



3 de abril de 2013

Hon. Mari Tere González
Presidenta
Comisión de de Educación, Formación y Desarrollo del Individuo
El Capitolio
San Juan, Puerto Rico

R. C. del S. 54: Para ordenar al Departamento de Educación de Puerto Rico a cumplir en un periodo no mayor de 90 días con la Ley Núm. 165-2011 que enmendó el Artículo 1.03 de la Ley Núm. 149 de 15 de julio de 1999, según enmendada, conocida como “Ley Orgánica del Departamento de Educación de Puerto Rico”, que ordena al Secretario de Educación a proveer información al Instituto de Estadísticas de Puerto Rico para crear un Sistema de Detección Temprana de Desertores y rendir anualmente un “Reporte de Deserción Escolar” al Gobernador y a la Asamblea Legislativa.

Estimado señora Presidenta:

Reciba un cordial saludo de parte de quienes integramos el Instituto de Estadísticas de Puerto Rico (Instituto).

I.

Recientemente recibimos la solicitud para exponer nuestros comentarios en torno a la medida de referencia. En esencia, la medida ordena al Departamento de Educación de Puerto Rico a cumplir en un periodo no mayor de 90 días con la Ley Núm. 165-2011.

II.

La Ley 165-2011 dispone el deber del Secretario de Educación de rendir anualmente, a partir de agosto de 2011, un “Reporte de Deserción Escolar en Puerto Rico”. Dicho Reporte será sometido al Gobernador de Puerto Rico, a la Asamblea Legislativa a través de la Secretaría de cada Cuerpo, y al Instituto de Estadísticas de Puerto Rico. Se dispone, además, que el Reporte estará disponible en la página electrónica en la red del Departamento de Educación.

Además, la Ley 165-2011, citada, designó de manera permanente al Instituto como representante autorizado del Departamento de Educación para propósitos de que esta Agencia comparta con el Instituto información estudiantil, incluyendo información personalmente inidentificable, según se define en la *Family Educational Rights and Privacy Act*, 20 U.S.C & 1232g, y la reglamentación aplicable emitida al amparo de dicha legislación, 34 C.F.R. Part 99, incluyendo cualesquiera enmiendas u otras disposiciones pertinentes de las leyes o reglamentos federales.

Como parte de esta designación, el Departamento de Educación viene obligado a proveerle al Instituto un **acceso directo, actualizado y constante de los datos que custodia en las siguientes bases de datos, pero no limitado a: el sistema de Información Estudiantil (SIE), las bases de datos de las Pruebas Puertorriqueñas de Aprovechamiento Académico (PPAA), y el Programa de Alfabetización de Adultos, los Proyectos CASA, CRECE, CREARTE, e Instituciones Juveniles.**

Durante el año fiscal 2011-12, el Departamento de Educación proveyó al Instituto una copia estática de ciertas bases de datos bajo su custodia, pero al momento el acceso directo, actualizado y constante, según dispone la Ley, no ha sido otorgado. Por su parte, el Instituto comenzó a analizar la información obtenida y ya cuenta con algunos resultados preliminares (ver anejo). En el desarrollo del Sistema de Detección Temprana de Deserción Escolar, además contamos con la asistencia técnica del *Institute for Education Science* del *U.S. Department of Education*.

Sin embargo, la situación antes señalada, la falta de un acceso directo, actualizado y constante a las bases de datos bajo custodia del Departamento de Educación, ha limitado el desarrollo del Sistema de Detección Temprana de Deserción Escolar que promueve la Ley Núm. 165-2011. La situación también dificulta nuestra función de asesoramiento al Departamento de Educación en la preparación del Reporte de Deserción Escolar antes indicado.

III.

Por las consideraciones expuestas, el Instituto, representado por su Director Ejecutivo, no tiene reserva legal respecto **a la aprobación de la R. C. del S. Núm. 54.**

Como medida deferencial sugerimos, respetuosamente, que se le solicite la opinión al Departamento de Educación.

Cordialmente,



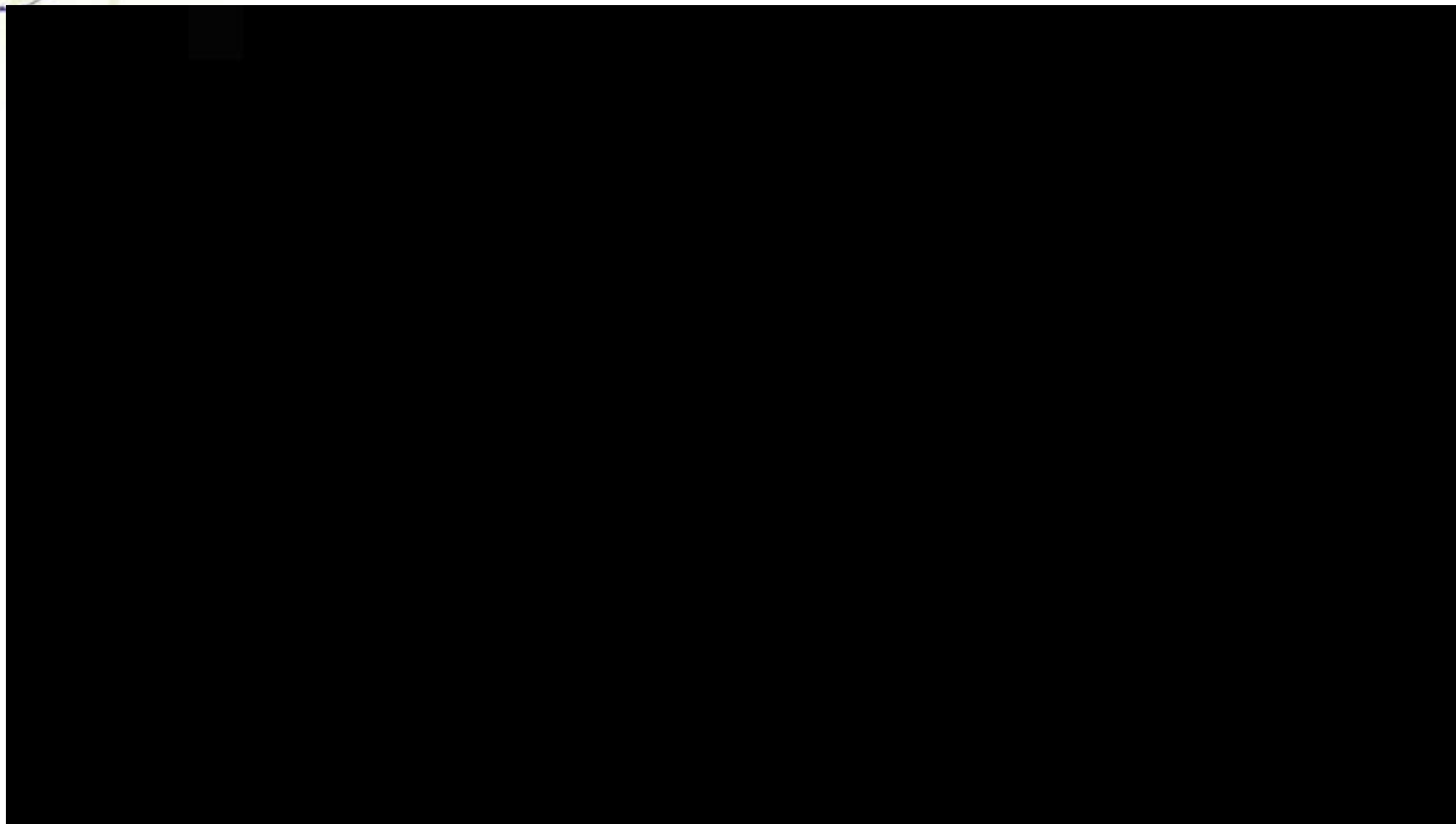
Mario Marazzi-Santiago, Ph.D.
Director Ejecutivo



