THE Generation X Report

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Lifelong Learning:
Generation X illustrates the new reality

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The traditional model of obtaining one's education first and then entering into an extended period of work that ultimately leads to retirement is disappearing, and the young adults in Generation X are the first generation of Americans to fully experience the new reality. Today's young adults have spent more time in formal education than their parents and have completed more baccalaureates and graduate degrees than preceding generations, but all of these achievements are a foundation for continuing cycles of work, continuing education, work, and more education. We have entered the era of Lifelong Learning. Continuing or episodic education and learning is the new norm.

Previous Generation X Reports have discussed the educational achievements of the young adults in the Longitudinal Study of American Youth – the center of the Generation X age range – and this report will examine the nature and magnitude of these changes in the first 20 years after high school. For most young adults in Generation X, the process is continuing and the young adults in the LSAY are just approaching the mid-point of these processes. Nonetheless, it is important to examine and note some of the major features of the changes experienced to date as precursors to additional changes that are likely to occur in the next two decades.

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For additional information about the LSAY, visit **www.lsay.org.**

THREE KINDS OF LIFELONG LEARNING

It is useful to think of lifelong learning as involving three primary kinds of activities:

- Formal courses leading to degrees at various levels – associate, baccalaureate, graduate, and professional.
- Courses and workshops that lead to licenses, certificates, and other recognition within professions and occupations.
- Informal learning and skill acquisition that may not be directly job related but which may advance an individual's ability as a consumer, a parent, or a voter.

Over the last 50 years, the number of individuals seeking advanced education or training in each of these areas has increased, but the experiences of the young adults in Generation X demonstrate that the process of lifelong learning now reaches a larger proportion of this generation than any previous generation and continues as the older wave of LSAY young adults reach 40.

FORMAL COURSES AND DEGREES

One of the characteristics of American post-secondary education has been the wide availability of courses and degrees in major cities throughout the country for part-time adult students. Although some European universities offered courses to adults who were no longer full-time students, they seldom offered degrees for these students. There has been some growth in the availability of this kind of formal study in both Europe and Asia in recent decades, but part-time adult study for degrees has a much longer history in the United States.

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The road to a baccalaureate. The young adults in Generation X have been vigorous consumers of formal educational programs during the years since high school. Slightly more than 40% of LSAY young adults have earned a baccalaureate or higher degree (see Table 1). Thirty percent earned a baccalaureate within five years of high school graduation, but an additional 13% earned the baccalaureate six or more years after high school, indicating that they either took some time out of undergraduate study or changed programs or objectives during these years.

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Numerous factors influence which young adults complete a baccalaureate or advanced degree and the length of time that it takes to complete the degree. Generation X young women – as a group – are more likely to have earned a baccalaureate than young men, but this relationship is also influenced by the presence of minor children in the home. For young men, the presence or absence of minor children in the home makes almost no difference in the rate at which they earn a baccalaureate, but children make a large difference for young women. Fifty-four percent of young women in the LSAY who did not have minor children at home completed a baccalaureate by 2011 compared to 44% of young women with a minor child at home (see Table 1). Both of these rates of degree attainment for young women are higher than males in the same minor-children-at-home circumstance.

Geographic residence is related to baccalaureate attainment among LSAY young adults. Fifty-three percent of Generation X young adults who live in the central city of a major metropolitan area of one million or more reported that they have completed a baccalaureate or higher degree, and 55% of young adults living in the suburbs of the same metropolitan areas earned a baccalaureate 20 years after high school. In contrast, 30% of young adults living in small towns and rural areas (areas of 20,000 or fewer residents) had completed a baccalaureate within two decades after high school (see Table 1). These differences reflect a combination of differences in access to educational programs and institutions and in economic incentives to obtain higher degrees.

Table 1: Formal education by selected characteristics, 2011.

