# Sluggish Attrition Rate Descent Means
# 1.9 Million to 3.5 Million More Texas Students May be Lost

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In a previous analysis, a Texas attrition rate between 31 percent and 36 percent for school year 2009-10 was forecasted (Montes, 2009). The IDRA latest attrition study just released indicates that the actual attrition rate is 29 percent for 2009-10 (Johnson, 2010). This is the second year in a row that the actual attrition rate was below the estimated range, shifting the prediction models slightly downward accordingly, as shown in the illustration below.

The new prediction moved the zero attrition date to the year 2040, from 2042 estimated last year, (and 2044 estimated two years ago). However the overall picture did not change significantly, as evidenced by the similarity between the revised forecasting models.

Since 2008, IDRA has been using three lineal regression models to estimate when the attrition rate would diminish to negligible values. The original values, for the school years 2008-09 and forward, derived from these models are depicted by the lighter dotted lines in the figure below. Two revisions, for school years 2009-10 and forward and 2010-11 and forward, are portrayed in progressively heavier lines.

The first model, called **Historic Forecast Model,** takes into account all known values, from 1986 to the present, as determined by the annual IDRA longitudinal attrition study (Johnson, 2010). This model assumes that each past rate has equal weight over future rates. For this model, all future attrition values within the model horizon would be higher than the current value, since the model constructs the current downward trend as a cyclical bottom within the long-term upward progression of the curve. In this formulation, the initial predicted attrition rate was 37 percent for 2008-09. As new actual lower attrition rates have occurred, the algorithm adjusted the predicted values lower to 36 percent for 2009-10 and now 32 percent for 2010-11. This model is depicted in blue in the chart below.

The second model assumes that the current downward trend is a more reasonable predictor of future attrition values. The fact that these are chronologically the most recent values supports this assumption. The recent past is usually more relevant to the present than the distant past.

## Attrition and Dropout Rates in Texas Over Time
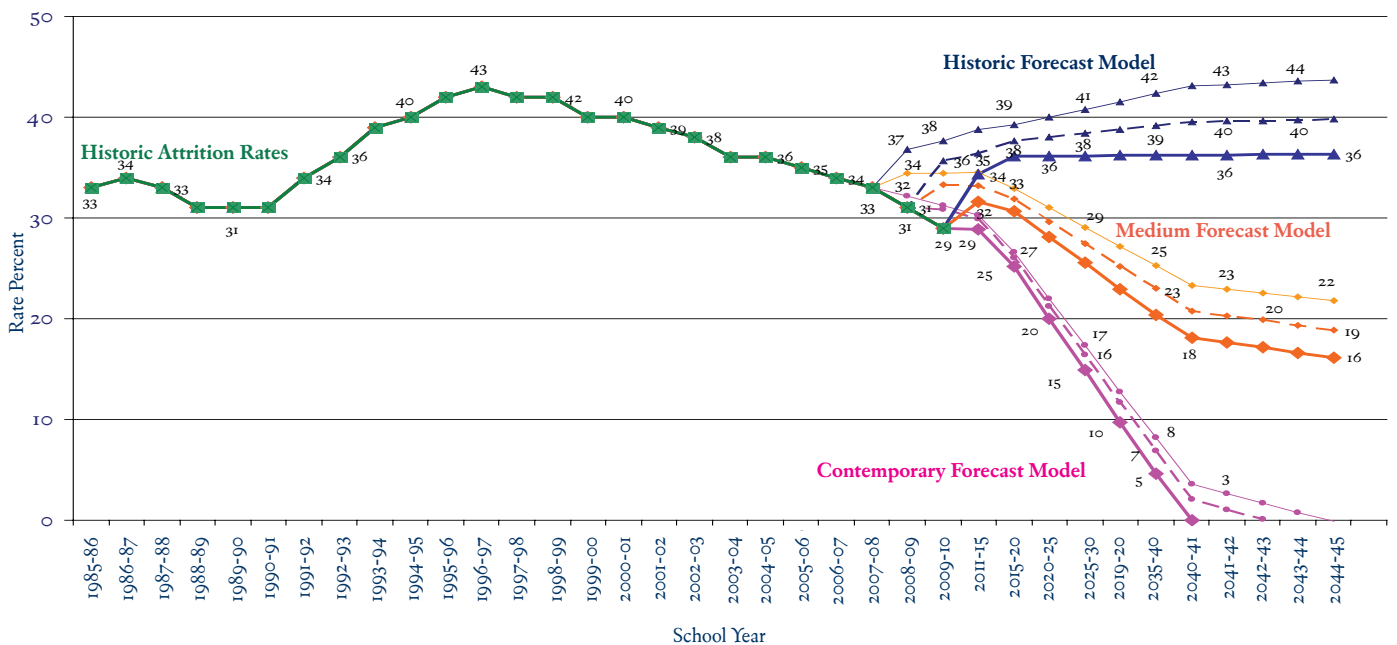


Note: For convenience, the forecasted series are shown in five-year periods (2015, 2020, 2025, 2030, 2035 and 2040). This makes the curves more abrupt than they really are. If all values were included, the curves would be smoother, but it would be a long graphic. Notice also that for the last few forecasted years, the axes reverts to annual values (2040, 2041, 2042, 2043, and 2044) to more clearly show the distinctions between the models for those final years.

