or a combination of those (Clifford et al., 2012). Yet only a few are psychometrically reliable and valid, and even fewer obtain the perspectives of multiple stakeholders (students, teachers, and parents). Finally, none examine in significant depth with the specific ways in which students are recognized, appreciated, honored, and rewarded.

Although the idea of "recognition" per se has not been extensively studied, several aspects of recognition have generated extensive research. We know quite a bit about school climate generally, and there are numerous studies about the practice of praising students and how that may affect academic motivation and performance. And a considerable body of work—often with conflicting results or contradictory interpretations—about the effects of using extrinsic rewards to motivate students. We scan this research here, organized to reflect the key features of a recognition culture in *The Pulse Survey*.

Informal recognition

School climate—Extensive research shows the numerous positive effects when schools have a positive climate. As the National School Climate Center put it, "Safe, caring, participatory and responsive school climates tend to foster a greater attachment to school and provide the optimal foundation for social, emotional and academic learning for middle school and high school students" (Thapa et al., 2012, p. 7). In schools with positive school climate, students feel safe, known, and included, and have relationships with teachers, other adults, and peers that are supportive, encouraging, fair, and respectful. Bullying and discrimination are not tolerated.

Bryk and colleagues (2010) have also shown that high levels of relational trust (i.e., strong, positive relationships, across the various members in the school community) are associated with schools being able to make building-wide improvements that promote student achievement.

All of these elements of positive school climate are about the most basic levels of "recognition." They are rooted in the day-to-day relationship quality of students with teachers and other school adults, and students with each other.

Teacher-student relationships—The concept of informal recognition goes beyond a typical understanding of a positive school climate. It particularly emphasizes the power of strong relationships between students and teachers, including the ways teachers notice and value students' strengths and accomplishments and how they provide praise and feedback to students. The importance of strong "developmental relationships" with teachers and others in schools is the foundation of Search Institute's applied research and school supports on student motivation (Pekel, 2016).

Wentzel's (2012) extensive research review of teacher-student relationships found that teacher communications and expectations; willingness to provide help, advice, and instruction; and emotional support and safety are related to students' motivation, engagement, and achievement. These effects were greater for low-income students, students of color, and underachieving students. Furthermore, stronger teacher-student relationships

predict higher levels of student motivation, self-regulation, and other dimensions of tenacity in learning (Lee, 2012).

Praise and feedback—Similarly, quality praise and positive feedback from teachers appears to enhance individuals' sense of having free choice and their interest in a task (Hidi, 2016). This verbal reward also seems to increase individuals' time on the task after the praise is given (Eisenberger & Cameron, 1996), so long as the praise is informational ("you did really well") as contrasted with being controlling (such as, "We need you to do well because the class will get a prize if you do; or, you did well, as you 'should' have") (Deci et al., 1999).

Verbal reward or praise works best when it is sincere, honest, and specific about the process a student is engaged in, or about the behavior they can manage and control. (For example, "I like the way you used examples in every paragraph to reinforce your essay theme," is better than "great job on the essay," or worse, "You're such a good writer!") General praise, or praise about things students might not think they can change, such as their intelligence, can be counter-productive (Dwyer & Dweck, 2015).

Similarly, a meta-analysis of more than 500 studies on teacher feedback, involving 20 to 30 million students concluded that the effects of positive task informational feedback on learning were, on average, five to six times greater than the effects of non-specific praise. The effects were also twice as strong when providing feedback that a student was doing something correctly than feedback pointing out mistakes (Hattie & Timperley, 2007).

Formal recognition

Formal recognition focuses on the tangible rewards and awards students receive in school. These rewards are controversial within educational research, particularly in their role in emphasizing extrinsic rather than intrinsic motivation. For example, in their meta-analysis of research on teacher feedback, Hattie and Timperley (2007) concluded that non-specific praise, punishment, and extrinsic rewards (e.g., stickers, awards) were the least effective in advancing achievement, because they contain so little learning-relevant information that helps students know how to perform better.

A considerable body of research over the past 40 years has shown that extrinsic rewards are not inherently a detriment to students' intrinsic motivation (Cerasoli et al., 2014). A major criticism of the research showing that extrinsic rewards can dampen intrinsic motivation is that most of it has been done in laboratory experiments (students solving puzzles for a one-time small financial award, for example) that do not fairly mimic the real-life settings of schools, in which extrinsic rewards from praise to grades to intentional tangible reward programs, are a pervasive feature of the landscape.

