Law Students Are Different from the General Population: Empirical Findings Regarding Learning Styles

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It was a snowy day during a semester break when Prof. Robin Boyle was discussing teaching law students and learning styles with Dr. Andrea Honigsfeld, who has performed numerous empirical studies and has published many books and articles on teaching to the learning style of children and adults. Also at the table was Susan Rundle, president of Performance Concepts International (PCI). PCI develops and administers the Building Excellence (BE) Survey, an online learning style assessment survey (described below). Prof. Boyle was aware during this conversation that professors who teach in other graduate programs are fascinated by law students. Dr. Honigsfeld asked a question of Prof. Boyle, much like one she’s been called upon to answer before: “What are law students like as students? Are they really different from students in other disciplines?”

It was at this point in the conversation that Dr. Honigsfeld suggested conducting an empirical study to compare the learning styles of law students with other young adults—do they have similar learning styles? Although the question was a simple one, little did the researchers realize on that cold New York day that the empirical study would involve data compilation from several schools around the country, as far south as sunny Florida. The results would evolve over the next couple of years.

1 Special thanks to Dr. Rita Dunn, Professor, Division of Administrative and Instructional Leadership, and Director of the Center for the Study of Learning and Teaching Styles, St. John’s University; Susan M. Rundle, President, Performance Concepts International, Danbury, Conn.; Dr. Edward Stockham and Jody Cenzano, Rochester, N.Y.; and Alison Weintraub, student at St. John’s University School of Law.

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I. The Study Design

The first step in answering the question was to compile data on the learning styles of law students. Prof. Boyle had been assessing the learning styles of students at St. John's University School of Law since the mid-1990s. For purposes of this study, Prof. Boyle contributed, with the assistance of a statistician and staff at PCI, data comprising of students' self-assessment of their learning styles. The BE Survey was the assessment tool used for this study for all sample populations. The St. John's population included students from various programs in both the day and evening divisions: first-year, upper-level, and the Academic Support Program. The data spanned the years 2003 to 2006. Prof. Jeffrey Minneti, from Stetson University College of Law, with the assistance of PCI, contributed to the law school data profile by providing results of his students' answers to the BE Survey, which the entering class took during orientation. Prof. Minneti provided data from Stetson generated from students entering in its part-time class in fall 2006 and entering in its full-time class in spring 2007. The data from both schools provided a healthy profile of the learning style of law students (the Law Student Population).

The demographics of Stetson and St. John's were similar in some ways, yet different in other ways. During the time period in which we collected the data, both law schools had approximately 1,000 law students and both had full-time day and part-time programs. The schools were similar in race and ethnicity—both were primarily Caucasian with similar percentages of persons of color.

As for differences, St. John's is in the Northeast, whereas, Stetson is in the Southeast. St. John's law school is part of a larger university and is located in an urban geographical area—Queens, N.Y.; Stetson's law school is a stand-alone school with its campus in Gulfport, Fla. The median student age was lower at St. John's than at Stetson. In the populations studied, the median Law School Admission Test (LSAT) score was slightly higher at St. John's, but the median college GPA ranges were similar. There were more females in the Stetson classes studied than in the St. John's classes.

PCI and Dr. Honigsfeld randomly selected 95 students' BE profiles from the two law school subsets, arriving at the Law Student Population for

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4 Dr. Edward Stockham, a consultant to PCI.

5 Jody Cenzano, an employee of PCI.

6 At St. John's, students in the Academic Support Program are those with a law school grade point average (GPA) of 2.2 and below, as well as students who come to the law school through the Summer Institute program. The Summer Institute is offered to law school applicants with low application predictors; if the Summer Institute student earns a B-minus or better in the intensive doctrinal course, admission to the law school is offered.

7 Prof. Boyle received approval from her university's Institutional Review Board.

8 Prof. Minneti received approval from his school's Institutional Review Board.

9 St. John's had approximately 290–350 law students per year, consisting of both day and evening students. Stetson had approximately 750 students in total in its full-time program and 250 students in its part-time program.

10 The ethnicity of St. John's University law classes studied ranged from 20–27 percent of Hispanic, African-American, and Asian descent. At Stetson, the law classes studied ranged from 16–28 percent of Hispanic, African-American, Asian, and Puerto Rican descent.