Puerto Rico Institute of Statistics

Early Warning Dropout System: Work scope and Preliminary Outputs

Dr. Orville M. Disdier
Project Manager



Source: <http://www.youtube.com/watch?v=TDk9eQMPvG8>.

Seleccione un estado para ver la información estadística detallada.

Fuente: <http://www.boostup.org/es/facts/statistics#national>.

Tasa de deserción

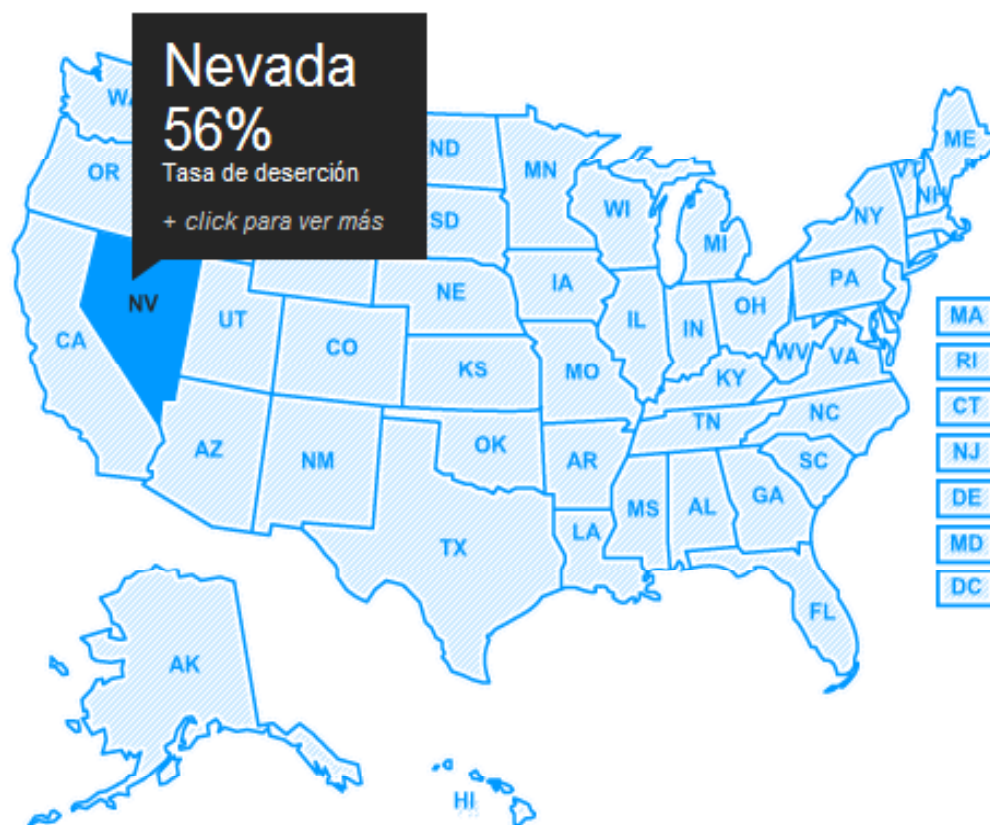
A donut chart with a blue segment representing 25% completion. In the center of the chart is a white silhouette of a student sitting at a desk and writing.

Grupo Étnico	Porcentaje
Caucásico	22%
Hispanico	42%
Afro-americano	43%
Asiático-americano	17%
Indígena de EE.UU.	46%

Datos desagregados por estado.

Seleccione un estado para ver la información estadística detallada.

NATIONAL STATISTICS



La información de los mapas es cortesía de Alliance for Excellent Education

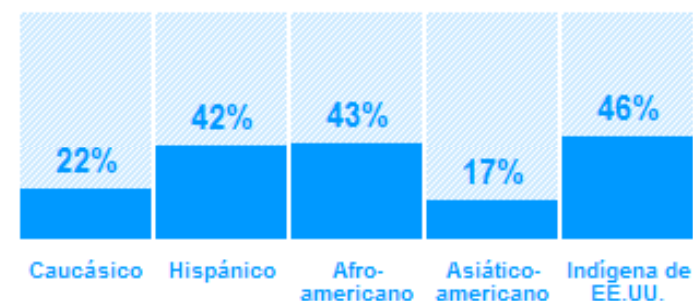
Estadísticas de National

Tasa de deserción

28%



Estadísticas de deserción



Fuente: <http://www.boostup.org/es/facts/statistics#national>.

Pregunta



Conozca los retos

Datos

Los estudiantes de secundaria que se gradúan tienen ____ veces más probabilidades de tener casa propia.

- ☐ 2
- ☐ 4
- ☐ 7
- ☐ 3

+ Enviar

Fuente: <http://www.boostup.org/es/facts/statistics#national>.

Pregunta

Correct!

Los estudiantes de secundaria que se gradúan tienen 7 veces más probabilidades de ser los propietarios de sus casas.

Datos

Los estudiantes de secundaria que se gradúan tienen ____ veces más probabilidades de tener casa propia.

☐ 2

☐ 4

☒ 7

☐ 3

+ Enviar

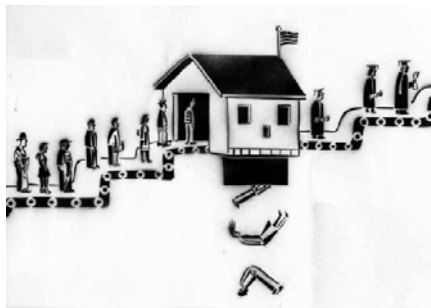
Fuente: <http://www.boostup.org/es/facts/statistics#national>.



“Regularly analyzing student data is the first step both for determining the scope of the dropout problem and identifying the specific students who are at risk of dropping out...”

