Family Engagement and Trust (FEAT) Survey

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"Raising the next generation is a shared responsibility. When families, communities and schools work together, students are more successful and the entire community benefits. For schools and districts across the U.S., family engagement is becoming an integral part of education reform efforts."

-U.S. Department of Education

The U.S. Department of Education (1992, 1996, 2000) has been championing the importance of engaging parents and families in students' academic lives for over two decades. Academic research in education has suggested that family engagement in education is one of the important factors influencing children's academic performance (Fan & Chen, 2001; also see Hill & Tyson, 2009, for a review). Recently, longitudinal research revealed that family involvement was also associated with increases in school grades (Wang, Hill, & Hofkens, 2014).

In Fall 2016, the California Department of Education released its new accountability and continuous improvement system. Parent Engagement was listed as the third priority area, right after the Basic Services and Conditions (Priority One) and Implementation of State Academic Standards (Priority Two). However, there is only limited guidance and resources about how to measure and track the progress of school parent engagement efforts.

To fill this gap, the Jacobs Institute for Innovation in Education (JI) at the University of San Diego (USD) is introducing an open-access survey tool[1], the Family Engagement and Trust (FEAT) Survey, to schools and districts in California. The FEAT Survey is grounded in research (e.g. Bryk & Schneider, 2002) and was refined and validated through a longitudinal multi-cohort family engagement evaluation project. The evaluation project was done in collaboration with the Cajon Valley Union School District in San Diego, California and funded by the Kellogg Foundation.

Family Engagement Assessment Literature Review

Evaluation studies on family engagement have utilized various assessment methods. For example, Powell-Smith, Stoner, Shinn, and Good III (2000) gave parents a checklist in which to record their time spent on different activities. St. Clair and Jackson (2006) had the instructors of a family engagement program fill out surveys to evaluate each family's level of participation.

However, most of these assessment tools were developed originally by researchers or evaluators for a case by case basis. Since no psychometrics tests or further validation were conducted, the reliability, usefulness, and generalizability of these tools could be limited.

A few assessments have provided evidence for their reliability and validity. One is the Family Involvement Questionnaire (FIQ), which is a 42-item self-report Likert

[1] This open access tool can be used for research and school evaluation purposes with proper citation. Commercial use of this tool is not allowed.
[2] Schools and districts outside of California can also use this tool, but please contact the Jacobs

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scale that also comes in a 21-item short form (Fantuzzo et al., 2004; 2013). The FIQ asks parents to provide information on their participation with their children's educational experiences through measuring participation in activities at home, at school, and with communication with schools. Its validity and reliability has been confirmed across various ethnicities, geographic regions, genders, family types and incomes, languages, and grades, and validated across several early childhood studies (for a review, see Fantuzzo et al., 2013). In addition, McWayne et al. (2013) developed their Parental Engagement of Families from Latino Backgrounds (PEFL) assessment, a 65-item scale that asks parents to self-report their engagement and comes in both English and Spanish. Scholars have called for family engagement efforts to take into account diverse ethnic and cultural backgrounds, more tools like the PEFL are needed.

These assessments all measure family engagement through behavioral indicators, rather than changes in perceptions. There are three reasons why developing measures that focus on perceptions, instead of behaviors, is needed regarding sensitivity, explanatory power, and interpretability. First, behaviors take much longer to change than perceptions, so the tools mentioned above may lack the sensitivity needed to catch the level of impact that can realistically occur during a program. Self-reported behavioral measures also tend to be less accurate than self-reported perception measures, and false memory exists commonly when people need to recall their behaviors when self-reporting. Second, even if a behavioral change occurs, it could be hard to explain what exactly caused the change and, therefore, what made a program effective. Since changes in perceptions are often the mechanism through which behavior change occurs, measuring perceptions could provide rich insights that help explain levels of family engagement behavior. Third, changes in behavior can be hard to interpret: what is the standard of family engagement behaviors? A parent who goes once a week to participate in school activities is not necessarily more engaged than one who goes once a month; increasing from once a week to twice a week is not necessarily indicative of more engagement, especially if these measures are being taken while a program is being administered and parents are required to attend. On the other hand, a perception of trust, for instance, does not necessarily increase after a parent attended a program event but an increase in trust is clearly positive in all cases.

