Shiny Schools: Do New Schools and New Programs Solve the Dropout Problem

by John Hill, Ph.D.

Introduction: Magnet schools and charter schools are often offered by communities as solutions to the dropout rate. Managing the dropout rate is important as district performance is measured via the dropout rate. Districts have a variety of avenues they can use to affect the dropout rate, but the question is: is there evidence that these expenditures improve the dropout rate and the district's Texas Education Agency (TEA) acceptability rating?

It is this last issue that I thought might benefit from empirical analysis. I scanned the peer-reviewed literature in the dropout rate published by other economists and found nothing that established causation between the dropout rate and vocational education[1]. However, the Texas Education Agency (TEA) maintains a comprehensive list of measured events in the life our state's schools. This list includes drop-out rates, school spending and student demographics – all of which can be used to produce a causal story regarding what drives the dropout rate.

II. Data: As mentioned in the previous section, TEA provides data, cut by district and campus, on Texas schools. This data is available at: ritter.tea.state.tx.us/perfreport/aeis/2008/DownloadData.html. As decisions are made on a district, rather than campus, basis, data for districts were employed in my analysis. The 2007-8 data offer 1230, cross-sectional observations – some of these are for districts, other are for charter school, but all are accounted using the same standard.

The data is broken into subsets – one for finance, one for student demographics, one for a retention issues (such as the dropout rate), a set of completion rates[2], and one for county and

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[1] I became interested in this issue because Abilene is in the midst of a bond election for a new technology career high school. Part of the bond's promotion lay with the assertion "A technology career high school that trains people for non-college jobs will cause the dropout rate to decrease". As nothing factual was offered along with this assertion, I decided to evaluate the issue myself.

[2] I chose the dropout rate as my dependent variable to explain because it is a commonly-referenced measurement of school success. Following my analysis, I was directed, instead, to the completion rate as a better measure of who stays and who drops out. I re-crafted my analysis, this time using completion rate as my dependent and the relationship between the vocational education and the completion rate mirrored the relationship between the

district information that was used to meld school data with data from other sources. Other sources I reviewed included the Bureau of Labor Statistics (www.bls.gov) and the Texas Department of Health Services (www.dshs.state.tx.us/). I used these sites because I thought it would be interesting to look at the relationship between the dropout rate explained by teen pregnancy, the unemployment rate, and weekly pay. However, the variable for "at-risk" students[3] is so much more powerful and captures conditions these single-note variables introduce. Consequently, these variables were part of my initial pass at analyzing the data, but didn't carry forward to my preliminary or primary models.

When conducting my analysis I used the following variables from the TEA website:

District Non-TAKS Performance Information - APIB, RHSP, Dropout, Attendance & Advanced Courses:

- DA0912DR07R -- Dropout Rate (Gr 9-12), 2007, All Students

Finance:

- DPFEAALLK -- District 2007 Finance: Expenditure-Total Per Pupil, All Funds
- DPFEACAPK -- District 2007 Finance: Expenditure by Object-Capital Outlay Per Pupil, All Funds
- DPFEADEBK -- District 2007 Finance: Expenditure by Object-Debt Service Per Pupil, All Funds
- DPFEAINSK -- District 2007 Finance: Expenditure by Function-Instruction Per Pupil, All Funds
- DPFEAPLAK -- District 2007 Finance: Expenditure by Function-Plant Maintenance & Operations Per Pupil, All Funds
- DPFPAATHK -- District 2007 Finance: Expenditure by Program-Athletics/Related Activities Per Pupil, All Funds

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dropout rate and vocational education. A further side note: the construction of this data made evident non-reporting districts and these were eliminated from the model. The outcome of this was that this model's ability to explain variation in the data improved by roughly 100%.

[3] "At-risk" is subsequently defined in this section.

- DPFPABILK -- District 2007 Finance: Expenditure by Program-Bilingual Per Pupil, All Funds

- DPFPAVOCK -- District 2007 Finance: Expenditure by Program-Career & Technology Per Pupil, All Funds

Student Demographics:

- DPETALLC -- Total Students, Enrollment Count

- DPETECOP -- Economically Disadvantaged Students, Percent

- DPETGPKP -- Grade PK, Enrollment Percent

- DPETRSKP -- At Risk Students, Percent

- DPETVOCP -- Students in Vocational Education Programs, Percent

- DPETWHIP -- White Students, Percent

For the purists among you, attention was given to issue of multicollinearity[4]. For example, if one uses percent white, black, and Hispanic to explain the dropout rate, you run the risk of these variables defining each other. Similarly between these data sets, one must also be mindful of explaining the dropout rate with both percent students in vocational programs along with per- pupil expenditures on career and technology schools as they would explain each other and the dropout rate.