NCES, IES Practice Guide, 2008

What is a dropout and how to calculate it?



The definition...



http://dpi.wi.gov/spr/drop_q&a.html

- *Beginning with 1998-99*, a dropout for the reported school term is a student who was enrolled in school at some time during that school term, was not enrolled at the beginning of the next school term (third Friday in September), has not completed high school, and does not meet any of the following exclusionary conditions:
 - transfer to another public school district, private school, or state- or district-approved educational program;
 - temporary absence due to expulsion, suspension or school-approved illness; death.
 - Students who completed the reported school term but who did not return as expected for the next school term are counted as dropouts for the next school term.

How to calculate dropouts?

THE MISSISSIPPI LEGISLATURE

The Joint Committee on

Performance Evaluation and Expenditure Review

<http://www.peer.state.ms.us/508.html>

- While several methods exist for calculating dropout and related rates, the cohort or longitudinal method is considered the best method because it shows the percentage of students who dropped out, completed, or graduated from a given graduating class during a specified period, usually ninth through twelfth grade or seventh through twelfth grade.
 - Dropout rates calculations
 - Longitudinal or cohort, Annual event, Status ([More info](#))
 - Graduation rates calculations
 - Traditional, cohort, averaged freshman ([More info](#))
 - Completion rates calculations
 - Census information

Work scope



LEY NUM. 165-2011

29 DE JULIO DE 2011

Para enmendar el Artículo 1.03 de la Ley Núm. 149 de 15 de julio de 1999, según enmendada, conocida como “Ley Orgánica del Departamento de Educación de Puerto Rico”, a los fines de ordenar al Secretario de Educación a proveer información al Instituto de Estadísticas de Puerto Rico para crear un Sistema de Detección Temprana de Desertores y rendir anualmente un “Reporte de Deserción Escolar” al Gobernador y a la Asamblea Legislativa.



“e. El Secretario rendirá anualmente, a partir de agosto de 2011, un “Reporte de Deserción Escolar en Puerto Rico”. Dicho Reporte será sometido al Gobernador de Puerto Rico, a la Asamblea Legislativa a través de la Secretaría de cada Cuerpo, y al Instituto de Estadísticas de Puerto Rico. Además, el Reporte estará disponible en la página electrónica en la red del Departamento de Educación”.

Law No. 165, 2011

Scope & Early steps

Law No.
165 of 2011

- Permanently designates the Institute as an authorized representative of the Puerto Rico Department of Education under the Family Education Rights Privacy Act (FERPA) for the purpose of releasing educational records to the Institute with personally identifiable information of students without the written consent of their parents.
- The goal of this designation is the development of an Early Warning System for the Identification of Potential School Dropouts to be used by the Puerto Rico Department of Education

Confidential
agreements

- Puerto Rico Institute of Statistics
- Puerto Rico Department of Education

Databases
provided by the
PRDoE

- Three (3) huge databases
 - *ALL* (Socio-demographics, absence and dropout information)
 - *PPAA DATA* (State assessments)
 - *STUDENT GRADES* (Courses descriptions and grades)

Methods

ALL Database

- Variables -

1. Student name
2. Student ID
3. Birth date
4. Gender
5. Ethnicity
6. Absence count
7. School name
8. School code
9. District name
10. Region
11. Primary impediment
12. Poverty level
13. Annual income
14. Grade level
15. Academic year
16. Enrollment date
17. Enrollment status
18. End of enrollment date
19. End of enrollment reason
20. Telephone numbers
21. Parents names



PPAA DATA Database

- Variables -

1. Student ID
2. School code
3. School name
4. Grade
5. English attempted
6. English scale score
7. English proficiency
8. Math attempted
9. Math scale score
10. Math proficiency
11. Science attempted
12. Science scale score
13. Science proficiency
14. Spanish attempted
15. Spanish scale score
16. Spanish proficiency
17. Academic year
18. Academic year description



STUDENT GRADES Database

- Variables -

1. Student ID
2. School code
3. School name
4. Academic year description
5. Course number
6. Course description
7. NOTA (final grade)

General Description

Databases = 3

- Six years: 2006-2007 to 2011-2012
- Rows: 3,437,302

ALL

Student name
Student ID
Birth date
Gender
Ethnicity
Absence count (Only for 2011-2012)
School name
School code
District name
Region
Primary impediment
Poverty level
Annual income
Grade level
Academic year
Enrollment date
Enrollment status
End of enrollment date
End of enrollment reason
Telephone numbers
Parents names

- Five years: 2006-2007 to 2010-2011
- Rows: 1,994,833

PPAA DATA

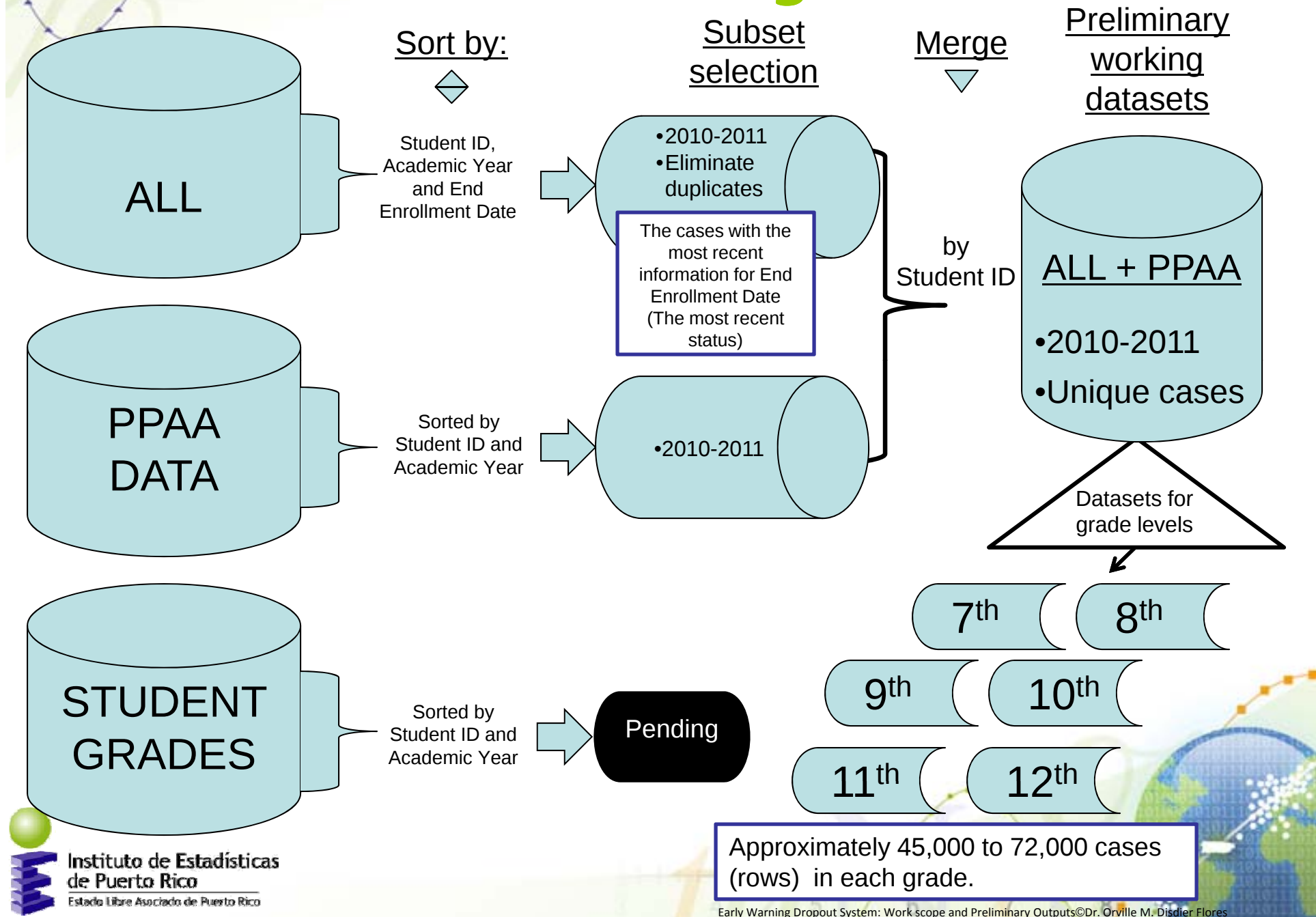
Student ID
School code
School name
Grade
English attempted
English scale score
English proficiency
Math attempted
Math scale score
Math proficiency
Science attempted
Science scale score
Science proficiency
Spanish attempted
Spanish scale score
Spanish proficiency
Academic year
Academic year description