Taken together, the research suggests that both intrinsic and extrinsic motivation can affect performance. For example, meta-analyses suggest that intrinsic motivation may be more important for the *quality* of performance, and extrinsic a strong motivator for the *quantity* of performance (Cerasoli et al., 2014). Further, rewards do not seem to undermine intrinsic motivation if the rewards are unexpected or when the task being rewarded is not very interesting to start with (Hidi, 2016).

Intrinsic motivation also might not be negatively affected, or not negatively affected as much (Deci et al., 1999) if the individuals are rewarded for achieving a certain standard of quality in performance, as contrasted with simply participating or completing a task without regard to how well the task has been done (Hidi, 2016).

Finally, rewards cannot be very large, nor can they be given for exerting low levels of effort or originality. In both cases, such extrinsic rewards can dampen intrinsic motivation (Eisenberger & Cameron, 1996).

The most-researched type of extrinsic reward has been providing students with financial incentives to get good grades, or for doing the academic behaviors (e.g., asking questions, taking notes, re-reading difficult passages) that help lead to better academic performance. Fryer (2010) described a set of such experimental incentive experiments in Chicago, Dallas, New York City, and Washington, DC, involving the distribution of more than $6 million to more than 38,000 students in more than 260 elementary, middle, and high schools.

The findings were quite mixed. Incentives seemed to have a stronger effect when given for academic inputs such as school attendance or reading books, rather than for outputs such as getting good grades or high test scores. Paying students to read books yielded a large increase in reading comprehension, with positive spillovers to their course grades. Incentives for grades in core courses did seem to increase attendance, and a slight increase in the number of courses passed in students' freshmen year. There was "scant evidence" that student effort increased as a result of the incentives. On the other hand, there also was "no evidence" that the incentives decreased students' intrinsic motivation (Fryer, 2010).

Gneezy and colleagues (2010) reviewed the financial incentives literature and concluded, too, that financial incentives are most effective for achieving outcomes such as school attendance and enrollment, and less effective for increasing students' effort and motivation. Like Fryer (2010), Gneezy and colleagues (2010) found some positive effects of incentives on achievement (grades and test scores), but at relatively small effect sizes[1], raising the question of whether the investment was cost-effective. The effects also seem stronger for concrete subjects such as math, as contrasted with more conceptually abstract subjects like English and social studies.

Unfortunately, Gneezy and colleagues (2010) also found some evidence that incentives work best among students already achieving at high levels, more so than among the under-achieving students who presumably are the priority targets of such policies in the first place.

The field of neuropsychology is also adding insights to our understanding of formal recognition. Recent functional magnetic resonance imaging (fMRI) studies have shown that the same neural circuits that process rewards also handle goal-directed behavior, suggesting that rewards impact such behavior, for good or ill (Hidi, 2016). Hidi's review concluded that "rewards and their expectations were found to influence behavior, enhance attention, reduce reaction times, and increase memory as well as performance" (p 19).

Further, the great majority of fMRI studies find no difference in which areas of the brain are activated by intrinsic versus extrinsic motivation. Food, money, and praise all seem to activate similar neural pathways. Moreover, rewards given intermittently over time, and rewards that are actively earned seem to have the strongest effect on maintaining motivation. Finally, there is evidence that being given choices (between a small number of alternatives, and on tasks that the individual already finds relatively interesting) activates these same neural reward structures; that is, the brain may react to choice itself as a reward.

Fairness in recognition

This dimension of a recognition culture focuses on recognition opportunities being meaningful and unbiased. Very little school climate research literature addresses fairness of *recognition*. More commonly, what is measured is how fairly students feel rules are enforced and how equitably they feel student behavior is dealt with. Research has found

[1] Calculating effect size is a statistical method for quantifying the difference between two groups.

that there is less bullying and victimization, and less student delinquency, in schools where discipline is perceived as fair (Gottfredson et al., 2005; Thapa et al., 2012).

Not surprisingly, perceptions of fairness are also correlated with the level of perceived safety (emotional and physical) and positive relationships and trust in a school. It is through the complex interdependence of safety, fairness, and belongingness or connectedness students feel that their academic motivation, effort, and ultimately, their achievement are affected (Crosnoe & Benner, 2015). For example, in a study of nine middle and high schools, 73% of students who said school staff were caring and fair had high levels of academic confidence, but less than 50% did if they thought school staff were not caring and fair (Scales & Benson, 2007).

Focus on effort

Student recognition is most effective when it reinforces growth mindsets rather than fixed mindsets. Specifically, student recognition needs to honor students for working hard, not just doing well.

