Why 10th Graders Drop Out of High School: A Latent Class Analysis of Dropout Typologies

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Background & Purpose

- Dropping out of school has historically been viewed as a single monolithic category

- Emerging research indicates that there are multiple different "types" of dropouts*

- However, much of the past research has been based on qualitatively derived categories, or non-inferential statistics, such as cluster analysis.

- The purpose of this study is to examine the different typologies of high school dropouts from a large nationally representative sample using latent class analysis (LCA)

Bowers (2010), Janosz et al. (2000), Kronick & Hargis (1989), Lessard et al. (2008), Fortin et al. (2006), Menzer & Hampel (2009)

Overview of past dropout typologies categories

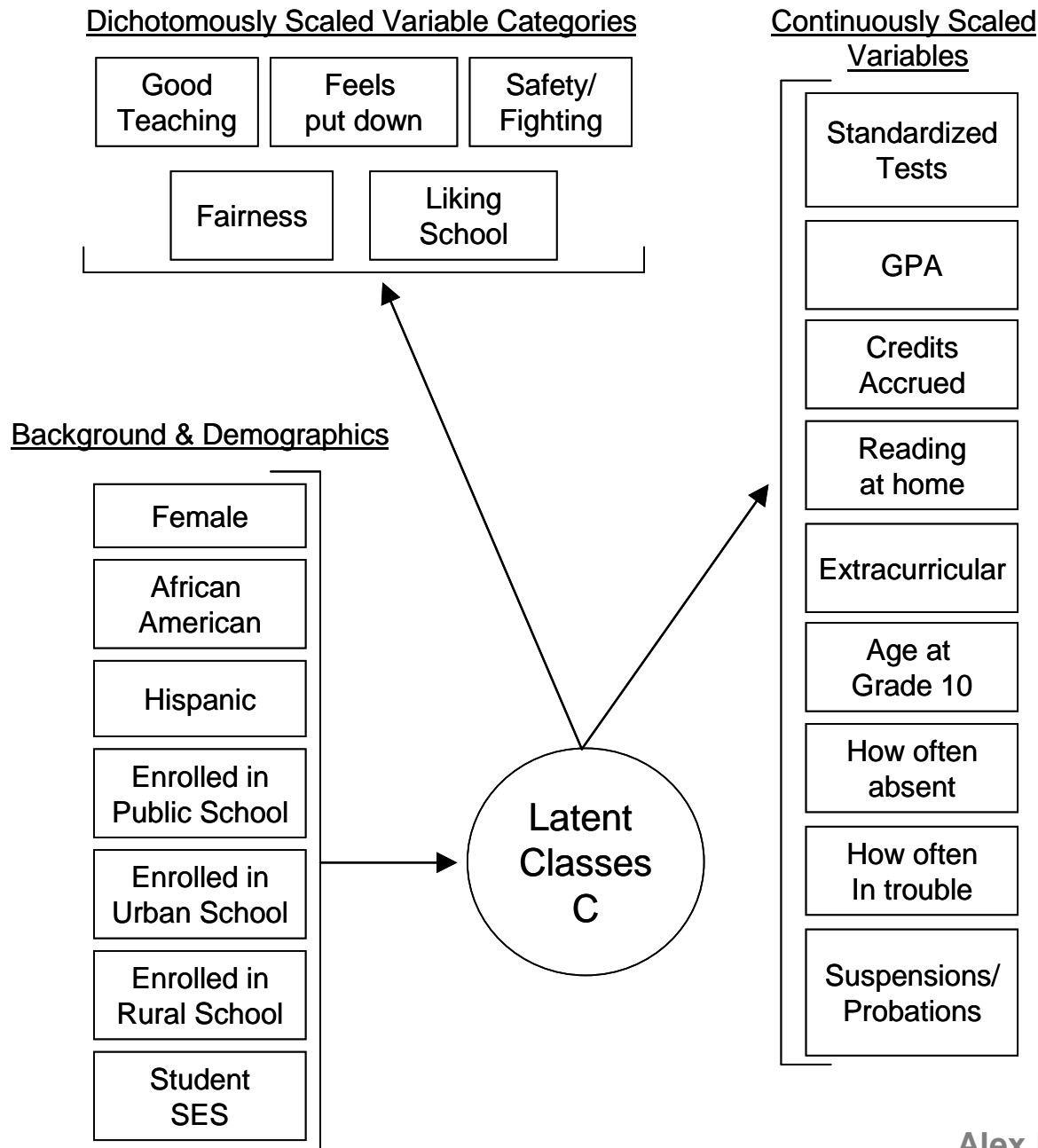|	Chronically Struggling with Academics	Bored with the Process	Disrupting School	Quiets
Janosz et al. (2000)	Low Achievers	Disengaged	Maladjusted	Quiets
Kronick & Hargis (1989)	Low-Achieving	High Achiever Pushouts	Low-Achiever Pushouts	Quiet Dropouts
Lessard et al. (2008)	Never Being in the Game	Dabbling in the Margins/Turning Away	Sabotaging the Journey	Living Invisibly
Fortin et al. (2006)	School Adjustment Difficulty	Antisocial Covert Behavior	Social Adjustment Difficulty	Uninterested in School/Depressive
Menzer & Hampel (2009)	Struggler	Lackadaisical	Lackadaisical	Surprised/ Overwhelmed