- Six years: 2006-2007 to 2011-2012
- Rows: 8,993,026

STUDENT GRADES

Student ID
School code
School name
Academic year description
Course number
Course description
NOTA (final grade)

Data Management



Dropout Definition

- End Enrollment Reason codes used -

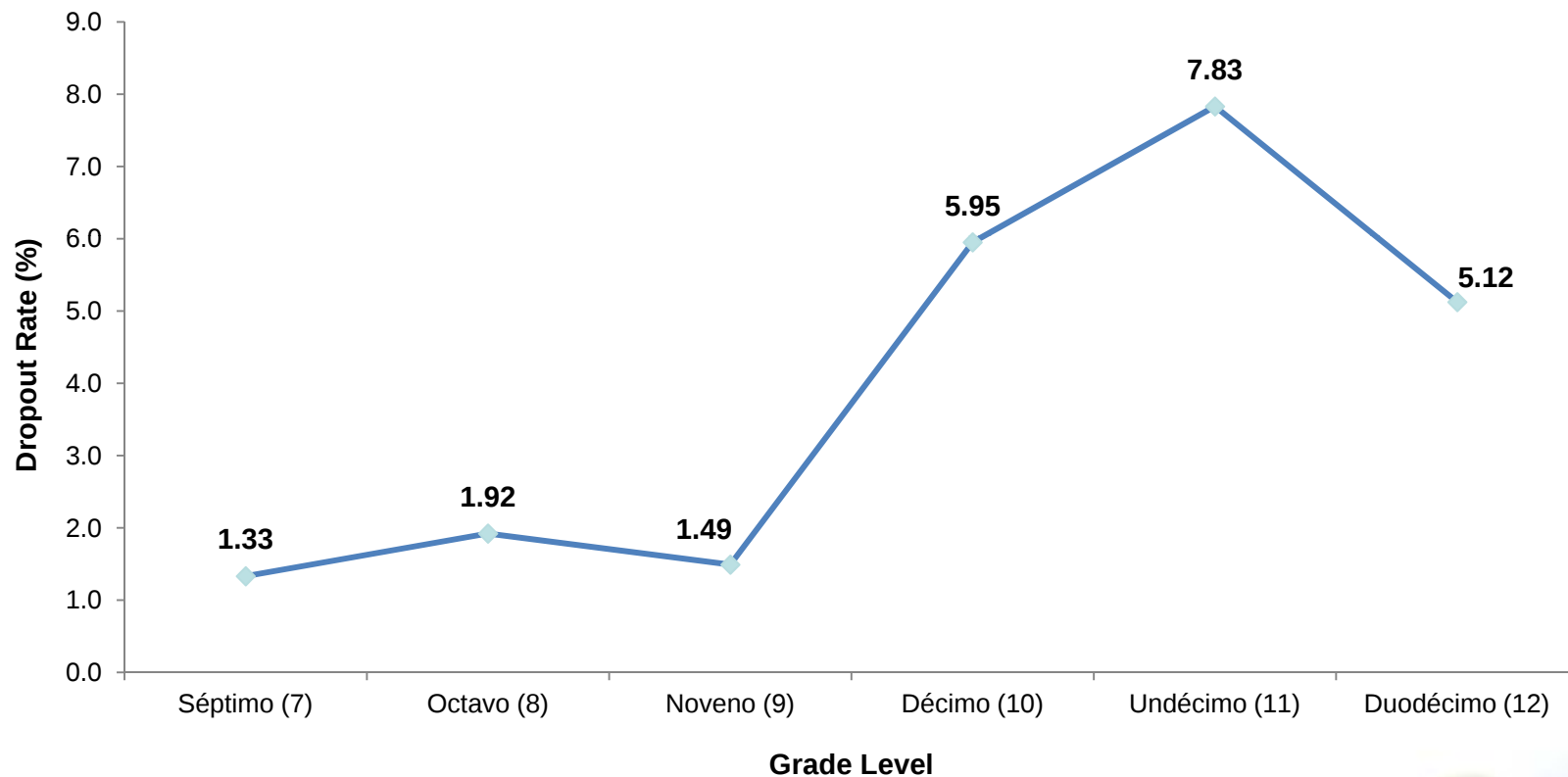
- D14 – Estudiante no se presentó a la escuela, paradero desconocido.
- T6 – Se transfiere a escuela nocturna o de adultos del sistema de educación pública.
- T5 – Se transfiere a escuela privada en otro distrito.
- T4 – Se transfiere a escuela privada en mismo distrito.
- V5 – Durante el verano se movió a escuela privada en otro distrito.
- B12 – Otro
- V4 – Durante el verano se movió a escuela privada en mismo distrito.
- V6 – Durante el verano decidió matricularse en una escuela nocturna o de adultos.
- B5 – Evitar fracaso académico
- T8 – Se transfiere a una institución disciplinaria de rehabilitación o de otra índole.
- B4 – Ausencia excesivas
- B13 – Baja para estudiar en *Home Schooling*.
- B1 – Dejó escuela para irse a trabajar.
- B7 – Asumir responsabilidades del hogar.
- B9 – Embarazo
- V14 – Durante el verano se transfiere a *Home Schooling*.
- V8 – Durante el verano se transfiere a una institución disciplinaria de rehabilitación o de otra índole.
- B6 – Faltas disciplinarias
- B8 - Matrimonio