Another significant challenge associated with existing family engagement assessments is that the length of the research-based survey is typically long so it is hard to obtain a high response rate when asking parents to voluntarily participate. Without an acceptable response rate, the survey results might be biased and the feedback from parents who might need family engagement support the most could be missing in the data. At the same time, multiple items are recommended in educational assessment research to measure a construct of perception or behavior reliably. It is important to consider the reality of the survey administration and data collection process while designing a research-based family engagement assessment.

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The Development of the Family Engagement and Trust (FEAT) Survey

Starting in Fall 2016, researchers at JI worked with the Cajon Valley Union School District in San Diego, California to evaluate a longitudinal multi-cultural family engagement program guided by the Dual-Capacity Building Framework (Mapp & Kuttner, 2013). As a pilot study, the researchers at JI and the Family & Community Engagement Officer at the district reviewed various existing research-based survey scales and developed a family engagement survey with 50 items with six measures to assess the parental outcomes of the family engagement efforts.

In the parent survey, one measure was Positive Trust, which includes 10 non-reversed items. This measure serves as a key indicator of the foundation of family engagement. Items were adapted from the Teacher-Parent Trust Scale (Bryk & Schneider, 2002). All items were rated on a 5-point Likert scale (1- Strongly disagree, 2- Disagree, 3- Neither agree nor disagree, 4-Agree, 5-Strongly agree). The survey was taken 847 times in the past two years by eight parent cohorts.

The reliability information of the Positive Trust measure in the parent surveys is shown in Table 1. Cronbach's alpha is an indicator of the inter-correlations or the internal consistency of scale test scores. It is a common estimate of the reliability of a scale with multiple items. An alpha larger than .80 indicates that the scale has good internal consistency; an alpha larger than .90 indicates that the scale has excellent internal consistency. In the six measures, the Positive Trust scale had the highest reliability with samples of all eight parent cohorts participated in the family engagement program across two years.

Table 1. Reliability information of the Positive Trust measure in the previous studies

	N	Alpha (pre-test)	Alpha (post-test)
2016 Fall parent survey	199 (pre) 158 (post)	0.88	0.90
2017 Spring parent survey	71 (pre) 54 (post)	0.84	0.79
2017 Fall parent survey	157 (pre) 104 (post)	0.85	0.84
2018 Spring parent survey	48 (pre) 56 (post)	0.94	0.91

Notes: For the pre-test, the survey was given to all the parents who came to the orientation; for the post-test, the survey was given to all the parents who came to the celebration and parents in the control group in each semester. The psychometrics analyses were conducted on the full sample, not the matched sample, so the numbers of participants who filled pre and post-survey are not the same.

We further conducted factor analyses to evaluate construct validity regarding the Positive Trust measure. First, an exploratory factor analysis (EFA) was conducted to

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examine the dimensionality using item loadings and the Scree Plot. Then, confirmatory factor analyses (CFAs) were conducted to help evaluate whether the hypothesized scale structure was appropriate. Standard model fit indices were used to evaluate model plausibility, including comparative fit index (CFI), Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). A CFA model fits data better with a higher CFI and TLI (e.g., $>= 0.90$), and a less RMSEA (e.g., $<= 0.08$). We used weighted least square estimation in both EFA and CFA due to the ordinal nature of the 5-point Likert-type scale data, in order to reduce the bias in estimation. All the analyses were conducted using Mplus 7 (Muthen & Muthen, 2012).

