The

Gender Gap

IN COLLEGE

Maximizing the Developmental Potential of Women and Men

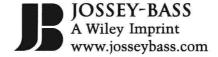
Linda J. Sax

Foreword by Alexander W. Astin and Helen S. Astin

The Gender Gap in College

Maximizing the Developmental Potential of Women and Men

Linda J. Sax



Copyright © 2008 by John Wiley & Sons, Inc. All rights reserved.

Published by Jossey-Bass A Wiley Imprint 989 Market Street, San Francisco, CA 94103-1741—www.josseybass.com

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, 978-750-8400, fax 978-646-8600, or on the Web at www.copyright.com. Requests to the publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, 201-748-6011, fax 201-748-6008, or online at www.wiley.com/go/permissions.

Readers should be aware that Internet Web sites offered as citations and/or sources for further information may have changed or disappeared between the time this was written and when it is read.

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

Jossey-Bass books and products are available through most bookstores. To contact Jossey-Bass directly call our Customer Care Department within the U.S. at 800-956-7739, outside the U.S. at 317-572-3986, or fax 317-572-4002.

Jossey-Bass also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Cataloging-in-Publication Data

Sax, Linda J., 1967-

The gender gap in college: maximizing the developmental potential of women and men / Linda J. Sax.

p. cm.—(Jossey-Bass higher and adult education series)

Includes bibliographical references and index.

ISBN 978-0-7879-6575-4 (cloth)

- 1. Sex differences in education—United States. 2. Sexism in education—United States.
- 3. Education, Higher—United States. 4. Educational equalization—United States. I. Title. LC212.92.S29 2008

378.1'9822-dc22

2008018500

Printed in the United States of America

HB Printing

10 9 8 7 6 5 4 3 2 1

The Gender Gap in College

The Jossey-Bass Higher and Adult Education Series

Foreword

Linda Sax has produced an encyclopedic volume comparing women's and men's development during the undergraduate years. We believe it is destined to become a classic in the higher education literature.

Sax's pioneering work marks a new phase in how the issue of gender has been treated in research on human development. Most of the early "stage" theorists ignored women altogether, basing their proposed developmental stages primarily on data collected from men. Subsequently, and partly as a consequence of the advent of the women's movement (when gender came to be recognized as a potentially important "independent" variable), researchers began to ask whether being a woman makes any difference in students' performance in college. In the third stage, research was undertaken using women-only samples in order to study women's experiences in depth, to provide information on women's development, and thus to close the information gap about gender and college.

Linda Sax's book has opened the door for the next stage of research, where environmental effects are examined separately for women and men. Her findings not only demonstrate that we can no longer afford to assume that women and men are affected in the same way by their undergraduate experience, but also suggest that future research that looks at other types of student diversity should employ similar refinements. Despite the complexity of the analyses, the book is clearly written and should be accessible to virtually all practitioners and policy makers in higher education.

While it has for some time been fashionable among educators to advocate for the individualization of instruction, researchers have to date produced remarkably little evidence to support such a policy, especially in the field of higher education. Practitioners who might be sympathetic to the notion of individualization have thus been left with little to go on beyond simple stereotypes. Sax's pioneering study represents a large first step toward remedying this lack of knowledge, and we can only hope that other researchers will follow suit.

It is true, of course, that researchers have done many studies of particular subpopulations—as defined by gender, age, race, social class, religious affiliation, and so on—but until now most of this research has been limited either to the subpopulation of interest or to simple descriptive comparisons of the characteristics of the different subpopulations. What is unique about Sax's approach is that she has gone the next step by directly examining the *interaction* between gender and a variety of college experiences, a major inquiry which allows her to address the fundamental individualization question: Do women and men respond differently to a given educational experience?

In their recent comprehensive review of the student development literature, Ernest Pascarella and Patrick Terenzini (2005) highlight the need for more research on what they call the conditional effects of college, the possibility that different types of students may respond very differently to our various policies and practices in higher education. We think it is fair to say that Sax's book represents by far the most comprehensive study ever done of the conditional effects of college on undergraduate students.

What is perhaps most remarkable about Sax's findings is the fact that more than half of the 584 different college effects that she identified are *not* the same for women and men! What this suggests, among other things, is that the growing community of scholars who study how college affects students should seriously consider looking at conditional effects as a matter of

course. Considering all of the potentially important conditions that have yet to be explored in any systematic fashion, there is clearly a great deal more work that remains to be done.

One of the major impediments to further research of this type, of course, is the data required: conditional effects cannot readily be identified without large and sophisticated databases. And the more different conditions we seek to examine—gender, race/ethnicity, social class, preparation level, and so on—the more subjects we need, especially if we choose to examine more complex *combinations* of conditions (e.g., gender within social class). Furthermore, in higher education in particular, there is also an almost limitless set of *institutional* conditions—type, size, selectivity, and so on—that can and probably should be studied. Again, the data requirements for such studies are considerable, and we can only hope that funding agencies will see fit to support the creation and maintenance of the kinds of databases that make such research possible.