11 At St. John's the median age of the law students studied was 23, in contrast with the median ages of the classes studied at Stetson, which were 26 and 29.

12 The median LSAT score was 160 at St. John's, which was slightly higher than the 154 median LSAT score at Stetson. The median college GPA ranges were similar between the two schools: for St. John's the median college GPA ranged from 3.42–3.53 and for Stetson, the group's median college GPA was 3.4.

13 In the classes studied at Stetson, the percentages of female students ranged from 52–58 percent, whereas at St. John's, depending upon the year, the percentage of female students ranged from 46–47 percent.
We selected the Dunn and Dunn Model for our empirical study because it is comprehensive in design.\textsuperscript{18} The Dunn and Dunn Model emerged from cognitive-style theory, brain-lateralization theory, and practitioners’ observations.\textsuperscript{19} Over the past three-and-a-half decades, extensive research has been conducted with this model, which currently includes 26 learning-style elements.

Researchers at more than 135 institutions of higher education throughout the world have engaged in studies using the Dunn and Dunn Model.\textsuperscript{20} These researchers have explored connections between individual preferences and their impact upon learning.\textsuperscript{21}

One of the learning-style assessments of the Dunn and Dunn Model is BE.\textsuperscript{22} When students took BE, their learning styles were measured according to 26 variables subdivided into six stimulus strands: Perceptual, Psychological, Physiological, Emotional, Environmental, and Sociological.\textsuperscript{23} Although the


\textsuperscript{20} See the Learning Styles Web site at <www.learningstyles.net> (last accessed on Jan. 11, 2009).

\textsuperscript{21} Researchers worldwide have conducted numerous studies to determine relationships between a number of the learning-style preferences and academic achievement. See, e.g., Andrea Honigsfeld, The Learning Styles of High-Achieving and Creative Adolescents in Hungary, 15(1) Gifted and Talented Int’l 39 (2000); Practical Approaches to Using Learning Styles in Higher Education (Rita Dunn & Shirley A. Griggs, eds., 2000).

\textsuperscript{22} Another tool that other researchers have used is the Productivity Preference Survey. See, e.g., Boyle & Dunn, supra note 3, at 223.

\textsuperscript{23} The variables are further described below within the findings section.

this empirical study. The Law Student Population group profile resembled the class learning-style profiles that Prof. Boyle had collected in prior years from St. John’s.\textsuperscript{14} These profiles were also similar to class profiles drawn in later years by both law schools. Prof. Boyle continues to assess law students at St. John’s each semester in the part-time, full-time, and Academic Support programs;\textsuperscript{15} in the spring of 2008, Profs. Minneti and Catherine Cameron at Stetson administered the BE inventory to its entering class.\textsuperscript{16} The consistent BE profiles of law school students confirm that the Law School Population data set was reliable.

In order to compare the law students to students in other schools of comparable age and education, PCI created a General Student Population data profile of young adults. PCI had been providing the BE learning-style assessment to college and graduate school professors around the country. For purposes of this study, PCI compiled a random sample of 95 students from college and graduate schools around the United States to create the General Student Population. PCI distributed the BE Survey to students at five schools and to their respective student populations.\textsuperscript{17} The age range of the subjects was 17–24. The education level achieved by subjects in this population was high school through post-graduate school. The General Student Population data set provided a cross-section of subjects that was comparable in age and education to law students.

\textsuperscript{14} See supra note 3.

\textsuperscript{15} Data from the BE Survey conducted at St. John’s is on file with PCI and with Prof. Boyle.

\textsuperscript{16} See Jeffrey Minneti & Catherine Cameron, Teaching Every Student: A Demonstration Lesson That Adapts Instruction to Students’ Learning Styles, 17 Perspectives: Teaching Legal Res. & Writing 161 (2009) (describing how the BE profile of students at Stetson taken after the empirical study was conducted was used for the basis of classroom instruction designed to reach the diverse learning styles of the class).

\textsuperscript{17} St. John Fisher College in Rochester, N.Y. (graduate level students); University of San Diego in San Diego, Calif. (graduate level students); Rochester Institute of Technology in Rochester, N.Y. (undergraduate and graduate level students); Ursuline College in Pepper Pike, Ohio (undergraduate and graduate level students); and Centenary College in Parsippany, N.J. (undergraduate and graduate level students).