The results from EFA indicated that all 10 items had large loadings on the same factor (=0.65~0.81). The Scree Plot (see Figure 1) further supported 1-factor structure as the first factor explained the variance about five times than the second factor. Thus, the 1-factor CFA was conducted to evaluate the model fit.
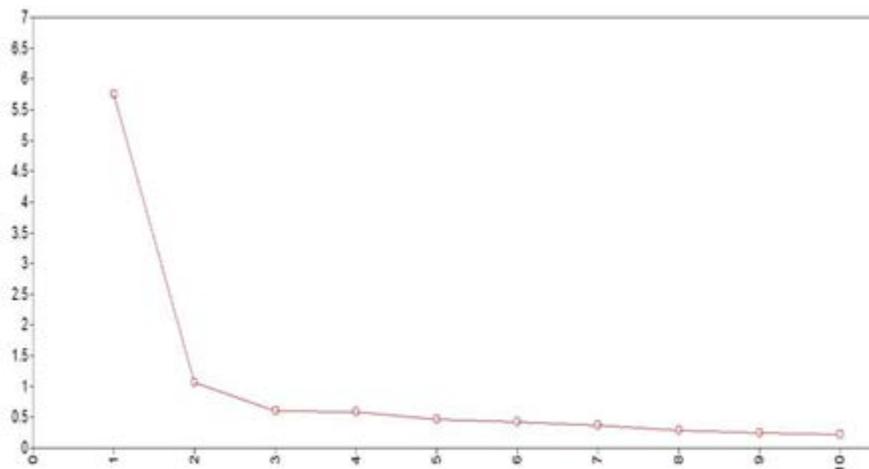

Figure 1. Scree Plot of EFA

The model fit results are presented in Table 2. Both 1-factor models with and without correlating item residuals) yield pretty good model fits based on the evaluation criteria described above. However, the model modification indices suggested to allow FEAT2, FEAT3, FEAT10, FEAT11 to have their residuals correlated, which is likely due to the significant conceptual overlap (i.e., r(FEAT2,FEAT3)=.325, r(FEAT3,FEAT5)=.236, r(FEAT10,FEAT11)=.195). As shown in Table 2, the fit indices were improved compared to the original model after relaxing the residual correlations between these three items. Thus, CFA validated that the latent structure of Positive Trust is appropriate including these 10 items. Table 3 shows the standardized factor loadings for individual items for the 1-factor model, which are considered to be acceptable by conventional standards (e.g., >.30).

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Table 2. Model Fit Statistics for Specified CFA Models.

Model	χ^2	df	p-value	CFI	TLI	RMSEA	90% CI
1-F without correlations	395.99	35	<.001	.94	.92	.15	[.14,.16]
1-F with correlations	99.86	32	<.001	.99	.98	.07	[.05,.08]

Table 3. Standardized Factor Loadings Derived From 1-Factor Model for FEAT Survey.

Item	λ	SE	p-value
FEAT2	0.57	0.04	<.001
FEAT3	0.61	0.03	<.001
FEAT4	0.71	0.03	<.001
FEAT5	0.59	0.03	<.001
FEAT6	0.75	0.03	<.001
FEAT7	0.80	0.02	<.001
FEAT8	0.83	0.02	<.001
FEAT9	0.81	0.02	<.001
FEAT10	0.76	0.03	<.001
FEAT11	0.73	0.03	<.001

In order to examine if the Positive Trust Spanish and Arabic versions measured the same construct as the English version, measurement invariance was subsequently evaluated under the resulting 1-fator structure. Measurement invariance is a statistical property that indicates whether the same construct is being measured across different groups. There are three levels of measurement invariance. The first level is configural invariance, which tests whether the model structure (i.e. item-factor relation) is the same across groups. The second level is metric invariance, which tests whether the factor loadings are the same across groups. The third level is scalar invariance, which further requires the latent means/thresholds of indicators are the same across groups. In this study, we only focus on examining whether the same latent construct is the same across groups using Arabic version, English version, and Spanish version (N=214, 147, and 140, respectively). Thus we only investigated the configural and metric invariance. A total of 501 unique participants from four parent cohorts were included in all the analyses. Because WLS estimation was used and the data is categorical, the DIFFTEST command was used in Mplus to compare two nested models. For example, the metric model is nested in configural model, because it has more constraints on the same factor loadings for all three groups compared to the configural model (no constraints on the same loadings across groups).

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Table 4 shows the fit statistics for models under assumptions of different levels of invariance. From model comparison results, the model (b) with constraining factor loadings to be equal across groups was significantly different from a model with item loading parameters being freely estimated (=83.39, p<.001). This comparison result indicates that non-invariance of factor loadings across groups. In addition, the model modification indices did not show any potential to conduct the partial invariance for the metric level. However, both two models had good model fits based on model fit indices (i.e. CFI, TFI, RMSEA). Thus, we can conclude that the Positive Trust scale measures the same construct under different translation versions.