As we were jointly reflecting on Sax's beautifully crafted final chapter 8—where she discusses the implications of her major findings—the persistent question for us was: When it comes to the issue of gender equity, are college women faring better today, given four decades of legislation, affirmative action, and consciousness raising? While her conclusions point to certain areas, such as college finances and faculty-student interaction, where significant questions of educational equity remain, the equity implications of many of her other findings are more complex. But we remain certain of one thing: If higher education faculty, staff, and policy makers familiarize themselves with the major findings and implications of this pioneering study, the cause of gender equity in American higher education will be well served.

Alexander W. Astin Helen S. Astin University of California Los Angeles

To my husband, Norman And our children, Samantha and Jeremy

Preface

The idea for this book came about over fifteen years ago, when I was a graduate student and just beginning to study the gender gap in college. At that time, I was trying to figure out what role gender had played in my own educational decisions and, in particular, my experiences in math and science. Up until college, I had always been a strong student in math. Ever since my mother taught me the basic principles of addition and subtraction, I was fascinated with numbers. My affinity for math lasted clear through my high school calculus course, and I had so much fun manipulating numbers that I actually looked forward to tests and quizzes. Though I was aware of purported gender differences in math ability, I naively thought those days were in the past. After all, among the top math students in my courses, there were always equal numbers of males and females. As a teenager in the 1980s, I assumed that the women's movement had indeed leveled the playing field; I never once thought of math as a male domain.

All this changed when I went to college. I remember enrolling in a calculus course my first year at the University of California, Berkeley. I found myself in a very large lecture hall, surrounded almost completely by men. I had essentially no interaction with the professor (I'm not sure if anybody did) and experienced a sense of invisibility even in the small discussion sections led by the teaching assistant. I began to notice that issues and questions were taken less seriously when posed by women than by men. My classmates seemed generally less

willing to share resources and study together than students in my social science classes. Due to the austere architecture of the math building, the competitive classroom climate, and the traditional lecture-heavy pedagogy, I began to feel that math was more cold and alienating, and less relevant to the real world, than I had previously thought. And I began to wonder whether my growing disinterest in math was a function of my own changing interests or was the result of being female in a maledominated field.

I ultimately found my comfort zone in sociology, history, and political science, where I not only learned about ongoing social inequities but also discovered the world of social science research. It was a revelation to see the ways in which quantitative methods could be used to study issues of broader societal importance. Ultimately, this led me to pursue a graduate degree in higher education at the University of California, Los Angeles (UCLA), where I focused on women's experiences in college math and science and learned that my experiences were more universal than I had thought. I learned through research that for many women, the likelihood of persisting in math and science was shaped, just as mine was, by their interactions with faculty, by their peers, and by a perception of science as being disconnected from larger societal concerns. All this raised the question of whether the forces influencing college student development would differ for women and men across a broader range of outcomes, not just those related to math and science.

This book is an opportunity to explore that question. It reveals the ways in which the impact of college is a function of students' gender and places the study of college impact within the larger discussion of the gender gap in higher education. It is designed to serve as a resource for campus practitioners, whose efforts ought to be mindful of women's and men's unique needs, and for higher education researchers, who are in a position to further demonstrate the ways in which college impact varies for different types of students. The approach taken in this book is

exclusively quantitative, based on the survey responses of literally millions of men and women over the past four decades. While there is strength in these numbers, we certainly cannot understand the role of gender and college student development through survey data alone. In fact, the qualitative works of Mirra Komarovsky, Ruthellen Josselson, and Marcia Baxter Magolda all demonstrate the richness of interviews as a means of revealing depth and teasing out the nuances of college women's development. Ideally, researchers will draw on both quantitative and qualitative modes of inquiry to address the Pandora's box of new questions raised in this book.

Acknowledgments

I am indebted to many individuals who provided various forms of assistance and support throughout this project. I want to start by acknowledging the time and intellect contributed by a number of graduate students over the years (many of whom have since moved on to faculty positions of their own). Every day I think how lucky I am to have worked with them and learned from them.

In the early phases of this book, I benefited from the wisdom and tenacity of Alyssa Bryant. Alyssa conducted an extensive review of the literature on gender differences in college impact and cowrote chapter 3 with me. She also played the chief role in constructing the longitudinal database used in this study. She chronicled every data decision that we made (and unmade . . . and remade), which turned out to be an invaluable resource as different students worked on the project over the years. Alyssa was part of a talented team of graduate students-including Frank DiCrisi, Casandra Harper, and Victor Saenz-who conducted the majority of the statistical analyses included in this book, as well as scores of other data manipulations that did not make it into this final version. Additional assistance creating tables and reviewing chapter drafts was provided by stellar UCLA

graduate students Jennifer Curley and Julie Park, as well as Dalia Gefen, a graduate student at the City University of New York who offered valuable feedback on chapter 5.