An extensive body of research shows that the ways that students think about their own intelligence affects the amount of effort they exert in school and in life, according to groundbreaking research by Carol Dweck. She contrasts "growth mindsets" with "fixed mindsets." With fixed mindsets, students, teachers, and parents believe there isn't much a person can do to increase her or his level of intelligence. With growth mindsets, they believe that it is always possible to increase intelligence with effort (Dweck, 2007, 2015; Dweck, Walton, & Cohen, 2011; also see Pekel, 2016). Thus, the ways that students are praised and criticized play a significant role in how mindsets develop. If young people are criticized and praised many times for the same reason, it amplifies or reinforces the message even more.

To understand the effect of praise, researchers (Dweck & Master, 2009; Dweck, Walton, & Cohen, 2011) assigned some moderately difficult logic problems to groups of fifth-grade students. After working through the problems, children were randomly assigned to receive different types of praise for their efforts. After that, they were given a different set of problems to solve. Those students who were praised with messages reinforcing fixed mindsets ("You must be very smart at these problems") solved 30 percent fewer problems in the second round of testing.

Those who received praise reinforcing growth mindsets ("That's a really high score. You must have worked hard at these problems") did better on the follow-up tests, and they asked to do more challenging problems in the future. Finally, a third group received praise that acknowledged a good outcome but did not suggest what had caused that good outcome ("That's a really high score.") These students did no better or worse than on the first test.

These same principles apply to the broader recognition culture in the school. When praise is specific and focuses on effort, it is most likely to be motivating for students.

Having a voice

Students and parents have a voice in school life and in how students are honored. Student "voice" can include aspects as simple and obvious as students having a choice of homework assignments (Patall, Cooper, & Wynn, 2010) or as complex and subtle as how much they feel they belong and are cared for, which is affected by how much they feel listened to and respected. Even more centrally, it is about how much students feel they have some influence, some efficacy, over what they are learning and how they learn it. As Toshalis and Nakkula (2012) concluded in a wide-ranging review, "Time and again, research has shown that the more educators give their students choice, control, challenge, and opportunities for collaboration, the more [students'] motivation

and engagement are likely to rise" (p. 2). Those researchers found that student voice was linked with achievement among disadvantaged student groups, as well as greater class participation and fewer behavior issues.

Whether students feel they have a voice in school is inextricably linked to the quality of their relationships with teachers, staff, and peers. Students who emotionally feel they belong and are positively connected to others at school are more likely to feel confident, listened to, and motivated (Headden & McKay, 2015), and as a result, more likely to feel they have a "stake in their learning" (Toshalis & Nakkula, 2012, 2). For example, in a study of nine middle and high schools, 75% of students who perceived opportunities for "voice" in their schools had high levels of academic confidence, versus less than 50% of those who had low levels of "voice" (Scales & Benson, 2007).

Development of *The Pulse Survey*

This scan of the literature suggests that a lot is known about factors in a school's recognition culture that motivate engagement and learning. However, it drew from disparate sources that are typically not integrated into a cohesive approach to student recognition. Furthermore, no practical measures are available that help schools assess their positive recognition culture from multiple perspectives.

The Pulse Survey seeks to fill this gap with a brief survey aimed at giving middle schools and high schools a brief check of their recognition culture from multiple perspectives (students, teachers, and parents). It builds on Search Institute's extensive experience in developing student surveys that focus on different dimensions of subjective well-being, including social-emotional skills, developmental assets, and developmental relationships.

In addition to drawing on existing Search Institute measures, we undertook the following steps to develop and test *The Pulse Survey:*

Focus groups with students

Two focus groups were conducted with middle school (n = 6) and high school (n = 6) students in Minnesota. Each focus group took 60 to 90 minutes. They were recorded, transcribed, and analyzed to identify key themes from students' perspectives on formal and informal recognition opportunities. Their verbatim responses were used to write survey questions. A parent (n=7 parents) and teacher (n=4 teachers) focus group also were conducted, and helped to inform item development.

Survey feedback from educators

Building on student focus group responses, an online survey was distributed to educators who participated in the Jostens Renaissance Education National Conference in 2015. A total of 114 educators (51% teachers, with others including principals, coaches, and counselors) responded to the survey.

The online educator feedback survey described the idea of *The Pulse Survey,* asking whether it would be valuable to educators and the scope that would be feasible. In addition, they were asked to identify priority topics to include in the survey.