Instituto de Estadísticas
de Puerto Rico
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Very preliminary results

Figure 1. Estimated dropout rates for the public system by grade, Puerto Rico 2010-2011



Most frequent (first 3) dropout reasons by grade level, Puerto Rico, 2010-2011

7th

T5 - Se transfiere a escuela privada en otro distrito

T4 - Se transfiere a escuela privada en mismo distrito

T6 - Se transfiere a escuela nocturna o de adultos del Sist. Educación Pública

8th

T6 - Se transfiere a escuela nocturna o de adultos del Sist. Educación Pública

T5 - Se transfiere a escuela privada en otro distrito

T4 - Se transfiere a escuela privada en mismo distrito

9th

T6 - Se transfiere a escuela nocturna o de adultos del Sist. Educación Pública

T5 - Se transfiere a escuela privada en otro distrito

T4 - Se transfiere a escuela privada en mismo distrito

10th

T6 - Se transfiere a escuela nocturna o de adultos del Sist. Educación Pública

T5 - Se transfiere a escuela privada en otro distrito

T4 - Se transfiere a escuela privada en mismo distrito

11th

T6 - Se transfiere a escuela nocturna o de adultos del Sist. Educación Pública

D14 - Estudiante no se presentó a la escuela, paradero desconocido

T5 - Se transfiere a escuela privada en otro distrito

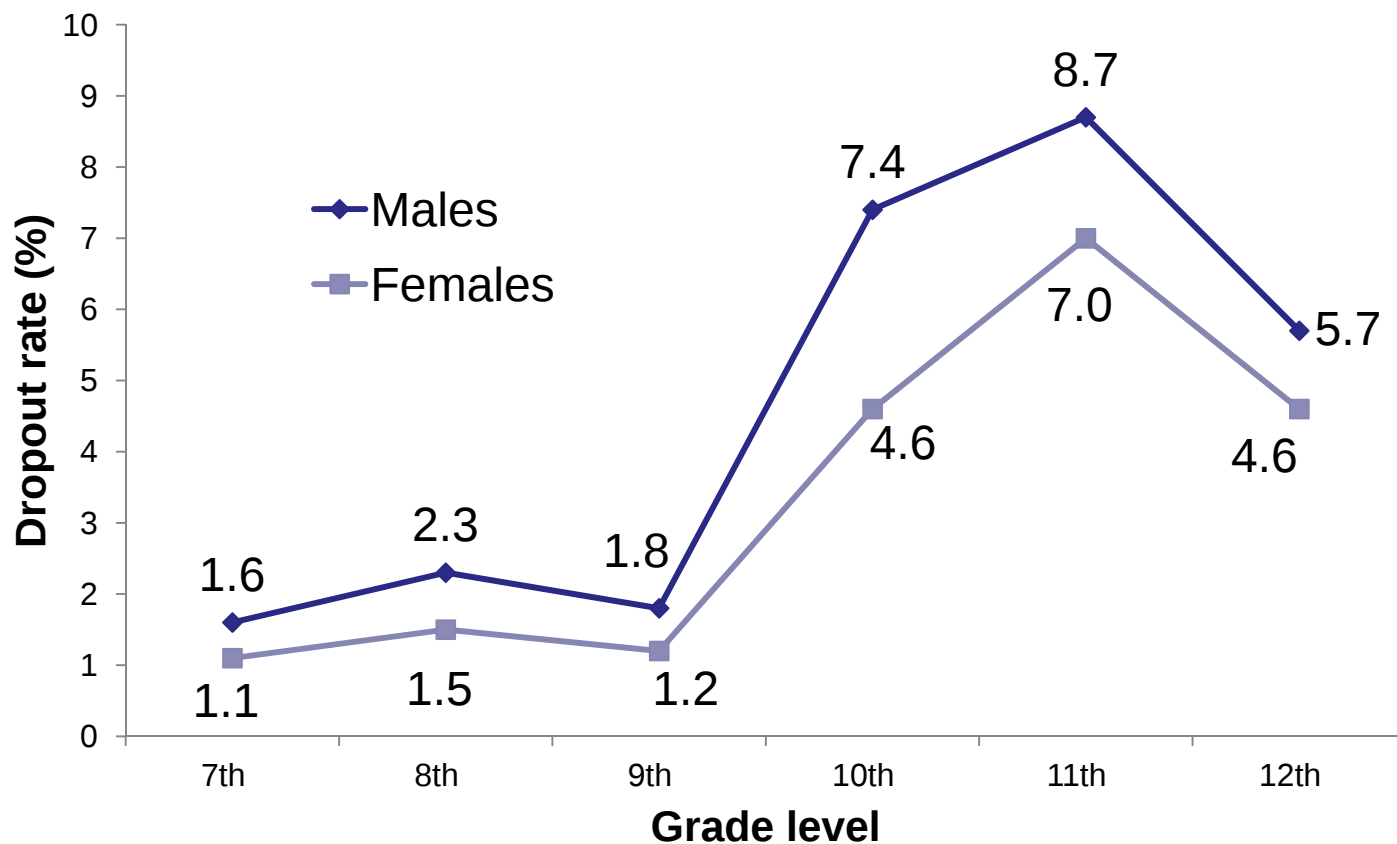
12th

T6 - Se transfiere a escuela nocturna o de adultos del Sist. Educación Pública

D14 - Estudiante no se presentó a la escuela, paradero desconocido

T5 - Se transfiere a escuela privada en otro distrito

Figure 2. Dropouts rates (%) by grade and sex, Puerto Rico 2010-2011



Grade level	Sex		Difference	Statistically significant?
	Male	Females		
7 th	1.6	1.1	0.5	P=0.053
8 th	2.3	1.5	0.8	P<0.001
9 th	1.8	1.2	0.6	P<0.001
10 th	7.4	4.6	2.8	P<0.001
11 th	8.7	7.0	1.7	P<0.001
12 th	5.7	4.6	1.1	P<0.001

Estimated dropout proportions by sex in each grade, public system, Puerto Rico 2010-2011