Table 4. Measurement Invariance Analyses.

Model	χ^2	df	p-value	CFI	TLI	RMSEA	90% CI
a. Configural	272.48	125.00	<.001	1.00	0.99	0.08	[.07,.01]
b. Metric	325.58	143.00	<.001	0.99	0.99	0.09	[.08,.1]
Model Comparison	$\Delta\chi^2$	df	p-value	Δ CFI	Δ TLI	Δ RMSEA	
b v.s. a	83.39	18.00	<.001	0.00	0.00	0.00	

Furthermore, the pilot study showed that Positive Trust was one of the two factors that showed a statistically significant increase for the parents in the experimental group, while the change for parents in the control group was not significant. All the behavior indicators did not change significantly, which suggested that Positive Trust was a more sensitive measure of the effect of family engagement efforts.

These psychometric analyses show that the Positive Trust measure can be used as an effective tool to help school leadership to understand the foundation of the family engagement as well as monitor the potential impact of school family engagement efforts on parents' perceptions.

Given the reliability and validity evidence shown above, JI chose the Positive Trust as the key measure in the Family Engagement and Trust (FEAT) Survey. To make this survey more useful and to measure school-wide family engagement efforts more accurately, JI researchers consulted with multiple stakeholders to further validate and develop this tool. Two changes were made from the pilot study to the final version of the FEAT Survey: 1) revised some items in the Positive Trust measure to generalize the objective from only measuring teacher-parent relationship to school staff-parent relationship; 2) added three open-ended questions to help contextualize the quantitative measure of trust and family engagement. The final English and Spanish versions of the FEAT Survey are shown in Appendix 1 and 2.

Use of the Family Engagement and Trust (FEAT) Survey

The FEAT survey is an open access tool that we encourage all schools and districts in California[2] to use. There are several ways a school or a district can use this free tool:

- Build a family engagement and trust school profile
- Track the family engagement progress yearly
- Evaluate a specific family engagement effort

There are three ways we can calculate the Family Engagement and Trust (FEAT) score:

- *Mean score*: the mean score can be calculated by treating the item score as continuous variable and taking the average of the item scores. The mean score will range from one to five.
- *Percentage of parents who answered favorably*: Because all the items are non-reversed items, the higher the score the more the participant indicated trust. So we can consider option four (Agree) and option five (Strongly Agree) as the favorable answers. Parents who have a scale mean score greater than or equal to four would be considered as parents who answered favorably on the scale. After calculating the mean score of each participant, the percentage of parents who answered favorably can be computed. In order to make the score easier for audiences from a non-technical background to interpret, the percentage can be translated into a number from 0 to 100 as the final score. For example, a final score of 80 indicates that at this school, there were 80% parents answered favorably on the FEAT survey.
- *Change score*: If the FEAT survey is administered more than one time, a change score can be calculated to indicate the growth of family engagement and trust at school. The change score equals to the post score minus the pre score. A positive change score indicates that the trust between families and the school as educational partners increases over time. A negative change score indicates that the trust between family and school decreases over time.

Besides the FEAT score, schools and districts should also pay attention to the survey participation rate and the qualitative feedback collected through the open-ended questions to make sense of the FEAT survey data.

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[2] Schools and districts outside of California can also use this tool, but please contact the Jacobs Institute for Innovation in Education for more information, Yang Jiang yjiang@sandiego.edu.

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APPENDIX 1
Family Engagement And Trust (FEAT) Survey (English version)

1. Is this your first year with child(ren) attending this school?
☐ Yes*
☐ No
If yes, then go to the open ended questions.

We would like to ask you a few questions about your perceptions of your child's school and staff members. Please indicate how much you agree with each of the following statements.