Intercultural Development Research Association, 2010

Consequently, this **Contemporary Forecast Model** used the values corresponding to the school years 1996-97 to present, which represents the subsection of the historic series portraying the current downward trend. In this model, the predicted attrition rate would be 31 percent this year (2009-10) and would continue to decrease until it reached zero around the year 2042. Once the actual attrition rate of 29 percent was feed to the algorithm, the model predicts a 29 percent attrition rate for next year (2010-11) and zero in the year 2040. This model is depicted in pink in the chart on the previous page.

The third model takes a centrist view between the historic and contemporary forecast models. Mathematically, this **Medium Forecast Model** is formed applying the means between the pairs of corresponding two model values within the models time horizon. Because of the strong influence of past history, this model predicts attrition rates to first increase slightly, and then to resume their downward trend the subsequent years. This model predicted attrition rates of 34 percent, 33 percent and 32 percent, for the school years 2008-09, 2009-10 and 2010-11, respectively.

## Contemporary Model was Closest
The Contemporary Model came within two percentage points of predicting the actual attrition rate (31 percent versus the actual rate of 29 percent) this year. Using this new value (29 percent), we re-ran the three models and obtained the continuous, heavy lines in the figure above representing the new adjusted models. This time, the models predict a range of 29 percent to 34 percent for next year. The contemporary model forecasts an attrition value of 29 percent for 2010-11; the forecasted Historic value is now 34 percent and the Medium 32 percent.

As the figure shows, the new attrition value (29 percent), the lowest value ever obtained by IDRA attrition calculation, shifted the three model lines slightly downward for the second time.

However the overall picture did not change significantly. Even under the most optimistic prediction, the attrition will not get in single digits until the 2030s. The new prediction moves the zero attrition date to year 2040, from the 2042 estimated last year.

## Forecasted Numbers of Students Lost to Attrition 2011 to 2040

| Period | Historic | Contemporary | Medium |
|---|---|---|---|
| 2011-15 | 748,140 | 567,114 | 657,627 |
| 2016-20 | 795,141 | 485,214 | 640,177 |
| 2021-25 | 835,206 | 390,559 | 612,882 |
| 2026-30 | 875,335 | 284,703 | 580,019 |
| 2031-35 | 915,530 | 167,646 | 541,588 |
| 2036-40 | 955,791 | 44,967 | 500,259 |
| Total | 5,125,143 | 1,940,204 | 3,532,553 |

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### Forecasted Student Losses
To understand the severity of the situation, we used the updated three forecast models to estimate the number of students that will be lost to attrition during the time horizon under consideration (see table above).

The Historic Forecast Model predicts that more than 5.12 million students will be lost to attrition from 2011 to 2040. The Contemporary Model yielded a figure of more than 1.94 million, and the Medium Forecast Model more than 3.53 million.

### Conclusions
- If we take the full historic values as a guide, the student dropout rate should be expected to increase for the next few years and then plateau to about 36 percent. Under this scenario more than 5.12 million additional students will be lost to attrition by the year 2040.

- If we assume that current downward trend is real – the result of systemic changes – the attrition rate will reach single digit values in the early 2030s. By 2035, the attrition rate will be about 5 percent, and it will reach zero in the year 2040! However, from now to that point, we will have lost more than 1.94 million students to attrition.

- A more realistic model suggests that current rates will increase to 32 percent before resuming its downward trend. In this scenario, by the year 2040, attrition will still be at about 18 percent, and during the period 2011 to 2040, we would have lost more than 3.53 million students.

Therefore, we should expect high attrition rates, in the low 30s, for the next few years. We should also expect to lose between 1.94 and 5.12 million additional students to attrition before we reach a zero attrition rate forecasted under the most optimistic scenario, unless this issue is considered seriously by policymakers and systemic changes implemented to ameliorate the problem.

### Resources
Montes, F. *Zero Attrition Constitutes Distant Prospect Despite Improvement,* IDRA supplemental analysis (San Antonio, Texas: Intercultural Development Research Association, October 2009).

Johnson, R.L. *Texas Public School Attrition Study, 2009-10 – More than 3 Million Students Have Been Lost from Texas High Schools Since 1986* (San Antonio, Texas: Intercultural Development Research Association, October 2010).