\textsuperscript{18} We selected the Dunn and Dunn Model for our empirical study because it is comprehensive in design.\textsuperscript{14} The Dunn and Dunn Model emerged from cognitive-style theory, brain-lateralization theory, and practitioners’ observations.\textsuperscript{19} Over the past three-and-a-half decades, extensive research has been conducted with this model, which currently includes 26 learning-style elements.

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One of the learning-style assessments of the Dunn and Dunn Model is BE.\textsuperscript{22} When students took BE, their learning styles were measured according to 26 variables subdivided into six stimulus strands: Perceptual, Psychological, Physiological, Emotional, Environmental, and Sociological.\textsuperscript{23} Although the
Dunn and Dunn Model consists of multiple elements, individuals tend to be affected by six to 14 elements. Only those six to 14 elements comprise each individual’s learning style.24

BE relies upon self-assessment. It asks a series of questions designed to elicit responses from the student.25 The purpose of BE is to help individuals “learn new and complex material, increase productivity, develop new skills, and change behavior.”26

The responses for each element fall along a five-point Likert scale indicating a continuum such as this: strongly agree, agree, it depends, disagree, and strongly disagree.27 For example, if a student indicated in her responses to BE that she did not learn by listening, the report would indicate “strong” or “moderate” for the “less auditory” end of the auditory-element continuum. On the other hand, if a student indicated that she did learn by listening, the report would indicate “moderate” or “strong” on the opposite end of the auditory-element continuum. If the student’s response indicated that the element was nonessential to her learning, then she would see “it depends” checked off on the printout, indicating that the element “does not affect” her.28 As BE administrators explain, “Effective use of the element depends on the situation and an individual’s level of interest.”29

At the conclusion of the 20-minute online survey, all of our participants printed a comprehensive BE Learning and Productivity Style report of 18 to 20 pages in length. They also received a one-page graphic overview. The data for this study came from the information supplied by all of the participants when taking BE.30

BE was introduced to both the Law Student Population and the General Student Population primarily in classroom settings. All professors introduced students generally to the concepts of the Dunn and Dunn Model and BE. At some schools, this was achieved during the semester while school was in progress, and for others it was presented during orientation. Some students received information by mail, and thereafter met with their professors during conference time when students could discuss their BE reports.

III. Empirical Findings

Dr. Honigsfeld compared the two data sets—the Law Student Population versus the General Student Population. The results of our empirical study showed that the learning styles of the students in the law schools differed significantly from those in the college and graduate schools for 14 different elements of the 26 elements studied.31

We are mindful of the pitfalls of stereotyping. We do not intend to dissuade anyone from applying to law school on account of their learning-style assessment data, nor do we intend to minimize the contributions and potential success of current law students who are outside the profile of the majority of students. Instead, we offer these data and their comparisons for purposes of intellectual curiosity with pedagogical pursuits.

Dr. Honigsfeld calculated participants’ average scores for each of the 26 elements as indicated on the BE profiles. The findings indicate significant differences by student population (non-law school versus law school). The 14 elements are listed in Appendix A, infra, and described in text below. The categories below track the Dunn and Dunn model.

25 See Rundle, Building Excellence, supra note 2, at 6.
26 Id. at 2.
27 Id. at 11.
28 Id. at 10.
29 Id.
30 All data have been securely stored electronically by Performance Concepts International.
31 See Appendix A.
The Psychological category focuses on cognitive processing style, with Analytic learners on one end of the continuum and Global learners on the other.

The category of Perceptual Preferences includes five elements—Auditory, Visual Picture, Visual Text, Tactile/Kinesthetic, and Verbal (Internal) Kinesthetic. Statistical differences were noted between the two groups. The General Student Population tended to be stronger on the preference of Visual Picture (responsive to charts, graphs, tables, figures, and other graphic images as opposed to the printed text). For the Tactile/Kinesthetic perceptual strength (learn by manipulating resources with their hands, role playing, or experiencing), the General Student Population rated themselves as having stronger preferences than did the Law Student Population. However, the Law Student Population had a stronger preference for Verbal Kinesthetic tendencies (they learn by speaking while simultaneously listening).