Research Questions

- How many dropout typologies are significantly different from each other?

- What are the specific characteristics that identify the different typologies of dropouts?

- After dropping out, what do students report are the reasons that they dropped out two years later, and to what extent are these reasons associated with the different typologies?

Sample & Method

- Sample: Education Longitudinal Survey of 2002 (ELS:2002)
  - Survey of about 15,400 students in grade 10 in 2002 across about 750 high schools
  - Sample: n=1,470 students with evidence of a dropout episode prior to high school graduation.

- Method: Latent Class Analysis (LCA)
  - LCA using multi-nomial logistic regression within a structural equation mixture model (SEM)
  - LCA identifies the extent to which a distribution of survey responses fit to one distribution or multiple distributions (typologies)

Latent Class Analysis Model for Dropout Typologies

Dichotomously Scaled Variable Categories

Good Teaching · Feels put down · Safety/Fighting · Fairness · Liking School

Continuously Scaled Variables

Standardized Tests · GPA · Credits Accrued · Reading at home · Extracurricular · Age at Grade 10 · How often absent · How often In trouble · Suspensions/Probations

Background & Demographics

Female · African American · Hispanic · Enrolled in Public School · Enrolled in Urban School · Enrolled in Rural School · Student SES

Latent Classes C

Latent class analysis (LCA) results and fit indices

| Model	AIC	BIC	-Loglikelihood (-LL)	% Decrease in -LL	Lo-Mendell-Rubin Test for k-1 classes	p-value
One-class	123326.36	123624.01	61609.18	---	---	---
Two-class	87937.63	88350.27	43890.82	28.76	2346.14	0.001
Three-class	86864.78	87478.45	43316.39	29.69	1144.72	0.002
Four-class	85786.53	86601.24	42739.27	30.63	1178.23	0.764
Five-class	84109.25	85124.99	41862.63	32.05	1248.20	0.765