		Formal education by 2011				N
		No-PSE	Some PSE, no Bacc.	Bacc. in 6+ years	Bacc. in 3-5 years	
All LSAY young adults		22%	35%	13%	30%	3,964
Gender						
Female		20	34	13	33	1,983
Male		25	35	13	27	2,012
Gender and Children at Home						
Female	No kids at home	16	30	13	41	427
	Kids at home	20	36	13	31	1,553
Male	No kids at home	26	35	14	25	690
	Kids at home	24	35	12	29	1,321
Current residence						
Central city of 1+ million city		17	30	15	38	657
Suburb of 1+ million city		14	31	14	41	1,155
Urban area 500,00 to 1 million		17	41	17	25	229
Urban area 50,000 to 500,000		23	38	13	26	691
Urban area 20,000 to 50,000		34	35	12	19	328
Towns with fewer than 20,000		32	38	9	21	923
Parent education						
Less than high school diploma		47	40	6	7	264
High school graduate		28	42	10	20	1,824
Some college		22	40	14	24	571
Baccalaureate		10	24	18	48	690
Graduate or professional degree		8	20	16	57	615

PSE refers to Post-Secondary Education and N is the number of cases or respondents included in each row of data.

Finally, the LSAY data confirm that some portion of educational expectations and attainment is related to advantages associated with one's parents or one's home. Seventy-three percent of young adults whose parents held a graduate or advanced degree have completed a baccalaureate, compared to 30% of young adults whose parents held only a high school diploma (see Table 1). And only 13% of LSAY young adults whose parents did not complete high school have completed a baccalaureate in the last two decades. American education continues to be a system of cumulative advantage and cumulative disadvantage.

The completion of graduate and advanced degrees. As the global economy becomes more scientific and technical in character, there is a large premium on the completion of graduate and professional degrees in a wide array of fields. And it is clear that this trend is accelerating rather than declining.

The LSAY data indicate that young adults in Generation X have earned graduate and professional degrees at a higher rate than any previous generation and continue to do so. By 2011 – two decades after the end of high school – 22% of LSAY young adults have completed at least one advanced degree and 10% have completed a doctorate or professional degree (see Table 2). As with the completion of a baccalaureate, young women in Generation X were slightly more likely to complete a graduate degree than young men, but this relationship differs by the presence or absence of minor children in the home. Twenty-three percent of all young women in the LSAY earned a graduate

or advanced degree within two decades after high school, but 30% of young women without minor children at home earned an advanced degree in the same period (compared to 21% with minor children at home). Twenty-one percent of all young men in the LSAY earned an advanced degree within two decades after high school and this level did not vary significantly by the presence or absence of minor children at home (see Table 2).

Young adults in Generation X who live in major metropolitan areas are more likely to have completed an advanced degree than similar young adults in smaller towns or rural areas. Twenty-seven percent of LSAY young adults living in the central city of large urban areas (one million or more residents) have earned an advanced degree and 30% of young adults living in a suburb of a large urban area have completed an advanced degree (see Table 2). In comparison, 14% of LSAY students living in communities with fewer than 50,000 residents have earned an advanced degree. This pattern is similar to the record of earned baccalaureates and reflects a combination of differences in access to advanced programs

Table 2: Graduate and professional degrees by selected characteristics, 2011.

		Formal education by 2011					N
		No-PSE	No Bacc.	Bacc.	Masters	Doc-Prof	
All LSAY young adults		22%	35%	21%	12%	10%	3,964
Gender							
Female		19	35	23	13	10	1,983
Male		25	34	20	11	10	2,012
Gender and Children at Home							
Female	No kids at home	16	30	24	17	13	427
	Kids at home	20	36	23	12	9	1,553
Male	No kids at home	26	36	19	10	9	690
	Kids at home	24	34	21	11	10	1,321
Current residence							
Central city of 1+ million city		17	30	26	12	15	657
Suburb of 1+ million city		14	31	25	17	13	1,155
Urban area 500,00 to 1 million		17	41	24	11	7	229
Urban area 50,000 to 500,000		23	38	20	12	7	691
Urban area 20,000 to 50,000		34	35	17	8	6	328
Towns with fewer than 20,000		32	38	17	7	6	923
Parent education							
Less than high school diploma		46	40	9	2	3	264
High school graduate		28	41	17	8	6	1,824
Some college		22	39	21	10	8	571
Baccalaureate		10	23	35	17	15	690
Graduate or professional degree		8	20	26	25	21	615

PSE refers to Post-Secondary Education and N is the number of cases or respondents included in each row of data.

and occupational incentives to earn an advanced degree.