2. Teachers and administrators at this school believe that I am doing my best to help my child learn.
☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

3. I believe that staff at this school feel good about my support for their work.
☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

4. Staff at this school really care about this local community.
☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

5. I believe that I do a good job of supporting the teachers at this school.
☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

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6. At this school, teachers and families think of each other as partners in educating children.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

7. I have full confidence in the expertise of the teachers and administrators at this school.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

8. Staff at this school work hard to build a trusting relationship with parents.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

9. Teachers and administrators at this school believe that talking with parents help them understand their students better.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

10. I feel respected by teachers and administrators at this school.

☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

11. I respect the teachers and administrators at this school.
☐ Strongly disagree
☐ Disagree
☐ Neither agree nor disagree
☐ Agree
☐ Strongly agree

Open-Ended Responses

12. What do you like the most about this school?

13. What do you expect the school to improve/change?

14. Other feedback or thoughts to help us better serve you or your child(ren)?

Thank you!

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APPENDIX 2
Family Engagement And Trust (FEAT) Survey (Spanish version)

1. ¿Es este su primer año con un niño (s) asistiendo esta escuela?
☐ Sí*
☐ No
En caso afirmativo, vaya a las preguntas abiertas.

Nos gustaría hacerle algunas preguntas sobre sus percepciones sobre la escuela y el personal de su hijo. Indique cuánto está de acuerdo con cada una de las siguientes afirmaciones.

2. Los maestros de esta escuela consideran de que hago lo mejor que puedo para ayudar a que mi hijo/a aprenda.
☐ Totalmente en desacuerdo
☐ En desacuerdo
☐ Ni de acuerdo ni en desacuerdo
☐ De acuerdo
☐ Totalmente de acuerdo

3. Creo que los maestros de esta escuela se sienten bien en cuanto a mi apoyo de su trabajo.
☐ Totalmente en desacuerdo
☐ En desacuerdo
☐ Ni de acuerdo ni en desacuerdo
☐ De acuerdo
☐ Totalmente de acuerdo

4. Los maestros de esta escuela realmente se preocupan por esta comunidad local.
☐ Totalmente en desacuerdo
☐ En desacuerdo
☐ Ni de acuerdo ni en desacuerdo
☐ De acuerdo
☐ Totalmente de acuerdo

5. Creo que hago un buen trabajo de apoyar a los maestros de esta escuela.
- ☐ Totalmente en desacuerdo
- ☐ En desacuerdo
- ☐ Ni de acuerdo ni en desacuerdo
- ☐ De acuerdo
- ☐ Totalmente de acuerdo

6. En esta escuela, los maestros y los padres se consideran socios en la educación de los niños.
- ☐ Totalmente en desacuerdo
- ☐ En desacuerdo
- ☐ Ni de acuerdo ni en desacuerdo
- ☐ De acuerdo
- ☐ Totalmente de acuerdo

7. Confío completamente en las habilidades de los maestros de esta escuela.
- ☐ Totalmente en desacuerdo
- ☐ En desacuerdo
- ☐ Ni de acuerdo ni en desacuerdo
- ☐ De acuerdo
- ☐ Totalmente de acuerdo

8. El personal de esta escuela trabaja duro para formar relaciones de confianza con los padres.
- ☐ Totalmente en desacuerdo
- ☐ En desacuerdo
- ☐ Ni de acuerdo ni en desacuerdo
- ☐ De acuerdo
- ☐ Totalmente de acuerdo

9. Los maestros de esta escuela creen que hablar con los padres les ayuda a comprender mejor a sus estudiantes.
- ☐ Totalmente en desacuerdo
- ☐ En desacuerdo
- ☐ Ni de acuerdo ni en desacuerdo
- ☐ De acuerdo
- ☐ Totalmente de acuerdo

10. Me siento respetado por los maestros de esta escuela.
- [ ] Totalmente en desacuerdo
- [ ] En desacuerdo
- [ ] Ni de acuerdo ni en desacuerdo
- [ ] De acuerdo
- [ ] Totalmente de acuerdo

11. Yo respeto a los maestros de esta escuela.
- [ ] Totalmente en desacuerdo
- [ ] En desacuerdo
- [ ] Ni de acuerdo ni en desacuerdo
- [ ] De acuerdo
- [ ] Totalmente de acuerdo

Respuestas abiertas

12. ¿Qué es lo que más te gusta de esta escuela?

13. ¿Qué esperas que mejore / cambie en la escuela?

14. ¿Otros comentarios o pensamientos para ayudarnos a servirle mejor a usted o a su (s) hijo (s)?

¡Gracias!

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