Responses of Three Typologies of Dropouts to Dichotomously Scaled Survey Items
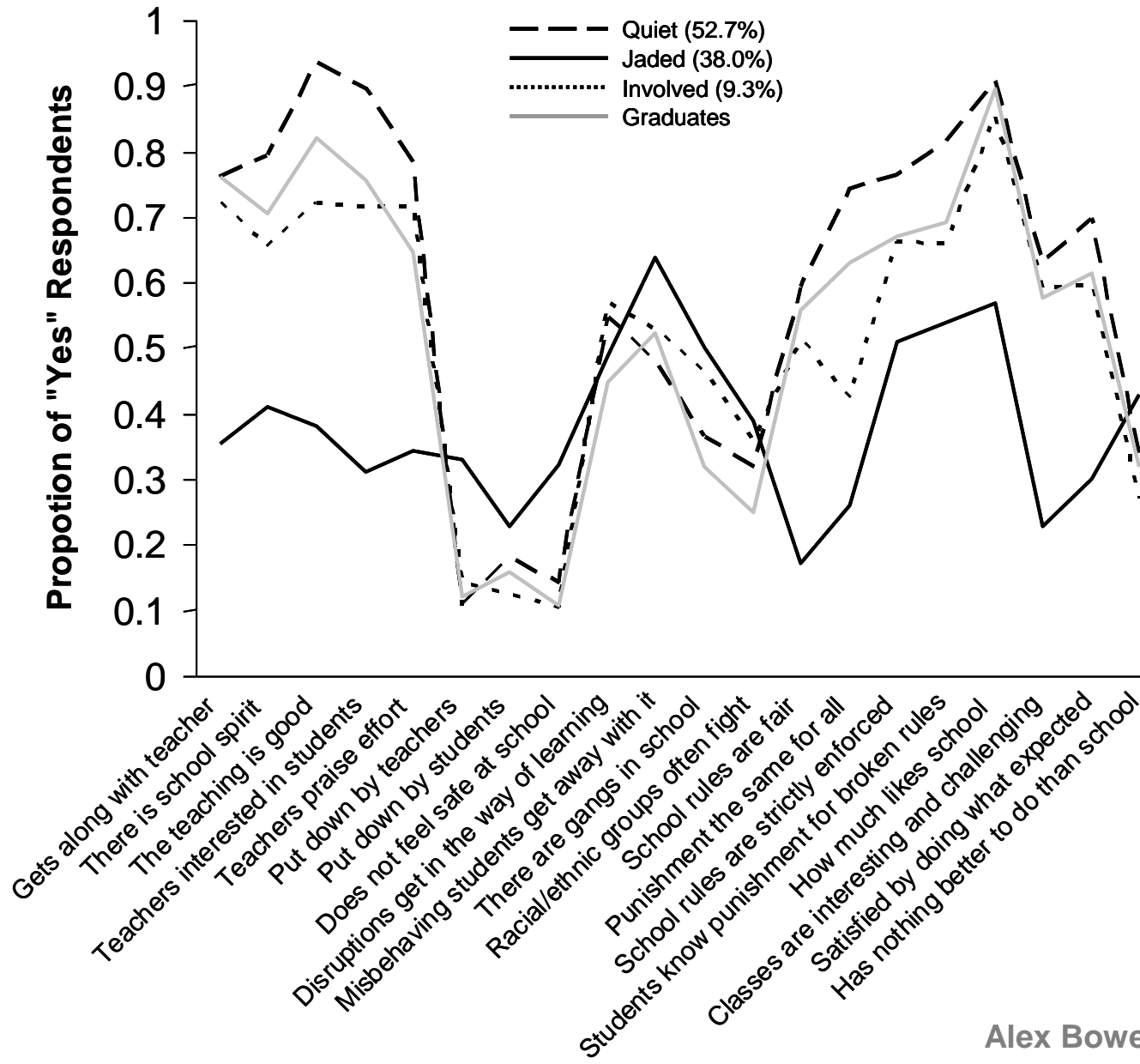
Distributions of Continuous Variables from the LCA Typologies
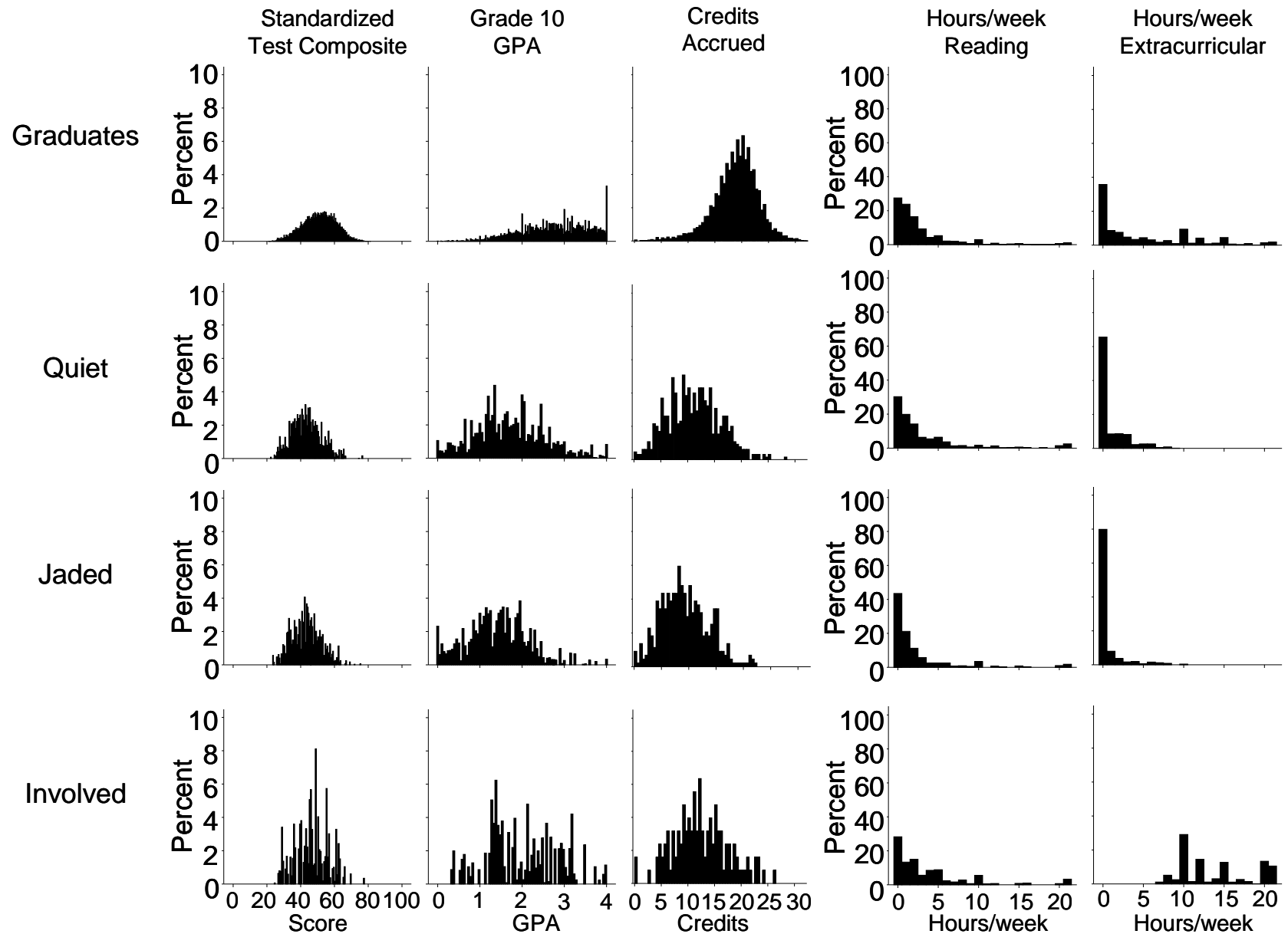