Two variables – DPETRSKP or "at-risk" and DPETECOP or "economically disadvantaged" – beg a restatement of the TEA's definition – I was curious as to what went into each variables construction if I was going to use it to explain the dropout rate. TEA defines "at-risk" as a student who is at-risk of dropping out of school, under age 21 years of age and who:

1. is in prekindergarten, kindergarten or grade 1, 2, or 3 and did not perform satisfactorily on a readiness test or assessment instrument administered during the current school year;

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[4] Multicollinearity is a case where independent variables explain both the dropout rate and each other. While it doesn't bias the data, it does render our dependent variables insignificant when working together to explain the dropout rate.

2. is in grade 7, 8, 9, 10, 11, or 12 and did not maintain an average equivalent to 70 on a scale of 100 in two or more subjects in the foundation curriculum during a semester in the preceding or current school year or is not maintaining such an average in two or more subjects in the foundation curriculum in the current semester;

3. was not advanced from one grade level to the next for one or more school years;

4. did not perform satisfactorily on an assessment instrument administered to the student under TEC Subchapter B, Chapter 39, and who has not in the previous or current school year subsequently performed on that instrument or another appropriate instrument at a level equal to at least 110 percent of the level of satisfactory performance on that instrument;

5. is pregnant or is a parent;

6. has been placed in an alternative education program in accordance with TEC §37.006 during the preceding or current school year;

7. has been expelled in accordance with TEC §37.007 during the preceding or current school year;

8. is currently on parole, probation, deferred prosecution, or other conditional release;

9. was previously reported through the Public Education Information Management System (PEIMS) to have dropped out of school;

10. is a student of limited English proficiency, as defined by TEC §29.052;

11. is in the custody or care of the Department of Protective and Regulatory Services or has, during the current school year, been referred to the department by a school official, officer of the juvenile court, or law enforcement official;

12. is homeless, as defined NCLB, Title X, Part C, Section 725(2), the term "homeless children and youths", and its subsequent amendments; or

13. resided in the preceding school year or resides in the current school year in a residential placement facility in the district, including a detention facility, substance abuse treatment facility, emergency shelter, psychiatric hospital, halfway house, or foster group home.

Students that are "economically disadvantaged" are defined as students who are:

1. Eligible For free meals under the National School Lunch And Child Nutrition Program

2. Eligible For reduced-price meals under the National School Lunch And Child Nutrition Program

3. from a family with an annual income at or below the official federal poverty line,

4. eligible for Temporary Assistance to Needy Families (TANF) or other public assistance,

5. received a Pell Grant or comparable state program of need-based financial assistance,

6. eligible for programs assisted under Title II of the Job Training Partnership Act (JTPA), or eligible for benefits under the Food Stamp Act of 1977

Given the definition of "at-risk", we can see that many social conditions are addressed in this variable and it proved to be a potent predictor of the dropout rate. The variable "economically disadvantaged" did too, but with surprising results.

III. Model estimation: OLS regression analysis was employed to look for relationships between the dropout rate and various combinations of the aforementioned dependent variables.   Two models were estimated: a preliminary investigation with a limited list of explanatory variables and a second estimation that breaks district spending in subcategories and adds more demographic variables[5].

It is worth nothing my standard for statistical significance. If a variable is significant at or above a 90% confidence level, then it is considered statistically valid.

Preliminary model: The simplest approach is to look at overall spending and a few demographics to explain the dropout rate. My simplest model employs:

- DPETWHIP -- White Students, Percent

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[5] Before I get too deep into all this, I will add that you can skip section III. if you wish – I've included it for all you statistical-types who might feel more comfortable seeing my thought process. I've been told that I sometimes get too technical, and I don't want to bore you, but at the same time I'm certainly not asking you to unquestioningly accept my judgment, and I hope this section will help.