As with baccalaureates, the level of parental education is a strong indicator of the likelihood of earning an advanced degree. Forty-six percent of the children of parents with an advanced degree had earned an advanced degree within two decades after high school (see Table 2). Fourteen percent of students whose parents held a high school diploma without any post-secondary experience had earned an advanced degree in the same period. This result is disappointing in that many faculty and leaders in higher education have assumed that social inequalities had some impact on the likelihood of completing a baccalaureate, but that intellectual ability was a stronger predictor of advanced study. Although these data (in other analyses) support the idea that academic ability and achievement are important factors, the persistence of a strong effect from parent education indicates that the stratification of American education is systemic and continues from elementary school through graduate and professional education.

CURRENT COURSE ENROLLMENT

Although the LSAY young adults are approaching their 40th birthday, 11% are current enrolled in formal courses or schooling. A few of these young adults are currently studying to complete their GED and about two percent are pursuing an associate degree. Another two percent are enrolled in courses that they expect will lead to a baccalaureate and three percent are working toward a graduate or professional degree. And about two percent are enrolled in post-secondary courses for personal or occupational improvement and do not plan to obtain an additional degree from these courses.

Projected to the 80 million young adults in Generation X, these results suggest that 1.8 million young adults are studying to earn an associate degree, 1.7 million are seeking a baccalaureate, and that nearly two million are taking courses to earn an advanced degree at the masters, doctoral, or professional level. This is an impressive level of engagement in lifelong learning and reflects the changing realities of a global economy driven by science and technology.

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In addition to formal coursework, a large number of Generation X young adults are engaged in in-service training and job updating. Thirty-two percent of LSAY young adults are employed in an occupation or profession that requires a license and many of these licenses require periodic continuing education, courses, and workshops. This kind of requirement includes electricians, nurses, and physicians who are required in most states to complete a minimum number of hours of continuing education each year or within a licensing period. An additional 16% of LSAY young adults are employed in an occupation or profession that requires certification (but not a license) and many of these certification programs require periodic continuing education activities.

INFORMAL LEARNING IN THE ELECTRONIC ERA

Although most of the coursework reported by LSAY young adults is related to occupational needs, lifelong learning involves staying abreast of a number of areas and issues, ranging from personal health issues to public policy matters to understanding more about the world in which we live. Traditionally, it was expected that formal school early in life would provide a solid store of knowledge that would last a lifetime. In earlier centuries, this model of learning (which I often refer to as *the warehouse model of learning*) appears to have worked reasonably well, but not perfectly. We know, for example, that more than 200 years ago, both George Washington and Thomas Jefferson actively sought to read and learn about new methods for propagating crops and improving agricultural production.

In recent years, LSAY participants have been asked about how they obtain information about emerging health

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Table 3: Informal Learning in the Electronic Era, 2009.

Information Acquisition Activity		Influenza 2009		Fukushima 2011		Climate Change 2011	
Talk	Talk to friends or co-workers	4.9	9.2	4.8	8.5	2.1	4.0
	Talk to other family members	4.1		3.6		1.8	
	Attend lecture about …	0.2		0.1		0.1	
Expert	Talk to physician	1.6	1.6	--	--	--	--
Read	Read newspaper/magazine	2.5	2.6	4.1	4.2	1.5	1.6
	Read book about …	0.1		0.1		0.1	
Broadcast	Watch television show about	1.6	2.8	3.5	5.4	1.4	2.3
	Listen to radio show about …	1.2		1.9		0.9	
Online	Found info on the Internet	2.9	4.9	4.7	7.3	1.6	2.9
	Searched Google, Yahoo, …	1.1		2.0		0.7	
	Read blog about …	0.4		0.4		0.3	
	Posted on blog about …	0.1		0.1		0.1	
	Printed/downloaded info	0.4		0.1		0.2	
Special	Learned about … at museum	0.1	0.3	0.1	0.2	0.2	0.3
	Found info at public library	0.2		0.1		0.1	
Number of information acquisition activities		21.4		25.6		11.1	
Number of cases		2,548		2,934		2,913	

Cell entries are the mean number of times each activity occurred in the previous month.

issues such as influenza, about accidents such as the Fukushima nuclear power plant meltdown, and about continuing public policy issues such as climate change. In each of these three examples, an individual may have acquired some basic concepts and information from formal schooling, but major aspects of all of these examples occurred after most LSAY young adults had completed their initial period of formal schooling. As workers, parents, and voters, they often need to find information about emerging or contemporary issues quickly and without a major investment of time and effort. The development of numerous electronic technologies – radio, telephones, television, Internet, and wireless communication – allows individuals to seek information from a vast network of resources unparalleled in human history. Generation X is the first generation to grow up in the Electronic Era.