The Psychological category focuses on cognitive processing style, with Analytic learners on one end of the continuum and Global learners on the other. A combination of the two, a person who is Integrated (processing equally well both globally and analytically—but only when interested in the content) appears in the middle of the same continuum spectrum. On the dichotomous scale of Global (comprehends the conceptual framework first) and Analytic processing (learns sequentially), the law students were significantly more Analytic than the non–law students.

The Physiological category includes elements that affect “one’s ability to remain energized and stay alert in learning and working environments.” The General Student Population reported a slight preference for more Mobility (needing breaks and opportunities to move and walk intermittently), whereas, the Law Student Population reported a slight preference for less Mobility. Concerning Time of Day, the Law Student Population was characterized by significantly stronger preferences for Late Afternoon and Evening hours (best time for studying or taking classes); whereas, the General Student Population preferred studying in the early morning hours.

The Emotional category focuses on how quickly one completes challenging and complex tasks; the elements include Motivation (internally or externally academically motivated) and Task Persistence. As for internally Motivated, the General Student Population was slightly stronger on average than the law students. As compared with the non–law students, the law students were significantly stronger preferred for single-task oriented (for staying with one task and avoiding multitasking).

The Environmental category includes such elements as sound, light, furniture design, and room temperature, which may have a positive or negative impact on students’ ability to concentrate. The impact of the environment on school climate and achievement in the K-12 context has been widely documented in the literature. According to the data in this study, the element of light significantly differentiated between the General Student Population and the Law Student Population: the General Student Population needs even brighter light than the Law Student Population.

How students prefer to learn in terms of groups or individually is categorized as Sociological. As compared with the Law Student Population, the General Student Population expressed stronger preferences both for Small Group instructional

32 When these data sets were analyzed, BE combined certain elements, but in a more recent version of BE, fall of 2007, elements were separated. Thus the current model depicts six perceptual elements: Auditory, Visual Text, Visual Picture, Tactile, Kinesthetic, and Auditory Verbal.
33 See Randle, Building Excellence, supra note 2, at 14–27.
34 See id. at 28–35.
35 See id. at 46–51.
36 See id. at 52–61.
37 See id. at 36–45.
approaches and Team Learning opportunities. On the other hand, as compared with the General Student Population, the Law Student Population expressed a moderate preference for less Variety. In other words, both groups tended to prefer predictable routines and patterns when learning new and difficult information; however, the law students needed significantly more predictability than the non–law students.

In summary, as compared with those in the General Student Population, the law students more strongly assessed themselves as Verbal Kinesthetic, Analytic, experiencing higher energy levels in the Late Afternoon/Evening, Single-Task preferred (as opposed to multitasking), less likely to learn in Small Groups or Teams than Independently, and preferring Routines and Patterns.

As compared with the Law Student Population, the General Student Population profiles indicated that college and graduate students more strongly assessed themselves as Visual-Picture oriented, Tactile/Kinesthetic, more in need of Mobility, requiring Bright Light to a greater degree, preferring Early Morning for studying and taking classes, Internally (academically) Motivated, and more likely to learn in Small Groups and Teams.

IV. Implications of the Study’s Findings

We inescapably draw some inferences concerning why law students are significantly different in their learning styles from the general population. Students who apply to law school may have been encouraged by their college professors, high-school teachers, moot-court advisers, or concerned family friends and parents. These encouraging individuals may have perceived traits that currently are prevalent in the learning-style profiles of the law students—such as thinking on their feet (thus the high verbal/kinesthetic scores of law students).

Those outside the doors of law school—college and graduate students—strongly prefer to learn with visual images such as pictures, graphs, charts, or diagrams. To be accepted into law school requires the test taker to have performed well on the LSAT, which is heavily text-oriented. There likely is a weeding out of visually-picture-preferenced students when the students who performed better on the entrance exam were ones who were more likely to be visually-text preferred.

In the majority of law schools, teaching methods for first-year law students are incongruent with students who prefer to learn by doing. It is not surprising to see a higher percentage of Kinesthetic students in the General Student Population than the Law Student Population. Perhaps Kinesthetic college students anticipated that law school would not suit their preferred learning style. It is also conceivable that Kinesthetic graduate students found a learning environment or profession that they perceived to be more suitable for them.