I also want to acknowledge the role that Casandra Harper played during the arduous process of writing up the findings. She read every draft chapter and provided the sort of critical feedback that one expects from seasoned scholars, not young graduate students. My working relationship with Casandra can be thought of as an adviser-advisee relationship turned on its head: just as I pushed and challenged her with her dissertation, she pushed and challenged me with this book.

In the book's final stages, I was fortunate to work with my newest graduate student, Casey Eznekier. Casey helped make substantial revisions to chapter 2, a chapter she coauthors, and provided technical and editorial support throughout the final months of writing. She has also been crucial in helping me consider the broader implications of my work for the field of student affairs.

Another key player on this project is Emily Arms, my valued colleague at the University of Southern California. She collaborated with me on the many iterations of chapter 2 and contributed a wealth of knowledge on gender issues in the broader educational context.

This study could not have been conducted without the participation of millions of college students in the Cooperative Institutional Research Program over the past forty years. Though they may not know it, their honest survey responses have contributed to hundreds of research studies and have helped improve the college experience for subsequent generations of students. I am also indebted to the professionals on each campus for their part in administering these surveys, and to Bill Korn of the Higher Education Research Institute for his wizardry in managing survey operations and for his part in creating the invaluable databases used in this book.

I want to thank David Brightman, my editor at Jossey-Bass, both for his patience and for pushing me to make the book more relevant to campus practice and generally more accessible to a wider audience. Instrumental in helping me accomplish that goal has been Kathy Wyer, director of the Sudikoff Family Institute for Education & New Media. As a Sudikoff fellow, I have benefited immensely from the editing and coaching Kathy has provided me. She has taught me strategies for making complex findings more accessible, for bringing the reader into the narrative, and for communicating and emphasizing key insights. Kathy's fresh perspectives and enthusiasm about this book have helped me remember why I started writing it in the first place.

I also want to express my gratitude to Sandy and Lena Astin, my longtime mentors whose collective work lays the foundation for the new questions raised in this book. They have cheered me on throughout this process and have provided insightful feedback about the big issues I encountered while doing the research. I am honored that they have written the Foreword for this book, thus solidifying the lasting legacy of their perspectives on issues of gender and college impact.

My appreciation also extends to Ernie Pascarella and Pat Terenzini, in part because their reviews of college impact research were an essential resource in writing this book, but also because they periodically reacted to my ideas for advancing the study of conditional college effects. Thank you, Ernie, for reading the first full draft of this manuscript! And special thanks go to Shannon Gilmartin, a friend and colleague whose wisdom and wit I have relied on over the years. Shannon was, in fact, the person who convinced me that this book *needed* to be written.

This project has taken much longer to complete than I had anticipated. Like many of the women represented in this book, I extend myself across a wide range of commitments: my work, my family, and my community. The countless hours that I have spent writing—and rewriting—this book have been interlaced with the time I have spent cheering on my children in sports,

volunteering in their school, taking oh-so-necessary family vacations, and meeting my friends for coffee. By attempting to maintain a sense of balance in my life, some things just take longer to finish. I am forever thankful to my friends for helping me stay connected and remember what really counts in life.

Most important, I am grateful to my family. I am lucky to have had a mother and father whose expectations of me were never influenced by gender-based stereotypes. They always encouraged me to pursue what I enjoy doing, and I have actually taken that advice. And my mother deserves special thanks for the time she spends taking care of my children while I am at work. I am truly blessed to have her in my life.

And finally, Norman and the kids. Norman played a major role in my academic development, first as my study partner in high school chemistry and calculus, and later as my husband, whose unwavering support and dry sense of humor have helped keep this book—and all my other professional trials and tribulations—in perspective. Our children, Samantha and Jeremy, have also enriched this process by asking questions about what this book is about and offering their own unique take on the gender gap. Their love, energy, and just plain silliness are what I most look forward to every day.

About the Author

Linda J. Sax is an associate professor in the Graduate School of Education & Information Studies at UCLA, where she serves as founding faculty director of the master's program in student affairs. Dr. Sax's research focuses on gender differences in college student development, with a focus on how institutional characteristics, peer and faculty environments, and forms of student involvement differentially affect male and female college students. She is currently principal investigator on a nation-wide study of the effects of single-sex secondary education, and coprincipal investigator on a project to increase women's pursuit of graduate degrees in the physical sciences and engineering.

Dr. Sax received her BA (1990) in political economy from the University of California, Berkeley, and her MA (1991) and PhD (1994) in higher education from UCLA. Between 1994 and 2005, she served as director of the Cooperative Institutional Research Program and associate director of the Higher Education Research Institute at UCLA. She has authored over fifty publications in the field of higher education and has served on numerous editorial boards. Dr. Sax was selected as a 2007–2008 fellow for the Sudikoff Family Institute for Education & New Media. She is also the recipient of the 2005 Scholar-in-Residence Award from the American Association of University Women and the 1999 Early Career Award from the Association for the Study of Higher Education.

The Gender Gap in College