Previous ***Generation X Reports*** have looked at how young adults learn about influenza, organic foods, and climate change and the most recent report focused on the expansion of social capital in the Electronic Era. Each of those reports tended to focus on the impact of electronic information acquisition on the specific issue involved, but it is also important to see these activities as a part of a lifelong learning process. Whereas the warehouse learning model attempted to provide each individual with a large stock of information that could be used for years into the future, adult lifelong learning is increasingly built on a *just-in-time model of learning*. Today, most adults seek information when they think that they need it or want it and the information resources and technologies of the Electronic Era make that possible.

To see how young adults acquire information about emerging issues, it is useful to look at recent reports from LSAY young adults about how they learned about the influenza epidemic in 2009, the Fukushima accident in 2011, and climate change in 2011. The influenza epidemic was an emergent issue that involved the personal health of many of the LSAY participants as well as the health and welfare of their families. The Fukushima accident was a major subject of news casts for several weeks, although

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there was never a serious threat of personal damage to adults living in the United States. And climate change is a long term issue that has been a part of American political discourse for more than a decade and is likely to continue to be a public policy issue for future decades or centuries. It is unlikely that any of these topics could have been included in the high school or post-secondary schooling of LSAY young adults. There may have been some early discussion of climate change during the college or post-graduate years of some LSAY young adults who were studying in scientific fields, but a great deal of the information required to follow any of these three issues would require some informal information acquisition by Generation X young adults.

Looking at the reports of LSAY young adults about the frequency that they used various kinds of information to learn about and stay abreast of these issues, several important patterns emerge. First, these reports indicate that young adults use a mix of information sources, including some traditional print materials (newspapers, magazines, books) and some early electronic media (radio and television), but that there is substantial use of newer electronic media on all three subjects (see Table 3).

Second, these reports demonstrate the continuing importance of conversation in the process of making sense of important and complex issues. For all three issues, talking with friends and family is more frequent than the use of print media or broadcast media, but it is useful to see these activities as being partially circular. For years, communication scholars have known that individuals acquire some information from media sources – print, broadcast, or electronic – and that they talk to friends and family about the information and what it means. For many individuals, it is the process of information acquisition from media and sorting out its meaning with other adults that produces understanding, attitudes, and sometimes actions on various subjects. Talking to other people about news and issues is not just a social activity, it is an essential part of lifelong learning.

Third, the influenza epidemic and the Fukushima accident are examples of emergent news that occurs outside an individual's normal life circumstances, but which may have some impact on it. Both of these events were in the news for a matter of weeks or months, but then receded – although there may be follow-up stories from time to time. In contrast, climate change is a longer-term issue that has been in the news for more than a decade and has become a part of the polarization of American politics. It shows some signs of *issue fatigue*. The level of information activity related to climate change was less than half that reported for either influenza or Fukushima, suggesting that many young adults have already acquired a good deal of information about the climate issue and may not be motivated to engage in extensive new information acquisition until there is a new or emergent development in the climate debate. This pattern does not mean that climate is no longer an issue to many of the young adults in Generation X, but it is not a new issue and it does not generate the level of activity associated with emergent issues such as influenza or a nuclear accident.

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THE NEXT 20 YEARS

This examination of lifelong learning by LSAY young adults – the center of the Generation X age span – indicates that a high proportion of young adults are continuing their formal education through new courses and degrees, reflecting the changing demands of a global economy driven by science and technology. At the same time, LSAY young adults are using the full resources of the Electronic Era to learn about and stay abreast of emerging issues and subjects of personal, family, professional, or political interest. The young adults in Generation X are the first generation to grow up in the Electronic Era and they appear to have adapted to its promise and its challenges.