Figure 3. Seventh (7th) grade

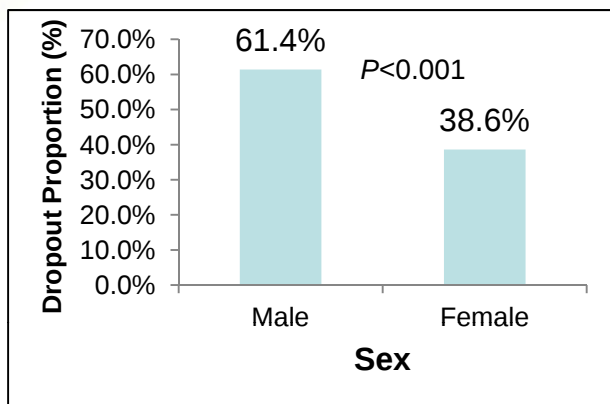


Figure 4. Eighth (8th) grade

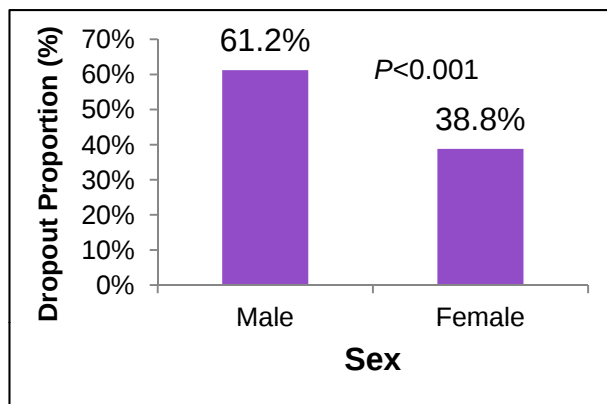


Figure 5. Ninth (9th) grade

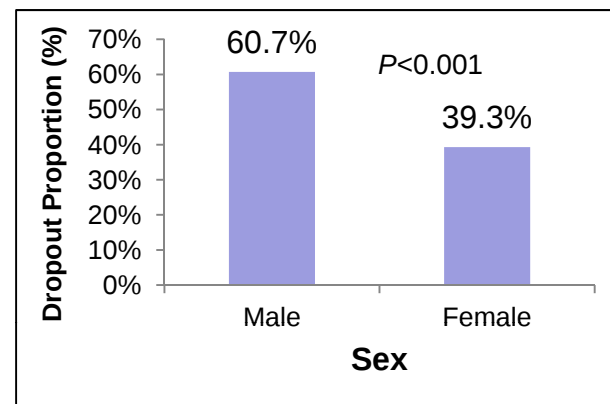


Figure 6. Tenth (10th) grade

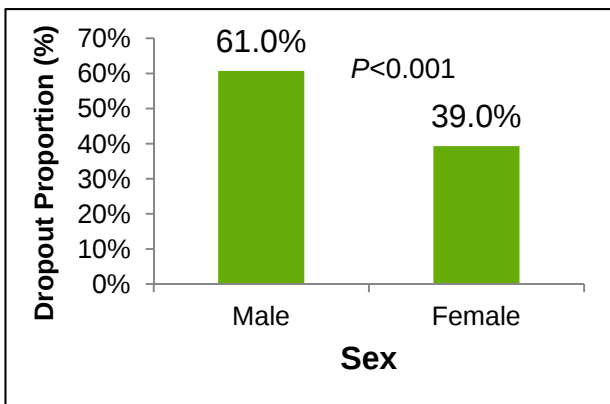


Figure 7. Eleventh (11th) grade

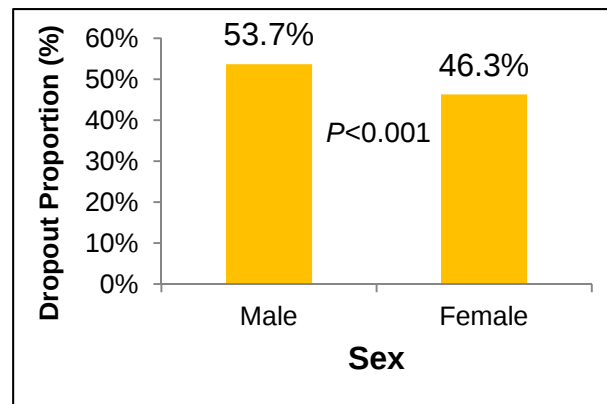


Figure 8. Twelfth (12th) grade

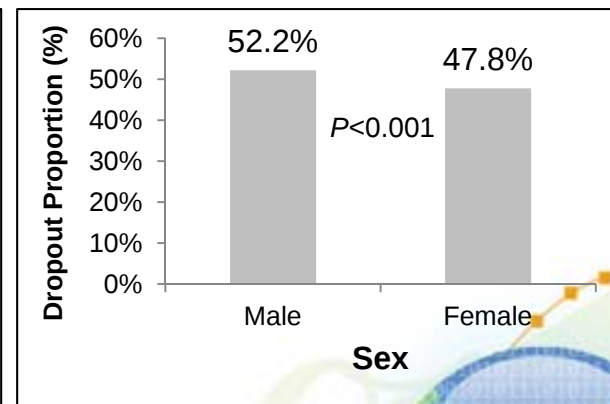
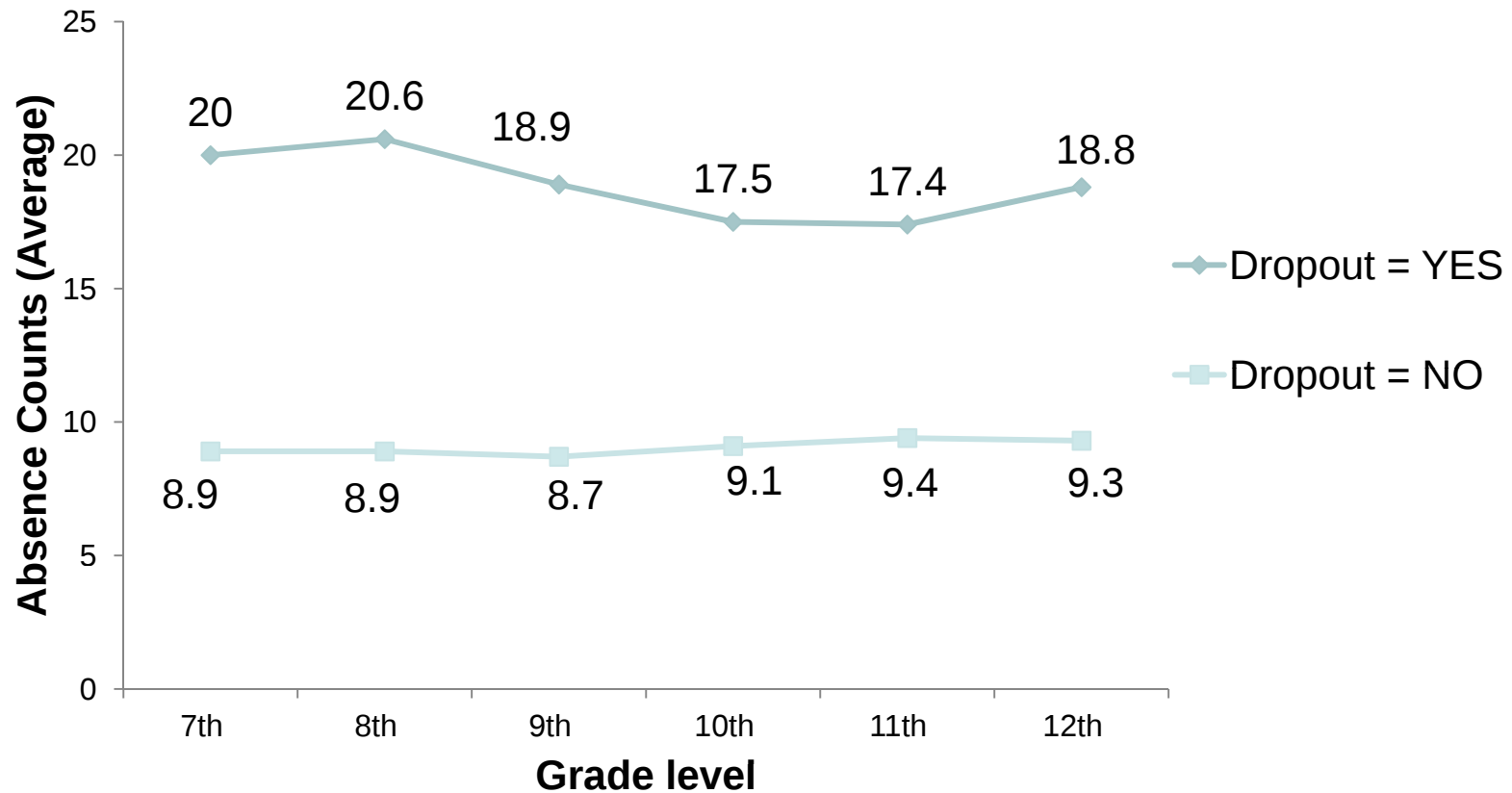