- DPETALLC -- Total Students, Enrollment Count

- DPETECOP -- Economically Disadvantaged Students, Percent

- DPETRSKP -- At Risk Students, Percent

- DPETVOCP -- Students in Vocational Education Programs, Percent

- DPFEAALLK -- District 2007 Finance: Expenditure-Total Per Pupil, All Funds

- DA0912DR07R -- Dropout Rate (Gr 9-12), 2007, All Students

with the grades 9-12 dropout rate serving as the dependent variable to be explained. *A priori*, one would expect that the dropout rate would fall with increases in the

- percent white students

- total spending per pupil would decrease the dropout rate.

The dropout rate would rise with increases in

- the number of economically disadvantaged students

- the size of the district

- the percent of at-risk students in the district

Lastly, conventional wisdom would tell one that the relationship between the dropout rate and vocational education is assumed to be positive.

The results of the preliminary regression are summarized in Table 1. Table 1 states that an increase in the percent white students and total per pupil spending causes the dropout rate to fall. Table 1 also states that increases in the percentage of at-risk students causes the dropout rates to rise – one could say that current TEA measures of predicting the dropout are sound. It was assumed that large districts become more impersonal causing the

Table 1: Preliminary estimation on the dropout rate

Regression Statistics	
Multiple R	0.547058218
R Square	0.299272694
Adjusted R Square	0.295832134
Standard Error	3.137314272
Observations	1229

ANOVA

	df	SS	MS	F	Significance F
Regression	6	5136.949636	856.1582726	86.98372603	7.22942E-91
Residual	1222	12027.82931	9.84274084		
Total	1228	17164.77894			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	2.451998921	0.600829592	4.081022226	4.77475E-05	***
total spent per pupil	-0.000107196	2.38633E-05	-4.492091929	7.72028E-06	***
district enrollment	6.95846E-06	7.94668E-06	0.875644753	0.381395269	
percent econ disadvantaged	-0.044240689	0.006609028	-6.693978393	3.3016E-11	***
percent at risk	0.098658396	0.006316664	15.6187511	2.8087E-50	***
percent white	-0.029441103	0.004685387	-6.283601635	4.59218E-10	***
% vocational	0.024853901	0.006903908	3.599975568	0.000330994	***

Asterisks denote statistical significance. *** significant at the 99% level, ** significant at the 95% level, and *

dropout rate to rise, however the total number enrolled in the district has no impact on the dropout rate[6].

Surprisingly, two variables worked against our anticipated results.   As the percentage of economically disadvantaged students grew, the dropout rate grew smaller.   While this contradicts our *a priori* expectations, one might argue that a poor kid at a rich school feels alienated and quits, but a poor kid in a poor district is just like everyone else, enjoys a support network, and retains. This is an awkward result – especially if you consider how much effort the Texas school boards and administrator used to gerrymander school boundaries to apportion student subpopulations across the schools. Taking this result to its extreme, it would seem that the district could increase retention if they would draw boundaries to reflect neighborhoods and encourage economic homogeneity instead.

Not quite as unexpected, the data revealed that an increase in the percent of students in vocational programs causes the dropout rate to increase. This outcome violates an argument for career technology magnet schools as it shows vocational programs are not the solution for the dropout rate.

Primary model: With the exception of total spending per pupil, the variables from the preliminary estimation were reemployed in the second, primary estimation.

- DPFEACAPK -- District 2007 Finance: Expenditure by Object-Capital Outlay Per Pupil, All Funds
- DPFEADEBK -- District 2007 Finance: Expenditure by Object-Debt Service Per Pupil, All Funds
- DPFEAINSK -- District 2007 Finance: Expenditure by Function-Instruction Per Pupil, All Funds

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[6] This last variable comes and goes with regard to statistical validity. In the preliminary model, it is just on the cusp of being statistically significant at the 90% level of significance. In Table 3, a redefinition of vocational education seems to edge it into the statistical significance at the 90% level of confidence.