It is impossible to imagine the information landscape that these young adults will encounter in another 20 years, but their ability to recognize, adapt to, and utilize the new resources of the Electronic Era are impressive. Undoubtedly, information storage will be larger and less expensive; information transmission will be faster and less expensive; and the range of information and knowledge available will be vastly larger. In this new world, the role of formal education will become to prepare young adults to understand and navigate this growing array of information and to acquire the concepts needed to make sense of massive amounts of information. It is essential to continue to follow the life course of today LSAY young adults as they negotiate life in the Electronic Era. ◆

A Brief History of the LSAY

Today, the Longitudinal Study of American Youth (LSAY) is the longest and most comprehensive longitudinal study of a national sample of public school students ever conducted in the United States.

To provide a more intensive longitudinal examination of the development of student achievement in middle school and high school (and the relationship of those patterns to career choices), the National Science Foundation (NSF) funded the LSAY in 1986. After a year of pilot testing of instruments, the LSAY began collecting data from a national sample of 7th and 10th grade students in 50 U.S. public school systems in the fall of 1987. During the next seven years, each of approximately 5,900 students in the two national probability cohort samples were given mathematics and science achievement tests (based on the National Assessment of Educational Progress item pools) each fall and were asked to complete attitudinal and self-report questionnaires each fall and spring.

In addition, one parent of each of the LSAY students was interviewed each spring by telephone, and all of the mathematics and science teachers who served one or more LSAY students were asked to complete a questionnaire for each course, including information about the objectives of the course, the textbook used, and the allocation of time and effort in the course to various kinds of instructional activities. The principal of each of the participating schools was asked to complete a school inventory and questionnaire periodically. The initial period of data collection ended in the spring of 1994 when the 7th-grade cohort was one year beyond high school and the 10th-grade cohort was four years beyond high school.

With support from the NSF STEP program in 2005, the LSAY was able to locate or account for more than 95% of the original sample of students. Data collection was resumed in 2007 and four additional cycles of data collection have been completed with NSF support.

The LSAY participants in the two cohorts are now 36 and 39 years of age, respectively. Because of its extraordinary longitudinal record of these young adults – who represent the core of Generation X – the LSAY is committed to continuing an annual program of measurement and analysis in future decades.

During the years in which students were enrolled in middle school and high school, data were collected primarily through the use of printed questionnaires and tests administered in school by a local school staff member employed part-time by the LSAY. Teacher questionnaires were printed and collected by a combination of mail and the use of a local in-school coordinator. During the in-school years, one parent of each participating student was interviewed by telephone once each year. Currently, approximately 75% of participating young adults complete an annual questionnaire online and the remaining 25% use a printed questionnaire and a postage-paid return envelope. Current participants are offered a small payment in appreciation for their time and effort.

All of the data collection and data management procedures used by the LSAY are approved by the University of Michigan Institutional Review Board. In earlier years, LSAY data collection procedures were reviewed and approved by the Institutional Review Boards at Michigan State University, Northwestern University, and Northern Illinois University. The data are deposited (in a blinded format to protect the identity of individuals) in the Inter-university Consortium for Political and Social Research (ICPSR) at the University of Michigan and are available for secondary analysis according to ICPSR rules. Over the last two decades, LSAY data have been used in approximately 40 dissertations and more than 200 articles in refereed journals.

A more comprehensive description of the LSAY is available at www.lsay.org. ◆

The Generation X Report is based primarily on data from the Longitudinal Study of American Youth (LSAY). The LSAY has been funded by the National Science Foundation (NSF) since 1986 (NSF awards MDR-8550085, REC96-27669, RED-9909569, REC-0337487, DUE-0525357, DUE-0712842, DUE-0856695, DRL-0917535, DUE-1118625, DUE-1118626).

Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the NSF.

We acknowledge the continuing cooperation and support of the more than 4,000 LSAY participants who have voluntarily completed questionnaires, telephone interviews, and data forms over the last 24 years and thank them for their continuing support. Without their active involvement, the LSAY would not be possible.

We also acknowledge and thank the parents of LSAY students and the teachers, principals, and administrators in public school districts throughout the U.S. who contributed their time and energy to this study.

And, we acknowledge and thank the several hundred staff who have worked on the LSAY over the last two decades to make this study possible.