Distributions of Continuous Variables from the LCA Typologies
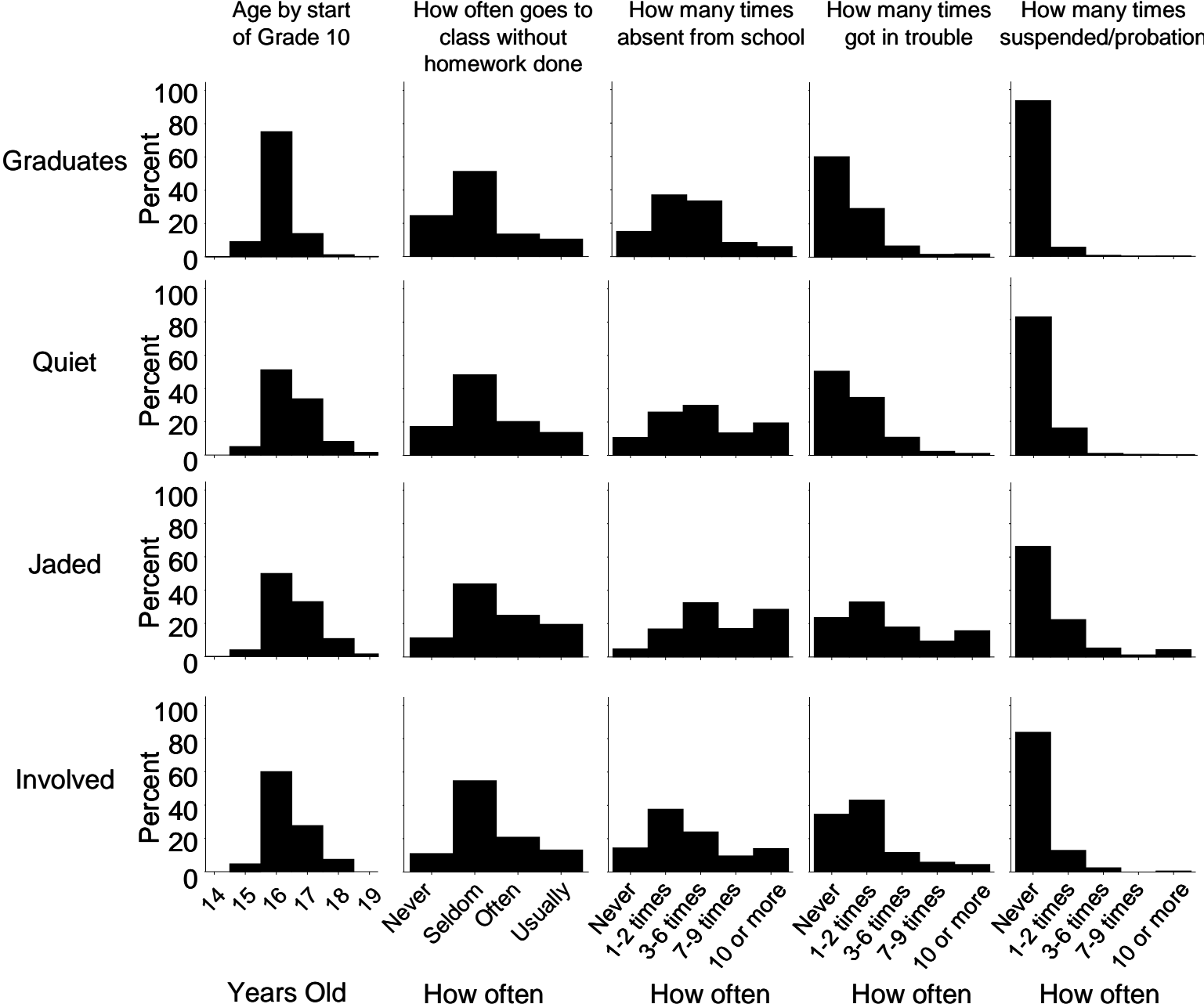
Percent responses to survey questions in 2006 about why the student dropped out of school, disaggregated by typology