Figure 9. Annual family income by dropout status, Puerto Rico 2010-2011

Grade level	Average (\$)		Median (\$)		Statistically significant?
	Dropout= Yes	Dropout= No	Dropout= Yes	Dropout= No	
7 th	11,909	13,592	7,200	9,000	P=0.053
8 th	10,230	14,512	6,396	10,000	P<0.001
9 th	9,652	15,521	6,600	10,944	P<0.001
10 th	10,737	16,522	7,000	12,000	P<0.001
11 th	12,676	17,639	9,000	12,480	P<0.001
12 th	13,536	17,879	9,900	12,834	P<0.001

Figure 10. Absence counts by dropout status, Puerto Rico 2011-2012



Grade level	Average		Statistically significant?
	Dropout= Yes	Dropout= No	
7 th	20.0	8.9	P<0.001
8 th	20.6	8.9	P<0.001
9 th	18.9	8.7	P<0.001
10 th	17.5	9.1	P<0.001
11 th	17.4	9.4	P<0.001
12 th	18.8	9.3	P<0.001

Figure 11. Academic achievement in Math by dropout frequency, Puerto Rico 2010-2011

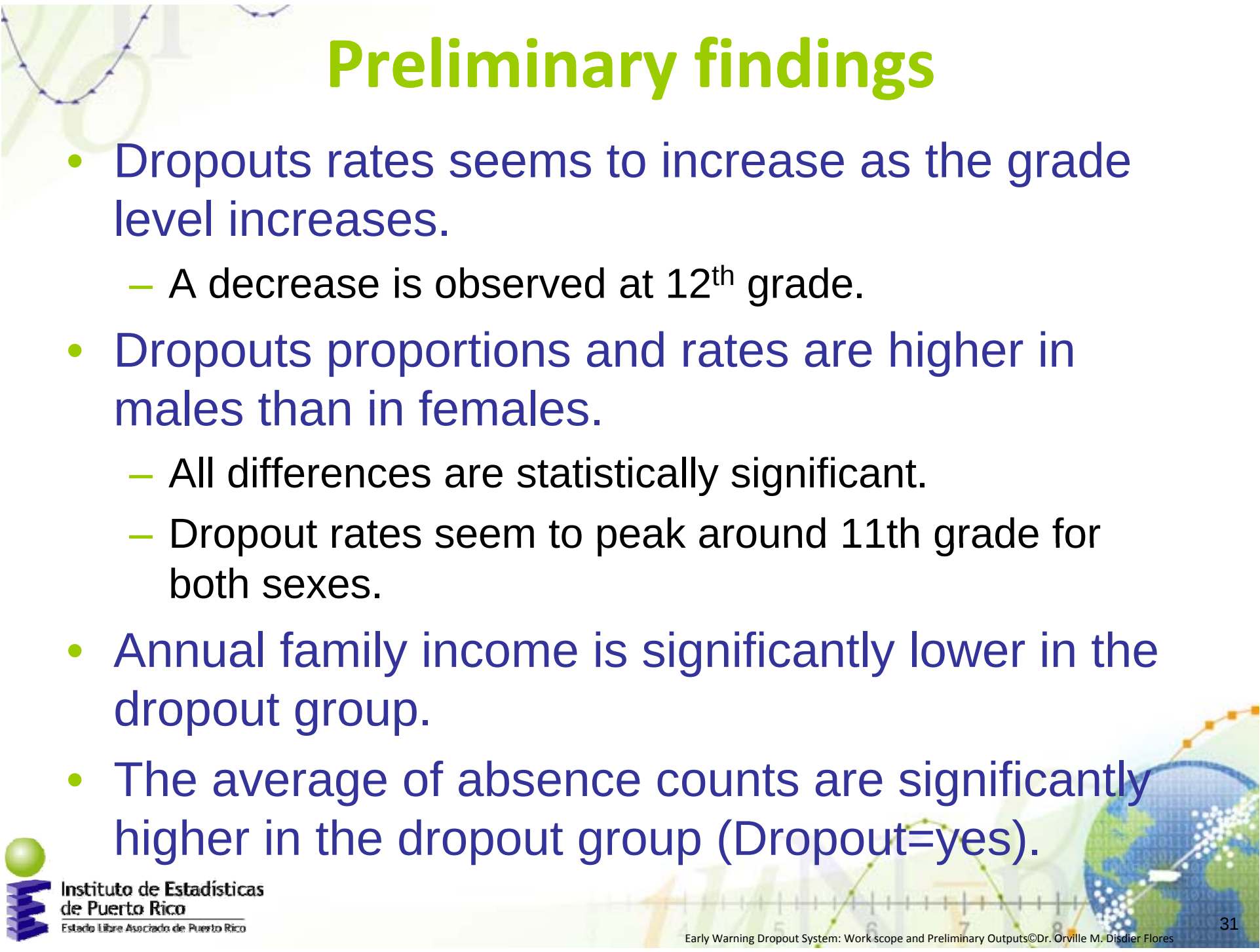
MANY MISSING DATA FOR DROPOUTS RELATED TO PPAA!