- DPFEAPLAK -- District 2007 Finance: Expenditure by Function-Plant Maintenance & Operations Per Pupil, All Funds

- DPFPAATHK -- District 2007 Finance: Expenditure by Program-Athletics/Related Activities Per Pupil, All Funds

- DPFPABILK -- District 2007 Finance: Expenditure by Program-Bilingual Per Pupil, All Funds

- DPFPAVOCK -- District 2007 Finance: Expenditure by Program-Career & Technology Per Pupil, All Funds

- DPETALLC -- Total Students, Enrollment Count

- DPETECOP -- Economically Disadvantaged Students, Percent

- DPETGPKP -- Grade PK, Enrollment Percent

- DPETRSKP -- At Risk Students, Percent

- DPETVOCP -- Students in Vocational Education Programs, Percent

- DPETWHIP -- White Students, Percent DA0912DR07R -- Dropout Rate (Gr 9-12), 2007, All Students

with the grades 9-12 dropout rate serving as the dependent variable to be explained. *A priori*, one would expect that the dropout rate will decrease due to increases in:

- the percent of white students

- the percent of children in pre-kindergarten programs

- any district spending, whether it be spent on teachers, new facilities, facilities maintenance, athletics, bilingual education or career/technology education[7]

- the percent of district population classified as economically disadvantaged (using our redefined role for percent economically disadvantaged)

One would expect that the dropout rate will rise if:

- total enrollment rises

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[7] After all, who would spend money to run off our students or make their outcomes worse?

- the population percent considered at-risk increases
- there are increases in vocation programs (again, employing our redefined role for percent in vocational education)

We have the opportunity to investigate vocational program using two variables:

- DPETVOCP -- Students in Vocational Education Programs, Percent
- DPFPAVOCK -- District 2007 Finance: Expenditure by Program-Career & Technology Per Pupil, All Funds

To eliminate the possibility of multicollinearity, both variables will not be considered simultaneously in a single model. Instead two primary estimations will be made, each employing a different measurement of the district's commitment to vocational education.

Tables 2 and 3 summarize the results of these two, primary regressions. The difference between Tables 2 and 3 is that Table 2 introduces the relationship between vocational education and the dropout rate via the percent of students in vocational programs and Table 3 introduces the relationship between vocational education and the dropout rate via per pupil spending on vocational programs. The results in Tables 2 and 3 state that the dropout rate will decrease due to increases in:

- the percent white students
- the percent of children in pre-kindergarten programs
- spending per pupil on instruction
- spending per student on athletics
- the percent of district population classified as economically disadvantaged
- spending per pupil on bilingual programs

and increase because

- the population percent considered at-risk increases

Table 2: The role of percent vocational students on dropout rate

Regression Statistics	
Multiple R	0.565961535
R Square	0.32031246
Adjusted R Square	0.313605017
Standard Error	3.097469041
Observations	1229

ANOVA

	df	SS	MS	F	Significance F
Regression	12	5498.092561	458.1743801	47.75478041	2.69497E-93
Residual	1216	11666.68638	9.594314458		
Total	1228	17164.77894			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	2.637510431	0.616062602	4.281237692	2.00477E-05	
% vocational	0.024363688	0.007574031	3.216739951	0.00133073	***
district enrollment	1.41552E-05	8.63343E-06	1.639574936	0.101352233	
percent econ disadvantaged	-0.030457567	0.007368805	-4.13331169	3.82079E-05	***
percent at risk	0.095721461	0.006429371	14.88815291	3.53688E-46	***
percent white	-0.02699463	0.004887993	-5.522640916	4.08013E-08	***
percent preK	-0.054916312	0.014871067	-3.692829241	0.000231609	***
debt service per pupil	-0.000149089	0.000173316	-0.860216786	0.389839118	
capital outlay per pupil	-3.14136E-05	5.4311E-05	-0.578401639	0.563100091	
maintenance per pupil	-7.0804E-06	0.000216751	-0.032666015	0.973946286	
athletic spending per pupil	-0.001458527	0.000644999	-2.261286486	0.023917589	***
bilingual per pupil	-0.002276283	0.000766491	-2.969745893	0.003038922	***
instruction per student	-0.000239632	6.99357E-05	-3.426465431	0.000631908	***

Asterisks denote statistical significance. *** significant at the 99% level, ** significant at the 95% level, and * significant at the 90% level

Table 3: The role of career tech spending per pupil on dropout rate

Regression Statistics	
Multiple R	0.562940978
R Square	0.316902545
Adjusted R Square	0.310161452
Standard Error	3.105229144
Observations	1229