The responses from educators were factored in with the literature review and student focus groups to create a draft survey that reflected the constraints needed for the survey to be feasible in schools.

Student feedback interviews

Once the survey was drafted, eight students in middle and high school were asked to review the survey and give extensive feedback on the clarity of item wording and concepts. Particularly key was to determine if the intended meaning of the items were

understood by the students. Items were revised and finalized based on their feedback.

Pilot testing

A total of eight middle and high schools in Minnesota and Virginia agreed to administer the pilot survey with their students, teachers, and parents. Search Institute provided an administration guide. Surveys were conducted through an online survey platform, with respondents completing the survey online.

A total of 2,448 students, 118 teachers, and 349 parents completed the surveys in May 2016. Of the total sample of youth, 59 percent of students were White; 12 percent were Hispanic; 8 percent were African American; African, or Black; 6 percent Asian/Pacific Islanders; and 13 percent mixed race or other.

Survey participants were notified that the survey was voluntary and anonymous, and they assented to participate. The average time needed to complete the pilot survey was 7-8 minutes for students, 6-9 minutes for teachers, and 6-7 minutes for parents.

Data analyses

Standard procedures were used to clean the resulting data, which included eliminating surveys in which too few items were completed. The number of items in the survey also was reduced to make a more efficient survey. Three factors were considered in item reduction decisions.

First, the coefficient alpha reliability of each scale was examined. Alpha shows how well items correlate with each other. When individual items are dropped from a scale, and the alpha coefficient increases, those items are detrimental to the scale and might be dropped. On the other hand, if items are dropped and the alpha goes down, this suggests they are key items and should not be dropped.

Second, Confirmatory Factor Analysis (CFA) models helped to identify which scales worked well, and which ones did not. CFAs also were used to determine whether to combine different constructs, or to split individual constructs.

Third, the theoretical importance/relevance of individual items to student recognition was considered. Although nearly all item reduction decisions are made on the basis of alpha and CFA results, occasionally an item does not perform as well as desired and yet is a conceptually important aspect of the variable being studied, in this case, student recognition. A handful of items were retained for this reason, despite less than stellar psychometrics.

Pulse Survey Psychometrics

Aggregate data from administration of the pilot *Pulse Survey* in eight schools were used to refine the survey measures and to test their internal consistency and content validity. Because a priority was on aligning and comparing responses from students, teachers, and parents, psychometric tests prioritized maintaining consistent items for each group. In cases where scales were adequate or strong for students but not for teachers and/or parents, we sought to maintain the strongest scales for students, recognizing the central value of emphasizing their voice in understanding student recognition.

Internal consistency

Table 1 shows that the student recognition scales have acceptable (alpha=.70-.79) or good (alpha= .80 or above) internal consistency reliabilities, suggesting that the items are well correlated with each other, and work adequately together as a scale. The sixth measure, Student Voice, is just two items, but those items also are significantly correlated with each other. The same is true for the parent measures. Two of the teacher measures—Fairness in Recognition, and Focus on Effort—have less than

acceptable internal consistency reliabilities (alpha= less than .70) and so the four items in each scale may better be used as single items.

Variability

Measures are stronger when the responses vary throughout the possible continuum of response choices, instead of piling up in either the low or high end of the scale. From this perspective, both the student and parent measures have acceptable variability. The teacher measures, however, are skewed to the positive end: In the pilot survey test, teachers tended to rate themselves and their schools very positively on these aspects of recognition culture.

Two factors may affect these responses. First, teachers may have been reluctant to criticize their schools, and might also have had an unrealistically favorable view of their own behavior, giving socially desirable responses. Second, the number of teachers responding to the survey was barely more than 100, 20 times smaller than the number of students and 3 times smaller than the number of parents. A larger number of teachers participating may have resulted in better variability.

Construct validity

The recognition culture constructs in the *Pulse* survey were developed on the basis of their theoretical importance. The Confirmatory Factor Analysis results suggest that these conceptual constructs are well reflected in the empirical data, providing evidence of the construct validity of the *Pulse Survey* measures. This conclusion is reached on the basis of the factor loadings of items making up each scale being strong (above .40, with most above .60), and because several customary model fit indexes (CFI, TLI, RMSEA, and SRMR) suggested adequate to good fit of the observed data to the theoretical models.

Predictive validity

To have predictive or concurrent validity, a variable should be significantly associated with other variables with which it has theoretical and conceptual linkages. The *Pulse* measures of the five elements of a recognition culture consistently show such correlations with theoretically meaningful outcomes.