Grade level	Dropout frequency (%)		Statistically significant?
	Pre-basic / Basic	Proficient / Advance	
7 th	0.19	0.22	NO
8 th	0.30	0.22	NO
9 th	NA	NA	NA
10 th	NA	NA	NA
11 th	0.81	0.39	P=0.026
12 th	NA	NA	NA



Pending analysis

- Students grades and courses
- Several years transversal and cohort comparisons
- Multivariate analyses
 - Logistic regressions
 - Best regression model
- Others



Preliminary findings

- Dropouts rates seems to increase as the grade level increases.
 - A decrease is observed at 12th grade.
- Dropouts proportions and rates are higher in males than in females.
 - All differences are statistically significant.
 - Dropout rates seem to peak around 11th grade for both sexes.
- Annual family income is significantly lower in the dropout group.
- The average of absence counts are significantly higher in the dropout group (Dropout=yes).



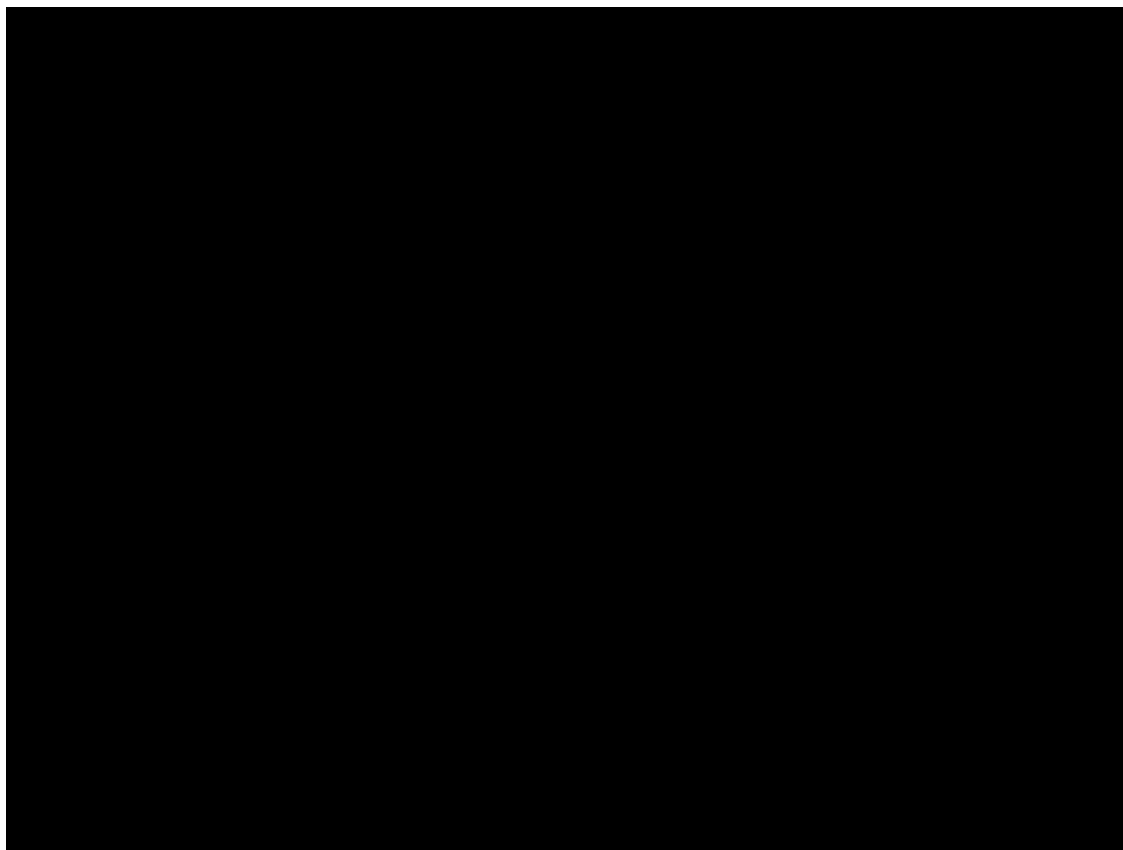
“Researchers agree that student absences, grade retention, and low academic achievement are indicators for dropping out.... the move from middle school to high school are difficult... Low socioeconomic status and behavioral problems are also known risk factors...”

NCES, IES Practice Guide, 2008



“...students who are at risk of dropping out
... should be considered for extra services
or supports...”

NCES, IES Practice Guide, 2008



Source: <http://www.youtube.com/watch?v=IhflWZ0ndQ8&feature=relmfu>.

Questions?

Comments?

Contact Information

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Exhibit A: Advantages and Disadvantages of the Primary Methods of Calculating Dropout Rates

Type of Dropout Rate	Method of Calculation	Advantages	Disadvantages
Longitudinal or Cohort	divide the number of students who drop out by the number in the original class, adjusted for transfer students; while a cohort is usually measured from the 9th grade through the 12th grade, it can also be measured from the 7th grade through the 12th grade	+the method is most consistent with the public's perception of dropouts	-states may not have information systems to track individual students as they progress from grade to grade
		+accounts for students who leave school one year and return later	-absent of information systems, cohort rates often are estimated based on a sample of students or projected based on "annual" dropout rates
		+accounts for students who are retained in grade nine but stay in school and graduate later than their original classmates	
Annual Event	percentage of students who are enrolled in May or June who do not graduate and do not return to school in September or October	+easy to calculate	-only includes students who drop out each year; it may understate the dropout problem over four years
		+a practical way to determine the number of students who leave school each year	-the calculation is affected by the range of grade levels used to compute the rates
Status	percentage of a particular age group who are not enrolled in school and who do not have a high school diploma	+may be the most appropriate rate for comparing state results and for determining changes over time	-like all estimates based on samples, the percentages have some errors
			-not available for individual schools and school districts

SOURCE: Southern Regional Education Board, Educational Benchmarks 2000 Series, *Reducing Dropout Rates*.

RETURN



Graduation Rate Calculations

There are three primary ways of calculating the graduation rate:

- *traditional graduation rate*—calculated by dividing the number of students receiving a traditional diploma in a given school year by the number of students who were enrolled in the ninth grade four years earlier. This rate does not track individual students, but provides annual data for all students enrolled.
- *cohort graduation rate*—calculated in the same manner as the cohort dropout rate, with the numerator being the number of students in the cohort receiving a traditional diploma (rather than the number of students who dropped out); and,
- *averaged freshman graduation rate*—calculated by estimating the proportion of public high school freshmen that graduate with a regular diploma four years after starting the ninth grade.

RETURN