ANOVA

	df	SS	MS	F	Significance F
Regression	12	5439.562133	453.2968444	47.01055612	5.35594E-92
Residual	1216	11725.21681	9.642448034		
Total	1228	17164.77894			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	2.842632419	0.626943288	4.534114124	6.35572E-06	
district enrollment	1.51748E-05	8.6455E-06	1.755228605	0.079471985	*
percent econ disadvantaged	-0.030835403	0.007410337	-4.161133659	3.38951E-05	***
percent at risk	0.10046403	0.006168979	16.28535859	4.31974E-54	***
percent white	-0.02550816	0.004883901	-5.222906977	2.07043E-07	***
percent preK	-0.062477226	0.014627153	-4.27131814	2.09468E-05	***
debt service per pupil	-0.000150506	0.000173908	-0.865434789	0.386970898	
capital outlay per pupil	-3.53015E-05	5.44701E-05	-0.648089075	0.51704969	
maintenance per pupil	-3.76182E-05	0.000218449	-0.172205605	0.863304547	
athletic spending per pupil	-0.001191222	0.0006471	-1.840860835	0.065885449	*
bilingual per pupil	-0.00239933	0.000766857	-3.128784494	0.001797042	***
instruction per student	-0.000268879	7.04018E-05	-3.819202046	0.00014064	***
career tech education per pupil	0.000974986	0.000474296	2.055646751	0.040029712	**

Asterisks denote statistical significance. *** significant at the 99% level, ** significant at the 95% level, and * significant at the 90% level

- of increases in vocation programs

The only difference between Tables 2 and 3 is that overall district population increases the dropout rate in Table 3 when career tech spending per pupil is used to explain the dropout rate. In this instance, it matches our *a priori* expectation: large districts alienate students and have more of a problem with the dropout rate.

When school district floats a bond election to their community, a theme used to sell the new construction is that a new building will get students excited about vocational education and engender pride in these students that can be parlayed into a finished degree. Of course, this raises the question "What do we do when the building gets old – will they start dropping out?" In contrast to this assertion, expenses for debt-service per pupil, capital outlays per pupil and facilities maintenance per pupil reveal no statistical bearing on the drop-out rate in both Table 2 and Table 3. The statistical inconclusiveness of these variables tells us that we can put money towards facilities, but it doesn't matter when it comes to the dropout rate.

Conclusions: There are several phrases that cause me to ask questions. "It's for the kids" may be at the top of this list – typically because it involves money. School decision-making is rife with the play of this trump card, and in many cases rightfully so, as every decision is predicated on this statement. In contrast, I would suggest the following:

Using a new school and new program to fight the dropout rate: This study was to empirically critique: that vocational training will make schooling relevant for a subset of students and that new facilities get students excited about learning and both these events will decrease the dropout rate.

Unfortunately, the data employed in this analysis shows this is not the case. For one, expenditures on new facilities have no measurable effect on the dropout rate. Too, there is a positive correlation between the dropout rate and vocational education – whether that is measured as percent of all students that are vocational or vocational spending per pupil.

One might offer a chicken or egg critique at this point: districts with a preponderance of at-risk students spend more money on vocational education and that it's a case of money following a problem rather than money causing a problem. Recall, however, that we have already controlled for at-risk students in our analysis with a distinct variable to assess at-risk status' impact on the dropout rate. For this reason, vocational programming is measuring something distinct from at-risk status.

In my mind, here's the most important observation about what may be happening: students enroll in vocational programs, get training and then drop out before they graduate. Perhaps the vocational programs don't have the chance to matriculate students because they are too successful in making students valuable to employers and they leave school because the opportunity cost of lost income is too great.   If that's the case, then, these programs are working and that's great.

The unfortunate question at this point is: should one condemn vocational programs because TEA has chosen a poor measurement of success? Remember, districts are forced by the state to pay considerable lip service to their dropout rate. Would a TEA bureaucrat consider an employed junior-year dropout with two years of public school vocational training successful? Using the dropout rate as our standard of evaluation, then no, they wouldn't.

Perhaps part of the problem is that our standard for success is misplaced in the dropout rate. Our obsession about completion may adulterate high school education and create, for successful, vocationally-trained, high school dropouts, a perverse standard of failure.