There are some surprises among the findings. One is the sheer number of statistical differences between the Law Student Population and the General Student Population. To have significant findings for 14 categories, and to have each with this level of significance, is unusual.40

The General Student Population, as opposed to the Law Student Population, was more Tactual. With the increasing use of laptops in the law school classrooms, and the recent discussions of this phenomenon,41 one would have assumed that law students are strongly tactual. Apparently, law

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41 The topic of students’ use of laptops in the classroom was so hotly debated on academic electronic mailing lists that it became the focus for the Association of American Law Schools co-sponsored workshop for the Sections on Teaching Methods and New Law Professors at the January 2008 Annual Meeting, titled “Attractions and Distractions: Student Use of Laptop Computers in the Classroom.” The AALS Annual Meeting schedule is posted on the AALS Web site at <www.aals.org> (last visited Jan. 11, 2009; see schedule for Jan. 3, 2008); see generally Karen Dybis, Adopting a No- Laptop Policy, The National Jurist, March 2006, at 22 (summarizing the key points of the debate); Robin A. Boyle & James B. Levy, The Blind Leading the Blind: What if They’re Not All Visual or Tactile Learners?, 22 Second Draft 6 (2008); Joan MacLeod Heminway, Caught In (or On) the Web: A Review of Course Management Systems for Legal Education, 16 Alb. L.J. Sci. & Tech. 265, 274 (2006) (“Technology is making its way into the legal classroom in a big way. The laptop computer has replaced the pen and notebook.”).
The findings of this empirical study inspired Profs. Minneti and Cameron at Stetson to create innovative ways to teach to the diversity of their students’ learning styles. We hope that readers will explore a variety of approaches in their classes as well.

**Appendix A. Fourteen Elements of the Law Student Population (LSP) Differed Significantly from the General Student Population (GSP)**

<table>
<thead>
<tr>
<th>Elements</th>
<th>Group with Stronger Preference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual Picture</td>
<td>Both moderately visual picture oriented, but GSP is much stronger on average</td>
</tr>
<tr>
<td>Verbal Kinesthetic</td>
<td>LSP is strongly verbal kinesthetic, GSP is moderately</td>
</tr>
<tr>
<td>Tactile/Kinesthetic</td>
<td>GSP is strongly tactile kinesthetic, LSP is moderately</td>
</tr>
<tr>
<td>Analytic/Global</td>
<td>On average both are moderately analytic, but LSP is much more</td>
</tr>
<tr>
<td>Mobility</td>
<td>GSP prefers slightly more mobility, LSP prefers less mobility</td>
</tr>
<tr>
<td>Early Morning</td>
<td>LSP has a slight preference for early morning hours, but GSP has a stronger (moderate) preference when compared to LSP</td>
</tr>
<tr>
<td>Late Afternoon</td>
<td>Both groups have a slight preference for late afternoon but LSP has a stronger preference than GSP</td>
</tr>
<tr>
<td>Evening</td>
<td>GSP has a slight preference for evening hours, but LSP has a stronger (moderate) preference when compared to GSP</td>
</tr>
<tr>
<td>Task Persistence</td>
<td>Both groups have a slight tendency to be single-task oriented but LSP has a stronger one</td>
</tr>
<tr>
<td>Motivation</td>
<td>Both groups are moderately internally motivated but GSP is more so when compared to LSP</td>
</tr>
<tr>
<td>Light</td>
<td>Both groups have a moderate preference for bright light, but GSP’s preference is stronger</td>
</tr>
<tr>
<td>Small Group</td>
<td>Both groups have a moderate preference for small group, but GSP has a stronger preference</td>
</tr>
<tr>
<td>Team</td>
<td>LSP has a slight preference and GSP has a moderate preference for team learning</td>
</tr>
<tr>
<td>Variety</td>
<td>GSP has a slight preference and LSP has a moderate preference for less variety (or more predictable routines and sociological arrangements)</td>
</tr>
</tbody>
</table>

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42 See Minneti & Cameron, *supra* note 16.

43 Prof. Boyle encourages readers to provide feedback about their in-class explorations by sending her an e-mail at boyler@stjohns.edu.