For students, each of the *Pulse* measures of elements of a recognition culture is significantly correlated with students' sense of belonging or connectedness to school, mastery orientation, and perseverance. In addition, three of the five are significantly correlated with self-reported grades. Previous studies have documented "very strong relationship" between self-reported and actual grades in high school (Shaw & Mattern, 2009, p. 1).

In the parent survey, each of the measures of a recognition culture is significantly correlated with their child's connectedness to school, and with the parent's own sense of connectedness to school. One measure (how much their own child is formally recognized) is significantly linked to their student's grades. The overall student recognition measure (a combination of the constructs) also is significantly related to all outcomes in the parent survey data.

These results do not show cause and effect, and so the relation of the *Pulse Survey* measures to student outcomes *over time* must still be investigated. Nevertheless, the findings suggest that levels of student recognition as measured in the *Pulse Survey* are significantly associated with key measures of students' school success.

Table 1. Summary Statistics on the Major Scales in *The Pulse Survey*

This table summarizes the tests of the psychometric properties of the major scales in the *Pulse Survey* for each participant group (students, teachers, and parents). Because the focus is on student recognition and because of the desire to maintain parallel scales when possible, the properties of the student survey were prioritized when refining the final scales. (The range for all scales is 1 – 100.)

Scale and Definition	Students				Teachers				Parents			
	# Items	M	SD	α	# of Items	Mean	SD	α	# of Items	Mean	SD	α
Informal Recognition Students are known and valued through positive relationships.	8	62.2	15.3	.86	6	85.7	8.82	.79	8	66.5	15.2	.91
Formal Recognition[2] Tangible rewards reinforce a positive recognition culture.	6	47.0	14.8	.75	6	60.6	13.2	.79	6	52.2	17.6	.83
Fairness In Recognition Recognition opportunities are meaningful and unbiased.	4	69.8	16.4	.74	4	77.6	9.6	.49	4	69.4	14.0	.76
Focus on Effort Students are recognized for working hard, not just doing well.	4	56.3	17.5	.76	4	74.5	11.3	.60	4	58.1	17.4	.78
Having a Voice Students have a voice in school life and in how students are honored.	2	55.1	18.4	n/a[3]	2	64.4	13.9	n/a	1	63.7	20.3	n/a
Teacher Participation in Recognition Teachers give formal recognition to students.	—				5	51.9	14.6	.80	—			
The following scales were used to test the predictive validity of the recognition measures.												
Mastery Orientation Students who "work hard on all assignments, even if they won't affect my grade."	1	65.2	25.1	n/a	---				---			
Perseverance Students are motivated to work hard in school, even when facing challenges.	3	71.0	19.4	.79	—				—			

[2] Two additional items have been added to the final surveys that were not included in the pilot (based on open-ended feedback from the pilot survey). These items are not reflected in these scale statistics.

[3] Alpha reliability is not appropriate for constructs with only 2 items. The preferred statistic in these cases is a correlation coefficient. The correlation of the 2 Student Voice items was .18 for students ($p \leq .0001$), and .20 for parents ($p = .036$).

Table 2. Summary of Predictive Validity Correlations

	Student Survey				Parent Survey		
	Belonging	**Mastery Orientation**	**Perse-verance**	**Self-Reported Grades**	**Student Belonging**	**Parent Belonging**	**Parent-Reported Student Grades**
1. Informal Recognition	N/A	.27**	.31**	.24**	N/A	.68**	.26
2. Formal Recognition							
Formal recognition in school (school wide)	.31**	.10*	.14**	.11*	.42**	.53**	.10
How much YOU (YOUR CHILD) is recognized with formal rewards	.32**	.15**	.19**	.34**	.46**	.31**	.33**
3. Fairness in Recognition	.32**	.18**	.30**	.05	.36**	.55**	.12
4. Focus on Effort	.56**	.23**	.24**	.08	.47**	.39**	.03
5. Having a Voice							
Student voice	.44**	.20**	.18**	.09*	.34**	.38**	.16
Parent voice	---	---	---	---	.34**	.49**	.06
Overall Recognition Culture (5 Keys Combined)	N/A	.42**	.48**	.31**	N/A	.70**	.20**

* Correlation significant at $p \leq .05$
** Correlation significant at $p \leq .01$

N/A: These correlations were large (above .60) and significant. However, the "Belonging" outcome item also was part of the Informal Recognition construct. Therefore, correlations between the two are artificially high and so are not reported.

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