The surprise variable: economically disadvantaged: At the outset of this analysis, our expectation was that a larger percentage of economically disadvantaged students would increase the drop-out rate. Surprisingly, the larger the percentage of economically disadvantaged students caused the drop-out rate to shrink.

A rationale to explain this highly significant and inversely related variable is that if you are economically disadvantaged and attend a school with kids from wealthy families, you feel left out, have a smaller support network and consequentially, drop out. Conversely, poor kids that attend schools with people like themselves, measured by a growing percentage of the economically disadvantaged, seem to retain better.

Table 4 looks at this phenomenon further. Table 4 introduces a new variable – "economically disadvantaged squared" – to see if there is a return revealed in an increasingly declining dropout rate as the population of economically disadvantaged students grows. Apart from this newly defined variable, Table 4 is just like Table 2 as it employs percent vocational students to introduce the impact of vocational education on a district's dropout.

What is discovered is that the dropout rate falls faster as the percentage of economically disadvantaged in a district increases. This would seem to corroborate the assertion that a poor kid in a rich kid's school feels class distinction and quits, but a poor kid in a poor kid's district doesn't know he's so poor, feels kinship with his district, and retains. If the district is sincere in combating the dropout rate, we need to ask hard questions about engineering economic diversity in our schools.

Of course, the schools have other outputs besides a low dropout rates. They are perceived as the "great equalizer" designed to bring together people from a variety of backgrounds and knit them together as a community.   While this equity-oriented aim is admirable, the public schools need to be aware that this objective may work counter to their goal for decreased school dropouts.

What works: teacher pay, athletic programs and proactive dropout policies: The data also revealed that there are expenditures within the control of the district that can improve the dropout rate. These are:

Table 4: Investigation of the role of the economically disadvantaged on dropout rate

Regression Statistics	
Multiple R	0.568305398
R Square	0.322971026
Adjusted R Square	0.315727094
Standard Error	3.092677224
Observations	1229

ANOVA

	df	SS	MS	F	Significance F
Regression	13	5543.72626	426.4404815	44.58504743	1.84335E-93
Residual	1215	11621.05268	9.564652413		
Total	1228	17164.77894			

	Coefficients	Standard Error	t Stat	P-value	
Intercept	1.956108898	0.689693397	2.836200702	0.00464113	
% vocational	0.02174534	0.007656731	2.840029271	0.004586159	***
district enrollment	1.32362E-05	8.63033E-06	1.533685741	0.125367319	
percent econ disadv	0.006567516	0.018478578	0.355412428	0.72234233	
percent eco disad squared	-0.000367744	0.00016836	-2.184279654	0.029132336	**
percent at risk	0.096465381	0.006428453	15.00600207	7.98879E-47	***
percent white	-0.029116729	0.004976192	-5.851207136	6.26924E-09	***
percent preK	-0.050665864	0.014975031	-3.383356102	0.000738872	***
debt service per pupil	-0.000130975	0.000173246	-0.756005193	0.449792628	
capital outlay per pupil	-3.66549E-05	5.42801E-05	-0.675291726	0.499618931	
maintenance per pupil	-2.40933E-07	0.000216439	-0.001113172	0.999112	
athletic spending per pupil	-0.001705662	0.000653864	-2.608586534	0.009203272	***
bilingual per pupil	-0.002263427	0.000765328	-2.957461534	0.003161807	***
instruction per student	-0.000222567	7.02632E-05	-3.167615898	0.001575228	***

Asterisks denote statistical significance. *** significant at the 99% level, ** significant at the 95% level, and * significant at the 90% level

Teacher pay: which makes sense in a classic labor-theory way – better pay attracts better teachers that who can deal with the dropout problem in the classroom.

Athletics: I sort of enjoyed seeing this one come to the fore – we always decry the salaries paid to our coaches or the money spent on athletic programs – being able to empirically show that athletic spending combats the dropout rate was an interesting outcome. I would suspect that athletic programs make students feel like they belong and that, in turn, helps retention.

Early childhood education and bilingual education: I'm not stating anything new when I model early childhood education decreases the dropout rate – other economists who have looked at education data have already established this link. However in this model, which affords comparison between vocational programming and early intervention programming, it would seem that early childhood education is superior when combating the dropout rate. Bilingual programs also provide a similar return. They give kids skills so education is relevant and they don't feel left out of the instruction process as they move toward graduation.