Variable	Quiet (52.7%)	Jaded (38.0%)	Involved (9.3%)
Left school because (*n*=800)			
Got a job	25.9	23.8	18.3
Did not like school	32.9	**41.1**	26.8 *
Could not get along with teachers/students	23.7	**38.2**	21.1 ***
Pregnant/became parent	16.5	14.8	15.5
Had to support or care for family	23.7	21.7	21.1
Was suspended/expelled	**13.2**	23.9	22.5 ***
Did not feel safe	7.1	9.8	5.6
Did not feel belonged there	16.7	**26.5**	16.9 **
Could not keep up with schoolwork	30.0	30.4	22.5
Was getting poor grades/failing school	35.0	**42.9**	25.4 **
Could not work at the same time	22.1	20.9	19.7
Thought couldn't complete courses/pass test to graduate	25.0	**30.0**	14.1 *
Thought it would be easier to get a GED	40.3	44.1	29.6
Missed too many school days	41.4	42.7	**25.4** *
School completion/plans			
High school completion status in 2006 – full diploma, *n*=1470	18.6	**12.8**	21.6 **
Ever earned a GED, *n*=1470	28.7	35.3	**41.9** **
Ever applied to postsecondary school, *n*=1210	39.5	35.4	**57.4** ***
Has or expects to graduate H.S. or obtain a GED, *n*=1240	89.0	88.8	87.4
Expects to graduate from 4yr college or graduate degree program at some point in the future, *n*=1240	36.0	32.4	**46.2** *

Significant tests are Pearson chi-square: *$p \leq 0.05$, **$p \leq 0.01$, ***$p \leq 0.001$

Conclusions & Future Work

- Conclusions:
  - Identified three statistically significantly different dropout typologies: Quiet, Jaded, Involved
  - Latent Class Analysis provides a rich description of the different typologies of student responses before they dropped out
  - The 2006 follow-up survey validates the typology model
  - Use of LCA with a nationally representative sample allowed us to appropriately model the student survey responses and identify three typologies as the best model fit, controlling for background variables
  - Recommendations: Different dropout intervention strategies could be devised for the different type of student who drops out.

- Future work
  - Replicate using other datasets and contexts
  - Qualitative analysis of the different typologies

- Contact Info: