Chapter 71

Swimming in Deep Waters: 20 Years of Research About Early University Entrance at the University of Washington

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Abstract Radical acceleration from secondary school to university is an unusual educational option in the United States of America, yet it is one that more than 500 gifted young scholars have chosen at the University of Washington in Seattle since the inception of the Early Entrance Program in 1977 and the UW Academy for Young Scholars in 2001. From the beginning, research, using multiple methodologies, has carefully guided the evolution of these programs. The findings from these studies and recommendations for viable and successful early entrance programs are discussed in the context of early entrants' intellectual, emotional, and social needs.

Keywords University of Washington · UW Academy for Young Scholars · Radical acceleration · Early Entrance Program

Introduction

Cultivating promising young scholars is one of the best investments that any society can make in its future. The Halbert and Nancy Robinson Center for Young Scholars (Robinson Center) at the University of Washington (UW) in Seattle has been actively making that investment for almost 30 years through innovative programs and services that nurture young scholars' intellectual, social, and emotional development, inspire them to achieve personal and professional excellence, and encourage them to become active members of their communities. Each year, the Center serves several thousand families and youth throughout the State of Washington in a variety of ways. These include the Washington Search for Young Scholars, a regional academic talent search for students in fourth through eighth grade; Summer Stretch and Summer Challenge, accelerated courses for students in fifth through ninth grade; the Transition School (TS) and Early Entrance Program (EEP) for students who enter the UW after Grades 7 or 8; and the UW Academy for Young Scholars (Academy) for students who enter the UW after Grade 10. Faculty, staff, and students are involved in ongoing research about the short and long-term effects of educational acceleration on young scholars. This research is used to refine existing programs and inform the Robinson Center's new directions. This chapter will focus on research about students in the EEP and the Academy with an emphasis on their intellectual, emotional, and social development.

At the time of this writing, there are 18 early entrance programs in the United States of America (US), including two at the UW, that differ in significant ways. (See Brody, Muratori, & Stanley, 2004, for all program descriptions.) Eleven are residential; seven, including the UW's programs, are for commuters. Some programs expect students to transfer to another college or university after a period of 2 years; others admit students only in 12th grade. One admits only women (Grades 9–12), and two are accelerated high schools. One program was loosely modeled on the UW EEP but does not offer students the formal academic preparation provided by TS, a preparatory program for the EEP that is discussed in detail below. The UW is the only university in the US to offer two unique early entrance options for academically talented students. In 1977 the EEP was created so that each year 16 gifted

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young scholars could accelerate their education by entering the university prior to age 15. Then, in 2001, the Academy became a second early entrance option for students after Grade 10, admitting its first cohort of 35 students in Autumn 2002.

Since its inception, the Robinson Center has been committed to conducting research to better understand and provide for students' intellectual, academic, social, and emotional well-being, as well as to guide program development. Thus far, 15 studies have investigated multiple aspects of early university entrance from both students' and parents' perspectives, using both quantitative and qualitative methodologies. These studies span the earliest years of the program to the present and include Janos and Robinson, 1985; Janos, Sanfilippo, and Robinson, 1986; Robinson and Janos, 1986; Janos et al., 1988; Janos, Robinson, and Lunneborg, 1989; Noble and Drummond, 1992; Noble, Robinson, and Gunderson, 1993; Noble and Smyth, 1995; Noble, Arndt, Nicholsen, Sletten, and Zamora, 1999; Halvorsen, Noble, Robinson, and Sisko, 2000; Noble, Vaughan, Chan, Federow, and Hughes, 2005; Noble et al., 2007; Childers, 2006; Noble, Childers, and Vaughan, 2008; and Noble and Childers, 2008. A brief discussion of the history and structure of both the EEP and the Academy will place this body of work in context.

The Early Entrance Program

Since 1977, the EEP has been the gateway through which some of the brightest young scholars in Washington State enter the UW, the premier research university in the Pacific Northwestern region of the United States. Each year 16 students under the age of 15 are admitted to the preparatory Transition School (TS) on campus, which compresses most of secondary school into three academic quarters. Students graduate to the EEP at the end of the year and become fully matriculated UW undergraduates. To date 352 students have participated in the EEP. Of these, 13 students are currently enrolled in TS and 58 in the EEP; 250 have graduated from UW and 20 have transferred to and graduated from other colleges and universities. Only 11 students who proceeded to EEP later left school altogether, and their educational status is unknown.

The EEP was created by the late Dr. Halbert Robinson, a professor of developmental psychology at the UW. His goal was to enable a small and carefully selected group of academically advanced middle school students to accelerate into postsecondary education at a pace equal to their intellectual development (Robinson & Robinson, 1982). At the outset, EEP students could be dually enrolled in middle school and the UW, but it quickly became apparent that this divided their loyalties and diluted their satisfaction with their university experiences. By the third year of the program, dual enrollment was abandoned and students became full time UW students upon admission to the EEP. Initially, there was no formal TS. Students participated in an informal "transition component" of weekly group meetings led by the program's psychologist, and they could avail themselves of mentoring, academic advising, and personal counseling as needed from the faculty and staff. When Dr. Hal Robinson died in 1981, Dr. Nancy Robinson, a professor of psychiatry and behavioral sciences at UW, assumed directorship and made a major programmatic change. She recognized that many EEP students were struggling with the rigor demanded by their university courses, particularly in mathematics and the sciences, and that they needed more than high intelligence to succeed at the university. Specifically, many needed more rigorous preparation in particular content areas and study skills, such as time management, organization, critical analysis, and scholarly writing. Thus, TS was born. Since 1981, all EEP students spend their first academic year in TS.

The academic structure of TS has stayed much the same since 1981 although significant changes in faculty have occurred, and some new courses have been added. TS follows the quarter-based academic calendar of the UW. During their first year in the program, students take five courses: English (Writing and Literature), History (Medieval and Modern Western Civilization, and US history), Physics, Pre-Calculus, and Ethics. During the third TS quarter, Physics and Ethics are replaced with a five-credit university course of their choice so that students can take it while still under the protective umbrella of TS faculty and staff. At one time TS students undertook one quarter of language training in German, but this course was dropped in favor of a second quarter of Physics after research revealed that students needed better preparation in science. In 1990 a one-quarter seminar that prepares TS students for their entry into UW was added to the curriculum,

as were a one-quarter service-learning component to the English course in 1998 and a two-quarter Ethics seminar in 2002.

Some changes in personnel have, of course, occurred over the years. All faculty members are doctoral trained experts in their academic fields; many are also UW professors. Faculty turnover is remarkably low. The English instructor, who is the Associate Director of the Robinson Center for TS and EEP and who also serves as Principal of TS, joined the faculty in 1996; the history instructor, who is the Associate Director of the Robinson Center for Summer Programs and also serves as Principal of Summer Programs, joined in 1990. Although the current math instructor was appointed in 2004, her predecessor was a member of the TS faculty for 15 years. A licensed psychologist was available for academic and personal advising from the onset of the program until 2008. The first author was the director of the Robinson Center and the first Halbert and Nancy Robinson professor from 2000–2008. This continuity of faculty has provided students with a great deal of academic and emotional stability both during and after their participation in TS and the EEP and has enabled the Robinson Center to continuously refine its programs and policies as circumstances warranted.

Policy refinements have largely involved admissions and retention. On several occasions during earlier years of TS and the EEP, some students revealed that they had entered the program because their parents wished them to but that they had been ambivalent or had wished they had attended high school. Thus, in 1998 the faculty decided to pay more attention to whether the student or parent was driving the choice to come to TS, and the admissions interviews were restructured so that all applicants would have an opportunity to talk with the admissions committee without their parents present. This enabled the committee to ascertain whether the student was making the independent decision to apply to TS and not simply acquiescing to parental desires.

Applicants to EEP must take the ACT and submit their scores along with grades from their two most recent years of schooling. For those who have scored at the 85 percentile on the reading, writing, and math sections of the ACT and whose grades are consistently high, in-depth recommendations are discussed with two or three of each applicant's current teachers, preferably one from language arts/social sciences and the other from math/science. Each applicant and her or his parent/s must spend a full day attending TS and visiting with current TS and EEP students; at the end of that day, interviews are held with parent/s and student, separately and together. Although TS used to have a rolling admissions procedure, in 1997 the decision was made to interview all the candidates before selecting the final class to ensure fairness for those who applied later in the admissions cycle. Each year approximately 25% of applicants are accepted to TS, which limits its class size to 16.

Another important refinement was a clearly defined policy for dismissal. Although earlier in TS' history students were occasionally counseled out of the program, they were not dropped for poor grades. This is no longer the case. At entry TS students now sign a written contract stating that they can be dismissed for poor academic performance or for rendering the classroom environment emotionally unsafe for other students. If such a situation arises, the student is given a brief probationary period and will be dismissed from the program if he or she does not comply with the terms of probation.

When students graduate from TS at the end of the year, they become full-time undergraduates at UW (Seattle) and are known to the Robinson Center community as EEPers. Our involvement with them continues in a variety of ways. The UW is an academic home to approximately 36,000 undergraduate and graduate students, and it would be all too easy for young scholars to feel lost on the Seattle campus. Thus, a number of support services are available to them through the EEP. Perhaps most importantly, students have access to a lounge at the Robinson Center where they can meet friends, study, play games, visit with faculty, and consult with advisors. A seminar on developing their particular talents and academic interests is offered for all first-year EEPers to encourage them to take advantage of the vast resources available at UW. Students are mentored at various stages of their undergraduate careers by Robinson Center faculty, and many students have served as undergraduate research assistants for studies undertaken at the Robinson Center and received co-authorship on the resulting publications. Others have served as teaching assistants for TS and other Robinson Center academic programs. EEPers are required to meet with program staff once each quarter during their freshman year, and their academic performance is monitored on a quarterly

basis so that staff can help students if they are experiencing personal difficulties and/or their GPAs fall below a certain level, typically 3.3 on a 4-point scale. EEP students created a highly successful drama society in 1990, and every year produce, direct, design the sets and costumes for, and act in a play that is open to the public at large. There is also a faculty-led hiking club, an overnight orientation for entering TS students and first-year EEPers at the beginning of each academic year, and an end-of-the-year overnight celebration for the entire community at a camp on the Puget Sound.

Parent involvement is also an important component of TS. Each year new TS parents are welcomed by faculty and EEP parents to the Robinson Center community with a picnic in early September. They participate in a parent orientation prior to the start of TS that includes a conversation with faculty, EEP parents, and EEP students about the challenges of TS, and a potluck dinner with faculty later that evening where more of their questions and concerns can be aired. Quarterly parent meetings are held during Autumn and Winter Quarters to talk about students' academic progress and to introduce parents to the academic requirements of the UW. A parent email list is provided, and a parent support group led by EEP parents is also available to TS parents.

As of December 2006, 250 EEPers had graduated from the UW and 20 had transferred to and graduated from another college or university. EEP students have majored in fields as diverse as music, classics, biochemistry, computer science, and dance, and many have completed two or three majors, often in disparate fields. EEPers have won a disproportionately large number of prestigious scholarships and research opportunities at UW. For example, since 2000, three of the four Rhodes Scholars at UW have been members of EEP, and a fourth was a Rhodes Finalist in 2004. Five EEP students have been Goldwater Scholars, two were Marshall Scholars, six were UW Freshman, Sophomore, Junior, or Senior Medalists (the students with the highest scholastic standing in their respective classes), three were NASA Space Grant Scholars, and many have won other scholarships and grants for foreign study, undergraduate research, music performance, and various academic endeavors. Each quarter, a majority of EEPers earn places on the Dean's List for high academic performance.

The UW Academy for Young Scholars

After many years of interviewing applicants for the EEP and consulting with parents and teachers about the educational needs of gifted secondary students in Washington State, it became apparent in 1998 that a second early university entrance option was needed for students after Grade 10. The form this program would take evolved over the next few years. One option that we considered initially was Running Start (RS). RS is a dual-enrollment program through which high school students take classes at community colleges and earn credit for both high school and college, as well as a high school diploma. After carefully researching several RS programs in Washington (Halvorsen et al., 2000) the Robinson Center recommended that the RS option be rejected in favor of establishing a joint program with the UW Honors Program (Honors) that would admit annually 35 academically advanced high school students into Honors after Grade 10. This program became known as the UW Academy for Young Scholars (Academy). Unlike RS, Academy students (ACADs) would not be dual enrolled in high school nor would they earn high school diplomas but instead would be fully matriculated UW undergraduates. Because a diploma is not required to enroll at UW, they, like EEPers, would be given special admissions status until all their high school coursework equivalencies were completed, usually by the end of their first year.

In July 2001, the first author and the Director of Honors received a 1-year start-up grant from the UW to create the Academy with the understanding that, like the EEP, it would be self-sustaining after the first year. Like the EEP, the Academy was designed as a commuter-based program, although students could choose to live in the dorms or in off-campus housing. The Robinson Center coordinates admissions to the Academy and supports students through first-year programming, academic advising, and social opportunities for students to build community with their Academy and EEP peers. Academy students matriculate directly into Honors through which they complete their UW general education requirements before pursuing their major/s. Early in the history of the EEP the Robinson Center entered into a contract with the Washington State Office of the Superintendent of Public Instruction (OSPI) that directed students' basic education funds

to the EEP rather than to the secondary schools they would otherwise have attended. These funds are used to provide all the special academic and support services available to EEPers. Successful negotiations were undertaken to extend this contract to the Academy, thereby enabling the Academy to be self-sustaining as well. By November 2001, key staff members were hired and/or reassigned; within 6 months a first-year curriculum, faculty, and admissions procedures were decided, and students were recruited via direct mail and an information evening. When the first cohort of students was admitted in May, 2002, the Academy was born. First-year students quickly named themselves "Academy 1.0s," and the name stuck – subsequent cohorts have become known, informally, as "2.0s," "3.0s," and "4.0s", and, in September 2006, a new class of "5.0s" matriculated. Thus far, 202 ACADs have enrolled at UW.

The Academy is currently the only commuter-based program in the United States that admits students to fully matriculated university status after 10th Grade. Like the EEP, the Academy is designed to help students make a smooth and successful transition from secondary school to university, and students have full access to the support services and community of the Robinson Center until they graduate from UW. Unlike some early entrance programs at other US institutions, neither ACADs nor EEPers are expected or encouraged to transfer to another college or university.

The admissions procedure and first-year structure for the Academy are different than that of the EEP because applicants are entering UW after 10th grade, rather than after 7th or 8th, and do not attend prescribed courses except for two during their first quarter. Academy candidates are required to submit a standard UW Freshman application, the ACT college entrance examination, two confidential, written teacher recommendations, their mid-year sophomore high school transcript, and an essay required for Honors consideration. During the first year of the Academy, all applicants were interviewed prior to acceptance to the program; however, for the second and subsequent years a decision was made to drop the interview because it did not yield the most useful information. A composite ranking is constructed based on each applicant's cumulative high school grade point average at the conclusion of first semester, sophomore year; the ACT composite score; teacher recommendations (rated on a scale of 1–60); an index of the intensity of each student's secondary curriculum; and an essay score. The 35 top-ranked applicants are then invited to enroll in the Academy. All prospective Academy students are invited and encouraged to spend a day at UW shadowing ACADs from previous years prior to accepting an offer of admission. Each year approximately 30% of applicants are invited to join the Academy; after the first year, acceptance rates have exceeded 90%.

One question that arose early in the creation of the Academy was what combination of academic and advising features would work best for ACADs. We knew from previous experience that in order to succeed as early entrants ACADs would need many of the same programmatic components as did EEPers, such as a period of intellectual preparation, a peer group, a home base, formal and informal advising, counseling, and mentoring by faculty and staff who liked and understood gifted adolescents, and a welcoming university environment. Because of the long-running success of the EEP, all these components were in place. Unlike EEPers, however, ACADs were entering UW after having completed 2 years of high school and thus do not need the full year of academic preparation offered by TS. Still, some preparation to help them transition smoothly into the academic and social life of the UW was important. For this reason, an Academy Bridge Program (Bridge) was created.

At this time, Bridge has four components: a 2-day orientation (Academy Camp) in early September at a camp on the Puget Sound; a 2-week Honors course (HA&S 397) with discussion sections before and after camp; the continuing Honors course during Autumn Quarter, linked to an English Composition course (ENGL 198); and a Winter Quarter seminar (Academy 198) for first-year ACADS (and EEPers) that helps them explore the resources and opportunities afforded by UW as well as their own interests and goals. ACADs share with EEPers a designated academic counselor, and various social activities that help to build a cohesive sense of community are initiated by students and staff throughout the year.

The Academy is only in its sixth year of operation, but already its students are proving to be exceptional young scholars. For example, in 2006, the three UW students selected as Goldwater Scholars were members of the Academy. One of these students was also the UW Sophomore Medalist in 2005, the recipient of a School of Music Performance Scholarship in 2004,

and the 2004 Outstanding Freshman Calculus Student. Another Goldwater Scholar was an undergraduate research assistant (RA) at the Robinson Center for 2 years for which he received a Mary Gates Undergraduate Research Training Grant. The second Robinson Center undergraduate RA was selected to participate in a year-long foreign exchange program in China to conduct independent research for her senior thesis in Economics. An Academy student also won the Department of Chemistry's 2004 Freshman Chemistry Award. Like their EEP counterparts, many ACADs have won prestigious research training grants, internships, scholarships, departmental awards, admission to foreign exchange programs, and election to national honors societies, and the majority are on the Dean's List at the end of each academic quarter. In June 2006 the Academy celebrated its first UW graduates. Nine ACADs earned bachelor's degrees in such fields as Spanish, International Studies, Bioengineering, Computer Science and Engineering, Psychology, Architecture, English, Economics, and Music. Several of these students had completed double majors.

Academy parents are invited with their newly admitted students to a welcoming reception in May and participate in a parent orientation in June. The parent orientation has evolved over the years as we have learned more about Academy parents' needs. It now consists of a half-day session during which we advise parents about the UW academic requirements and the Robinson Center's advising philosophy, and discuss the social and emotional transitions that they and their students are likely to experience based on our experience and prior research. The orientation concludes with a question and answer period led by a panel of Academy students and parents from previous years. Because their students are older, there is no Academy parent support group similar to that of TS; however, we offer parents a roster of parents' addresses and emails and encourage them to contact each other for assistance and advice.

Research About Early Entrance at the UW

Early EEP (1977–1989)

In 1982 the Robinson Center, then named the Child Development Research Group, began a research program to evaluate the young EEP. The first study (Robinson & Janos, 1986) compared the academic performance of EEPers with classmates who had entered UW at the traditional age of 18. The issue with which the investigators were most concerned was whether radical acceleration was too much of an academic challenge for early entrants. In the first phase of this study, 24 EEPers and 24 regular-aged students (REGS) were matched for pre-entry achievement on the verbal and quantitative composite scores of the Washington Pre-College Test (WPCT). In the second phase, a comparison group of 23 National Merit Scholars (NATS) was matched to EEPers by year of entry to UW and by gender, although not by WPCT scores. All three groups were administered two measurements of academic performance: the Concept Mastery Test (to assess verbal ability differences among groups) and a questionnaire designed by the investigators to assess students' perceptions of their university experience. Students rated on a scale of 1–5 the importance they ascribed to five academic variables at UW (the pace and quality of instruction, the intellectual quality of courses, faculty attitudes and time for interaction with faculty) and their satisfaction with the university's fulfillment of these variables. Participants' UW transcripts were also examined for number of credit hours taken and cumulative GPA.

Although no significant differences were found among the groups in the number of UW credits earned, significant differences were found in the CMT total score and the cumulative GPA, with means for REGS substantially lower than means for the two other groups. EEPers' mean ratings of the importance of various academic characteristics were similar to NATS, but their satisfaction with the academic environment provided by UW was significantly higher. The authors concluded that "under propitious circumstances certain students who matriculate before the age of 15 can perform well academically at the university level and report satisfaction with the intellectual challenge" (p. 178).

The next study examined the incidence and causes of "underachievement" among EEPers (Janos et al., 1986). The authors acknowledged that because underachievement was a difficult concept to define in this highly accelerated population, they used what they determined should be the "least objectionable criterion" – a cumulative GPA of 2.9 or below (p. 304). Participants included 56 undergraduates and graduates of EEP (nFemales=25, nMales=31), to whom the

authors administered multiple instruments. Participants' intellectual ability was first assessed using Washington Pre-College Test (WPCT). Academic information was gleaned from participants' transcripts and included cumulative GPA; number of course withdrawals; number of credits earned and grades received in Honors courses and in four academic disciplines (humanities, engineering, natural sciences, and social sciences); and number of courses that were not completed. Other measures included the Concept Mastery Test (CMT); five personality variables on the California Personality Inventory (CPI) relevant to achievement (responsibility, self-control, achievement via conformance, achievement via independence, and intellectual efficiency); an assessment of students' perceptions of their families' interpersonal relationships, directions for personal growth, and organization and structure using the Family Environment Scale (FES); and an evaluation of students' knowledge and attitudes about studying using the Survey of Study Habits and Attitudes (SSHA). Finally, students completed the questionnaire developed for the previously reported study in which they rated the importance of and their satisfaction with various components of their UW academic experience. Students also rated the importance of and their satisfaction with time spent and quality of interaction with peers.

Twelve participants (nFemales=4, nMales=8) were described as "underachievers" because their GPAs were 1.5 standard deviations below the mean of 3.36. Transcript data showed that underachieving students earned fewer credits in honors courses and lower grades in all subjects. There were no differences in the number of credits earned in any subject area, but underachievers had withdrawn from nearly twice as many courses and took incompletes more than twice as often as high-achieving students. Transcript patterns also revealed that achieving students tended to perform consistently across quarters, whereas underachievers varied between "successful" and "dismal" quarters (p. 308). No significant differences on any measure were observed. Overall, both groups "placed a high value on learning, and on developing peer relations and extracurricular competencies as well" (p. 310). Despite the comprehensiveness of their measures, the authors could discern no underlying or common source of EEPers' underachievement.

The third study (Robinson & Janos, 1986) investigated students' social and psychological adjustment to academic acceleration. The authors compared data they had collected between March 1982 and October 1984 from 4 groups of students: 24 EEPers; 23 NATS; 24 REGS; and 27 students who had qualified for EEP but had chosen to attend high school instead (QUALS). Four instruments were used: the Minnesota Multiphasic Personality Inventory (MMPI), which measures serious psychopathology; the California Personality Inventory (CPI), which measures higher levels of psychological functioning; the Tennessee Self-Concept Scale (TSC), which gives a global estimate of self-esteem; and the Inventory of Peer and Parent Attachment (IPPA), which assesses the affective quality of students' relationships with parents and peers. No significant differences were found among groups on any measure, and the authors concluded that accelerants were as well adjusted as non-accelerants. The social and emotional fitness of early university entrance as an educational option for participants in EEP in its earliest days was thus confirmed.

In a fourth study conducted in 1986 (Janos et al., 1988), Janos, Robinson, and several EEP undergraduate students addressed the issue of friendships among early entrants. These investigators designed a cross-sectional developmental study of social relations among the 63 EEPers (nFemales=28, nMales=35) that enrolled at UW. Participants completed a questionnaire about the age of their best friends and the age of five additional friends, as well as supplied details about their relationships with two types of friends – age mates (<3 years older) and elders (≥3 years older). Questions included the number of hours they spent in 1 week with age mates and/or elders, the number of times in the past week they spoke with friends in each group about 10 potentially sensitive topics (e.g., relationships with parents and friends, deep feelings, values, and life plans), and their rating on an 8-point scale of six variables having to do with the degree of trust and affection they felt within their relationships, the duration and dedication of these relationships, and their freedom to communicate criticism or hostility within them. From this last rating an intimacy score was constructed.

Participants were grouped into four cohorts for purposes of comparison: freshmen, sophomores, juniors/seniors, and graduates. The results of this study indicated that EEPers in all cohorts were socially well situated. Ninety-two percent had best friends, many of whom were older, and 68% had at least

five additional friends whom they considered close. Sophomores reported the most contact with age mates and graduates the least, whereas graduates reported spending more time with elders than did the other three groups of undergraduates. In all cohorts except freshmen, females communicated more often with age mates about sensitive topics than did males, but this difference was not statistically significant. The authors concluded that a large majority of EEPers experienced a viable social life with intimates and a circle of friends, thereby counteracting the pervasive stereotype of the early university entrant as an isolated social misfit.

The last study conducted in the EEP's earliest years (Janos et al., 1989) was a multiyear comparison of EEPers' academic performance and psychological adjustment. The investigators followed 179 participants in four groups over a period of 3 years: EEPS who had entered the UW between 1977 and 1983; QUALS who were the same age as EEPers but had elected to attend high school instead of joining the EEP; REGS (traditional-aged students at UW who were four and one half years older than EEPers and matched to them by year of matriculation, gender, and secondary school catchment area); and NATS (traditional-aged National Merit Scholarship awardees at UW who were four and one half years older than EEPers and who were matched with EEPers by year of matriculation and gender). Each group numbered between 42 and 43 with an even distribution of males and females. Some measures were administered to participants only once. These were the Concept Mastery Test (CMT), the Family Environment Scale (FES), the Tennessee Self-Concept Scale (TSC), and the Survey of Study Habits and Attitudes (SSHA). Multiple year measures included students' academic transcripts, the California Personality Inventory (CPI), the Inventory of Peer and Parent Attachment (IPPA), and the Defining Issues Test (DIT), which measures the cognitive underpinnings of mature social interactions and moral principles.

In measures of intellectual and academic achievement, NATS scored higher than EEPS, with EEPS and QUALS scoring higher than REGS. No significant differences were observed for the SSHA, leading the investigators to conclude that "EEP students' attitudes toward study and knowledge about study skills were comparable to those of the other students, including the academically oriented National Merit finalists" (p. 504). Similarly, no group differences were found in scores on the TSC: all participants scored close to mean, which indicated that "all groups are best characterized as normal and healthy in psychological adjustment" (p. 507). Neither were significant differences observed on the CPI or the IPPA. The authors note: "EEP responses indicated they trusted and communicated with parents and peers much as did comparably bright age mates, bright older students, and typical older students" (pp. 508–511). EEP participants scored at almost exactly the same levels as QUALS, NATS, and REGS on the DIT "suggesting that they were developmentally 'in sync' at college" (p. 511). Significant differences were found on only two subscales of the FES, achievement orientation and moral/religious orientation, with EEP scoring lower than REGS. This finding was not surprising to the investigators because "the FES measures conventional attitudes which would probably not be valued in EEP families pursuing nontraditional options" (p. 511). Overall, the results from this study did not deviate from those found in the third study reported above. There was "no association between early entrance and psychological or social impairment. Indeed, in every comparison, the early entrants were virtually indistinguishable from comparably bright age mates who had elected to attend high school." (p. 514)

Mature EEP (1989–Present)

In the early years of the EEP, researchers were most concerned with measuring students' academic achievement, psychosocial adjustment, and social relationships, and demonstrating the intellectual and psychological viability of early university entrance for academically advanced students. After 1990, following a change in program personnel, research attention shifted to students' self-perceptions of the intellectual, social, and emotional aspects of early university entrance and longitudinal studies about the program's impact on EEP graduates over time. One reason for this change in emphasis was to address the enduring myths and misconceptions about the affective aspects of radical educational acceleration; another was to provide more comprehensive information about the experience and legacy of early university entrance for prospective students, parents, and educational professionals. In the studies that follow, careful attention was

paid to collecting data from non-overlapping groups of students whenever possible.

"When people learn about the Early Entrance Program at the University of Washington, the first question they often ask is 'But what about the Prom?'" (Noble & Drummond, 1992, p. 106). This is also the question that inspired a qualitative study of EEPers' perceptions about early entrance conducted in 1990. Thirteen open-ended questions were developed by the authors based on questions most frequently asked of students, faculty, and staff about the EEP. Individual, structured interviews were then conducted with 24 EEPers who volunteered to participate. Participants ranged in age from 14 to 21 and comprised members of all academic classes who also represented a broad spectrum of academic disciplines.

Results of this study indicated that participating in the EEP presented both benefits and challenges to most students, although the majority emphasized that much of their dissatisfaction resulted from other people's perceptions rather than their own. As one student said, "For example, it is burdensome and annoying for EEPers to be asked frequently if they are 'geniuses,' to labor under an assumption that they spend (or should spend) all their time studying, or to be told 'that we have an obligation to go on to graduate school' and pursue a 'worthwhile' occupation. It never occurs to them that we might not want to become renowned research scientists or something on that level" (p. 110). Overall, students were glad to skip high school and the senior prom and stressed that high school was not a path that worked for all gifted students. Based on the results of this study, the authors urged readers "to remember. . .that early entrance may provide a more optimal educational and social environment for some highly capable students than high school, and that attending one's prom should not be a criterion for rejecting that option" (p. 111).

Might early university entrance help to inoculate gifted girls against sexist or unsupportive academic and professional environments? To answer this question a study of female EEPers was undertaken in 1993 (Noble & Smyth, 1995). The authors designed a 25-item questionnaire that interspersed open-ended questions with Likert-scale response items to ascertain why participants chose early entrance, whether gender played a role in their decision, and how their attitudes toward themselves and other's attitudes toward them were affected by their participation in EEP. The questionnaire also included propositions about giftedness, posed by the first author in a previous study of 109 gifted adult women (Noble, 1989), that had been cited in the literature as most powerfully influencing the development of gifted women's talent. Ninety-percent of female EEPers ($n = 27$) volunteered to participate in this study. They ranged in age from 14 to 20 (mean=16.8, SD=1.9) and were enrolled between 1988 and 1992.

All but one respondent felt they had made the right decision to accelerate their education. Although gender was not a factor in this decision for most respondents, these young women reported a number of benefits of radical acceleration: increased confidence in themselves and in their intellectual and social skills; the experience of being surrounded by intellectual peers and therefore not having to hide their level of ability or enthusiasm for learning; and the encouragement to perform as well as their capabilities allowed. All respondents believed that participating in the EEP had positively changed their parents' attitudes toward them, particularly in terms of their independence and ability to work hard. Respondents revealed themselves to be independent thinkers who were determined and assertive and who had a strong intrinsic motivation to succeed. Further, the authors claimed "(a)s our respondents reminded us repeatedly, students must want to undertake this kind of challenge and continue to want it, even when difficulties arise" (p. 54). The most frequently cited problem was dating men who, although of traditional college age, were considerably older than they. The authors suggested that early university entrance might offer gifted young women a rare combination of acceptance and encouragement at a critical age that could be inoculating if and when they entered less supportive environments later in their lives. Noble and Smyth concluded that "(t)aken as a whole, the findings from this study and those cited earlier clearly suggest that the most important question parents, educators, and champions of gifted girls can ask is not 'What are the negative effects of acceleration?', but rather 'What are the negative consequences of not accelerating mature and self-disciplined gifted young women' " (p. 55)?

Earlier studies about early university entrance had left little doubt about its positive effect on most participants' academic development and their sanguine perceptions about the overall experience. The question now under consideration was how students perceived the social and emotional effects of early entrance on

their own development (Noble et al., 1999). This study was prompted by concerns expressed to program faculty and staff by many adults that high school was not only desirable but necessary to the psychosocial soundness of an adolescent's life. To address this concern, all currently enrolled EEPers were invited to reflect on their social and emotional experiences in the EEP. Thirty-one students (nFemales=16, nMales=15) chose to participate in a 1-hour focus group to explore four principal questions: How had the EEP affected you socially and emotionally? Has it been helpful or harmful? How have you changed? Have you grown up too fast?

Participants, who comprised 50% of then-enrolled EEPers, ranged in age from 14 to 19, were evenly divided among all undergraduate classes, and represented a wide variety of academic majors and extracurricular interests. All believed that had they stayed in secondary school they would have been less mature, socially and emotionally. Although a few students had enjoyed satisfactory social lives in their previous schools, EEP allowed most – sometimes for the first time – to expand their sense of self beyond the "smart kid" mask they had worn for so many years (p. 78). One of the best things about early entrance, participants observed, is that the culture of university differs significantly from secondary school such that intellectual ambition and drive are not only expected but prized and rewarded by students and faculty alike. The EEP encouraged them to develop and cherish a degree of independence and assertiveness that few were allowed in secondary school. For the first time they were expected to be proactive learners, to question their own and others' assumptions, and to express their ideas in a thoughtful and cogent manner. Furthermore, they learned to take responsibility not only for setting academic goals, but for initiating social activities inside and outside the program. Most participants said that their decision to join the EEP produced no negative social or emotional effects. All believed themselves to be more mature than they otherwise would have been, and most considered themselves well socialized with both friendships and peer and adult relations as good as or better than they might otherwise have been. Although all participants expressed varying degrees of comfort in diverse social situations, they felt confident, independent and comfortable in their social environments.

Longitudinal, Follow-Up Studies

In 1992, Noble et al. (1993) carried out the first follow-up study of EEPers who had entered the program between 1977 and 1986 and two groups of students (NATS and QUALS) who had participated in two earlier studies (Janos & Robinson, 1985; Janos et al., 1989). The investigators adapted an eight-page, 47-item, follow-up questionnaire from the 24-page, 105-item post-college questionnaire developed by Stanley, Benbow, and their colleagues to follow the progress of students who had participated in the Study of Mathematically Precocious Youth at Johns Hopkins University. The revised questionnaire focused on former students' undergraduate and graduate education as well as their activities and interests, employment, achievements, and attitudes toward acceleration. In addition, questions relating to students' values, career and lifestyle expectations, marital status, and the educational attainment of their parents and partners were included.

Sixty-one former EEPers participated in the study, along with 27 NATS and 36 QUALS. These numbers represented 56, 71, and 56% of the total populations. Results indicated that respondents from all groups appeared to be doing well at that point in their lives. Most had completed their undergraduate degrees or expected to do shortly, and most had enjoyed the experience. Most were working in career-related jobs or still attending graduate or professional school. Most described themselves as relatively happy, emotionally stable, and creative, with feelings of self-worth, self-esteem, and self-efficacy, and a sense of satisfaction with their lives. Most believed strongly in the value of education and wanted to be successful in work that had meaning for them as well as have leisure time to explore their interests. Most wanted to find life partners, if they had not already done so, and to enjoy strong friendships. The majority of all groups were satisfied with the degree of acceleration or non-acceleration that they had chosen. Eleven EEPers wished they had accelerated less; significantly, nine of these respondents had entered EEP prior to the creation of TS. Like the 1985, 1986, and 1989 studies, this study found more similarities than differences among these three groups of gifted young people. EEPers' educational aspirations tended to be higher than either of the other groups, and EEPers entered graduate school in significantly

higher numbers than did NATS or QUALS. However, all three groups indicated similar degrees of happiness with their lives. The authors concluded that "accelerating one's secondary education is as healthy a decision for many highly capable students as remaining with age mates. Despite fears about psychosocial ramifications expressed by many well-meaning adults, the social and emotional development of most EEPers had neither been compromised nor harmed by acceleration" (p. 130).

The second follow-up study of EEPers who were enrolled from 1977 to 2003 was conducted by Noble et al. (2007) in 2004. One reason for this study was to assess the impact of programmatic changes on the evolution of the EEP. An analysis of the EEP history revealed three distinct programmatic periods: Pre-TS (1977–1980), Early EEP (1981–1989), and Mature EEP (1990–present). The distinction between Pre-TS and Early EEP was based on the radical shift in the program that occurred with the inception of TS in 1981, whereas the difference between Early and Mature EEP resulted from major personnel changes that emphasized advising, orientation seminars, and admissions policies designed to accept self-motivated, rather than parent-motivated, students. The study was also designed to understand more fully EEP graduates' patterns of work, education, and social affiliation.

The authors designed an eight-page, 100-item questionnaire that focused on participants' assessments of their educational and work experiences, friendships, and love relationships. Participants were asked a variety of open-ended and Likert-scaled questions; the latter used a 4-point scale to discourage neutral responses. Sample questions included are as follows: What aspects of your EEP experience do you feel were especially unique and beneficial to you, personally and professionally? Did you experience an uncomfortable level of pressure to succeed academically and/or professionally by parents, friends, EEP faculty/staff, UW faculty/staff, and/or yourself? What are the three most important traits that you look for in a romantic partner? Have you had any difficulties finding suitable friends and/or partners? What are the three most important values that you seek in employment? Have you significantly changed your career path in your lifetime? Overall, how well do you feel you have lived up to your own and your parents' expectations in the following areas: financial, work, intellectual, friendships, family, and romantic relationships?

Ninety-five of a possible 211 graduates participated in this study. Respondents included 49 females and 46 males; 53 were married or in long-term partnerships and 20 had children, whereas 61 planned to do so. Respondents' mean age was 28 years (SD = 6.14 years).

As described earlier in this chapter, the EEP had undergone a number of important changes over time in policies, procedures, and personnel; the data from this study revealed significant improvements in students' perceptions of their early entrance experience as a result. The most important programmatic change was the 1981 creation of TS to better prepare young scholars for the rigor of university coursework and to provide a stronger sense of belonging and community for students. The results of this study clearly supported the wisdom of that decision and identified the emergence of several trends over the maturation of the program: the increased importance of the EEP peer group, the decreased influence of parental pressure to enroll, and increased intellectual readiness to succeed at the university. The number of respondents who reported that the EEP "nurtured [them] intellectually" increased from 62% in the pre-TS group to 75% in the Early EEP group to 88% in the Mature EEP group. Indeed, of the 95 respondents only one individual felt that EEP had negatively influenced her intellectual development, and she was a member of the Pre-TS cohort.

Prior to 1981, students enrolled directly into the EEP without any special preparation or coordinated program that would create a supportive peer group. Not surprisingly, respondents from this sub-group (Pre-TS) were much less likely to cite "liking the EEP peer group" as a reason they chose for entering the program. The authors speculated that these respondents, who were the oldest in the sample population and the program's pioneers, might have forgotten their main impetus to join the program. However, upon the introduction of TS, 50% of respondents in the Early EEP sub-group cited the EEP peer group as important or very important in their decision to join the program; in the Mature EEP sub-group, this number grew to 75%. Clearly, the presence of a cohesive peer group was extremely important to most respondents' willingness to enter the UW as young scholars. The data indicated that EEP proved to be a social boon to most respondents. As the EEP community developed over time, not only did it become a more important factor in students' decision to enroll in EEP but it also became a source of close friendships for many EEPers and spouses for others.

The data also revealed a difference in respondents' perceptions of the effects of gender on their achievement, and significant gender differences in satisfaction with platonic and romantic relationships. Despite comprising a special population, EEP graduates are not isolated from social and cultural forces. This was apparent in respondents' awareness of the effects of gender on their academic and professional achievements. It is perhaps not surprising that significantly more males than females reported their gender as contributing only positively to their professional achievement and that females were more aware of the complexity of gender effects. Two women mentioned struggling with internalized gender norms, three experienced their gender simultaneously as a hindrance and a benefit, and five articulated the various ways in which their choices, opportunities, and interpersonal interactions in academia and in the workforce were influenced by their gender. The data did not suggest that females alone experience their gender in complex ways, but rather that gender continues to be a more salient factor for females in conceptualizing and explaining professional achievement than it is for males.

A significant and disturbing finding that emerged from this study was gender disparity in social satisfaction. As compared to females, male respondents reported less satisfaction in past and current friendships and romantic relationships (22% vs. 54%), with 21 males citing the EEP as a specific and negative factor. Several possible explanations for this finding were proffered. Males tend to experience puberty later than females, and thus tend to reach psychological, emotional, and physical maturity later. This decreased maturity, coupled with the significant age difference (average of 3–4 years) between EEPers and regular-aged college students, could have made male EEPers less attractive to females in the EEP and in the larger university population. Female EEPers are less likely to experience the negative effects of their young age on their romantic possibilities due to their earlier development and social norms that do not discourage women from dating older men. Male EEPers, on the other hand, are the youngest of all males on campus, and, in a society that does not encourage women to date younger men, are thus at a disadvantage when it comes to finding romantic partners in the EEP and general university population. EEP males' young age, physically and psychologically, may lie at the heart of their romantic dissatisfaction during their college years. It would seem that time would mitigate EEP males' dissatisfaction in romantic and platonic relationships but the data suggested otherwise. Relative to females, males reported a significantly lower level of satisfaction in finding current relationships and in finding happiness within relationships. The authors acknowledged that there was no way to discern whether this dilemma was unique to this population of gifted and accomplished men, or if the male respondents were experiencing social forces operating on all men.

Income was another arena in which a significant gender difference appeared. Females reported earning much less than did males, although the authors were uncertain whether this difference was due to the number of female respondents who were still enrolled in graduate or professional school. They speculated that the difference might stem from the differences in majors pursued by male and female EEPers. Although in the interest of preserving anonymity the questionnaire did not request respondents' academic majors, an analysis of the entire population of EEP graduates revealed that males were far more likely than females to have majored in scientific or mathematical disciplines, thereby putting themselves on a path in American society toward higher income potential.

The most important conclusion drawn from this study was that, as earlier studies had demonstrated, early university entrants did not fit the stereotype of the socially isolated, unhappy "nerd." Respondents valued intelligence highly and they sought a high degree of intellectual satisfaction and challenge in all aspects of their lives, both personal and professional. Yet, overall they revealed themselves to be well-rounded, balanced individuals on whom the EEP continued to exert a profound and overwhelmingly positive influence.

The Academy (2001–Present)

With the advent of the Academy in 2001, new questions presented themselves for investigation and resulted in four additional studies. How did ACADs experience their early university entrance? Were they making the most of their university experience? How did their experience compare with EEPers? What were their parents' perceptions of the impact of early entrance on their children who were enrolled in either the EEP or the Academy?

In Spring 2003 and 2004 the Robinson Center research team held a series of focus groups for ACADs in the first 2 years of the program and invited them to reflect on their experiences in the program (Noble et al., 2005). Students were asked: What has the transition from high school to college been for you, socially, emotionally, and academically? How do you feel you are "fitting in" here at the UW, in general classes, in Honors classes, in departments where you might major, and in extracurricular activities? How have your experiences here affected your relationships with your parents and siblings? What about the Academy is working well, needs improving, or maybe needs changing altogether? A total of 45 ACADs participated: 18 from the first year and 27 from the second year.

Although each cohort had its distinct personality, ACADs' experiences in the Academy were remarkably similar. Overall, participants reported mostly positive experiences as UW undergraduates. Initially, many of them felt that they were high school students on a university campus, but after the first quarter they started feeling like university students. Although ACADs were still aware that they were younger, for the most part, they were able to "pass" as traditional-age university students in academic and social settings, which came as a source of relief for them. Many felt somewhat insecure about being younger when they entered the Academy but were pleased that no one (professors or other students) in their courses or social interactions noticed that they were younger or cared.

Most participants said that the Academy was an excellent home base for students; they liked the peer group and felt that it provided them with a good foundation for friendships from which they could, if they chose, branch out. ACADs said that they fit into the UW as much or as little as they wanted. Some chose to disengage entirely from the Academy community, while others had mostly Academy friends. Many students mentioned that the UW was so large that there was no single "in" to fit into. Some ACADs said they experienced a loss of social life once they went home, if home was off campus, because campus had become their social center. Many reported that living in the dorms or in apartments close to campus significantly enhanced their early entrance experience.

A prominent link connected the academic performance of this highly motivated population of early university entrants and their emotional well-being. Immediately after entering the Academy, students began to realize that they were no longer automatically at the top of their class as they had been in high school. Each Academy cohort entered the UW with a median high school GPA of 4.0; after their first quarter, the median dipped slightly for each group. Although ACADs were still achieving significantly higher grades than most UW undergraduates, they reported that it was difficult to get used to working hard and still not necessarily earning a 4.0. Although many ACADs spoke at length about how stressful their academic transition to university was, they enjoyed the fact that they were learning in their classes, as well as participating in academic discourse, and they especially appreciated the intellectual challenge without having to do the mundane academic tasks and rote learning that they described as "high school busy work."

The next study (Noble & Childers, 2008) was designed to assess the elements of optimal match that were best suited to different age groups of early entrants and to further develop the theory of optimal match that was propounded by Halbert Robinson in 1977. With four cohorts of EEPers and ACADs then in residence at UW, it was possible for the first time to compare students across a variety of dimensions, including their assessment of the transition and support services available to them in the EEP or Academy. In May 2006 all current EEP ($n = 56$) and Academy students ($n = 125$) were invited to participate anonymously in this study. A letter and email describing the study and requesting participation was sent to 181 individuals, of whom 52% (nEEP=32, nACAD=70) returned completed questionnaires.

The authors designed a 15-page, 62-item questionnaire that focused on participants' assessments of their educational and work experiences, friendships, family and love relationships, as well as their identification of their own talents and the UW activities in which they participated. Participants were asked a variety of open-ended and Likert-scaled questions; the latter used a 4-point scale to discourage neutral responses. Sample questions included: What was your main motivation for entering university early? How influential were your parents to your decision to enter university early? In your experience, what are the benefits and detriments of being EEP or Academy students? Do you ever emphasize or downplay that you are an EEP or Academy student? Did you experience an uncomfortable level of pressure to succeed academically by parents, friends, EEP faculty/staff, Honors faculty/staff,

UW faculty/staff, and/or yourself? What are you particularly good at? What are the three most important traits that you look for in friends and in a romantic partner? What are the three most important values that you seek in employment? What would be your dream job? What do you most want to do with your life? The questions concerning values about career and sought-after traits in friendships and romantic relationships were identical to those asked of EEP graduates in the 2004 follow-up study (Noble et al., 2007) so that comparisons could be made.

This study found that the experience of early university entrance had been extremely positive for the majority of EEPers and ACADs. Despite the intellectual, academic, and social challenges inherent in early university entrance, most EEPers and ACADs appeared to be delighted with their experience. For some, it was the first time in their lives that they felt intellectually challenged and engaged and surrounded by faculty and peers who shared their passion for learning. For others, the availability of like-minded peers from whom to choose friends and/or romantic relationships was a powerful and positive event.

Although the majority of respondents were satisfied with their respective program (EEP=100%, ACADs=76%), ACADs as a group were less satisfied with their transition experiences. This may reflect the maturity of the EEP as well as a number of challenges faced by the Academy since its birth, not least of which was the presence of four different academic counselors in its first 4 years. The Bridge program was also reconfigured annually during this time. In the first year, Bridge included five Academy courses but this changed to two courses in the second year and three in subsequent years. Our original conclusion, that we needed to offer fewer Academy courses in the second year based on student complaints in the first, resulted in dissatisfaction among many second-year students and led us to reconsider our decision. Therefore, in the third year we introduced Academy 198, a course that has also matured based on student evaluations.

Despite the prominence of the UW as a world class, highly regarded Research I University, gifted students in the state of Washington often set their sights on attending out-of-state, prestigious private and public colleges or universities. Thirty-five percent of the respondents in this study (nEEP=17, nACAD=19) said they were not likely to have attended UW had it not been for an early entrance option. This suggested to the authors that an early entrance program can be a major tool not only for drawing academically advanced young scholars to their state universities but also for developing their talents to a high level in a rigorous environment close to home.

This study indicated that young scholars in the EEP and the Academy were doing just that. Overall, they were earning high grades, participating in a wide variety of academic and extracurricular activities, generating high aspirations, and enjoying satisfying friendships. With few exceptions these students revealed themselves to be well rounded, passionate, motivated, and happy. No significant programmatic or gender differences were observed. Of particular interest to the authors was the discovery that males in this study did not indicate the degree of unhappiness within relationships that was reported by EEP male graduates in the 2004 study. Similarities between contemporary early entrance students and EEP graduates were found in the area of values. EEPers' and ACADs' four top-ranked career values (passion, meaningfulness, enjoyment and fun, and intellectual challenge) were identical to those of EEP graduates, although in different order, as were their four top-ranked traits sought after in friendships (sense of humor, intelligence, moral values, and emotional stability). There was also similarity in the top five-ranked traits sought in romantic relationships (intelligence, sense of humor, moral values, emotional stability, and physical attractiveness). No significant programmatic or gender differences were observed.

The respondents in this study included a very small number of disaffected students. This led the authors to observe that early university entrance is not a good educational option for all gifted students – even if they were qualified academically or intellectually. EEPers and ACADs who enter these programs are used to receiving the highest possible grades in the primary and secondary environment, often with little or no effort, and they have to adjust their expectations, study habits, time management, and organizational skills as university undergraduates. Even when they do this they may not earn the high grades they have come to expect. In middle school and high school gifted students often feel happy academically but not intellectually; this condition flips at the university level, a change that takes most students some time to absorb. Age differences also cause many to wonder at some point whether they made the right decision. Age is a salient social factor

during adolescence, particularly when choosing whom to date or which parties to attend. Many respondents said that age ceased to matter once they turned 18, but early entrants who are younger expressed more ambivalence. Still, no EEPer or ACAD chose to return to secondary school even when given the choice.

The authors concluded that the theory of optimal match is sound, but that the practice requires more than a pairing of student ability and academic challenge. All early entrants need a period of intellectual preparation in a supportive and rigorous environment; a peer group; a home base; communication with parents; a faculty and staff who enjoy teaching, advising, and mentoring gifted young scholars; and a welcoming university or college environment. However, programs for younger students, like those in the EEP, need to provide more intensive academic transitioning during the first year, and programs for older students, like those in the Academy, must balance students' competing needs for independence and guidance. Adequate preparation of parents and the institutional environment are also important to the success of early entrants, regardless of age.

Data from this study were used by Childers (2006) to look specifically at ACADs' experiences in university from a talent development perspective. The sample for this study comprised 70 ACADs (40 females and 30 males), ranging in undergraduate class from freshman to seniors. Three talent development variables were explored: self-identified academic and non-academic talent areas; extracurricular participation in university-affiliated activities; and future plans and aspirations. Gender differences were also explored.

Childers found that many ACADs possessed multifaceted talent and interest profiles. Seventy-one percent of respondents identified their talents as lying in two or more academic domains and 84% identified two or more non-academic domains; 69% had declared double majors in disparate academic disciplines. Narratives provided by respondents suggested a complicated relationship among ability, interest, and talent development behavior. For example, gifted students might be adept at but not passionate about an academic discipline or talent domain, or conversely, they might be interested in domains in which they do not possess extraordinary potential. Although ACADs' academic majors certainly related to their self-identified academic talent domains, the one did not necessarily predict or dictate the other. Finally, although ACADs were admitted to the Academy primarily based on their academic potential and achievement, they often identified themselves as talented in many non-academic domains, and it is possible that development of non-academic talents commanded the majority of their passion, time, and energy.

Childers also found that many ACADs participated in university-affiliated extracurricular activities, suggesting that, despite their younger age, they were involved members of the university community. On average, respondents reported involvement in two different categories of extracurricular activity (e.g., volunteer organizations or religious or spiritual groups and sports teams).

Significant gender differences were found, suggesting that gender remains a salient factor for talent development of ACADs during university. Results indicated a gendered split between affiliation with organic and inorganic disciplines within the sciences, with males more likely than females to identify as talented in and also to major in engineering and computer science, whereas females tended to identify with and major in the organic sciences, including the life and natural sciences. In the non-sciences, gender differences were found in respondents' affiliation with the humanities, with more females than males identifying themselves as talented in the humanities' academic domain, in the non-academic humanities-related domains of performing and visual arts, and deciding or planning to major in a humanity. No gender differences were found in students' identification with the majority of non-academic talent areas, including the male-stereotypic domains of athletics and building and fixing things and the female-stereotypic domains of interpersonal and intrapersonal skills. Both females and males reported holding high educational aspirations, although significantly more males than females anticipate earning a doctorate. For those respondents who foresaw partnering and raising children, females were more likely than males to anticipate non-traditional, creative career arrangements for both themselves and their partners.

The final study in this section was a comparative assessment of the impact of early university entrance from parents' points of view (Noble et al. 2008). The purpose was to better understand parents' reasons for choosing early entrance, satisfaction with their students' program, perceived advantages and disadvantages of early entrance, and assessment of the effect of early entrance on family relationships. In May 2006 the authors invited 181 parents of all

currently enrolled EEPers and ACADs to participate anonymously in this study, of whom 52% (nEEP=31, nACAD=64) returned completed questionnaires.

The authors designed an 8-page, 28-item questionnaire that focused on parents' assessments of their children's experiences of early university entrance, the reaction of their family and friends to their decision to allow them to enroll in the EEP or the Academy, and their educational and career aspirations for their children. Participants were asked a variety of open-ended and Likert-scaled questions; the latter used a 4-point scale to discourage neutral responses. Sample questions included the following: When your student first enrolled full time at the UW, how concerned were you about the following issues: younger age, difficulty navigating the UW system, personal safety on campus, and possible negative impact on family relationships? Has your student's participation in the EEP or the Academy changed your family rules or norms? How did your friends and family react to your decision to enroll your student in the EEP or the Academy? Is the EEP or the Academy living up to your expectations? Is there something you wish your student were doing differently? What are the advantages and disadvantages of early entrance from your perspective? What advice would you give to other parents considering early university entrance for their students?

Parents' reasons for choosing early entrance reflected their children's educational needs. In rank order, the three factors most often seen as "very important" or "important" by both groups were students wanting to come (98%; nEEP=30, nACAD=63); students not being challenged, academically or intellectually, in their previous schools (75%; nEEP=28, nACAD=43); and students' social unhappiness in previous schools (44%; nEEP=18, nACAD=24). Only one significant difference occurred between EEP and Academy parents' responses in this area. As compared to Academy parents, more EEP parents reported students' social unhappiness in previous schooling to be a "very important" factor in their decision to pursue early entrance.

The three issues about which respondents were "very concerned" or "concerned" prior to their children's early entrance were students' younger age as a social hindrance (39%; nEEP=11, nACAD=26); students' difficulty with career and life goals (34%; nEEP=10, nACAD=22); and students' difficulty navigating the UW system (32%; nEEP=7, nACAD=23). The majority of respondents (77%; nEEP=28, nACAD=60) were not concerned about the possible negative impact of early entrance on family relationships. There were no significant differences between the groups, although EEP parents reported less concern about age differences even though their children are younger than Academy students.

The transition from secondary student to university undergraduate is often a difficult transition, even for traditional-aged students. As one respondent said, "At 14, our child was living the life of an 18 yr old, at 15, a 19 yr old, etc." Early entrants have more freedom and autonomy at an earlier age than their peers and questions arise as to whether the student is a high school student by virtue of age or a college student by virtue of enrollment at UW. Many respondents wondered "What are the rules?" "Should there be a curfew and, if so, when should it be?" "What chores should a student be responsible for?" "What is 'age-appropriate behavior' in light of early entrance?" "The UW is not a neighborhood school," one parent reflected, and this added a level of complexity to family dynamics several years earlier than it might otherwise have occurred.

Respondents reported differing levels of comfort about their children's newfound freedom, and this sometimes led to conflict when students wanted more than their parents believe they should have. Because their children were now university students, parents were much less involved in their educational development and decision making and some experienced a sense of disconnection from these important areas of their children's lives. As their oversight of their children's academic progress and social lives decreased, some wondered about the quality and quantity of advising students receive at the university, how differential rates of emotional and social maturation would affect their children's academic progress, and how their children would rise to the challenge of having to make many difficult choices in a relatively brief period of time. When their gifted students struggled academically, as some did during the transition from secondary school to university and often for the first time in their academic careers, or when early entrants stayed late at the university to study or socialize, parents wondered whether, when, and how to intervene.

When asked what were their educational and career aspirations for their children, respondents expressed a wide range of aspirations, with no particular pattern

emerging. They hoped that their children would achieve good grades and earn places in good graduate or professional schools, discover their passions, explore, be challenged to attain their goals, be disciplined and self-sufficient, be life-long learners, be happy, and grow spiritually. Some respondents want their children to become professionals; others hope they will find challenging careers that they enjoy and that are intellectually satisfying, useful, and financially viable. Very few respondents specified particular fields for their students; most said it was up to their children, although as one parent told us, "We don't have any clue about this."

ALL EEP parents were satisfied with their children's program, and as a group expressed a slightly higher degree of satisfaction with the various aspects of the program than did Academy parents. This may reflect the Academy's evolution over its 6 years of existence and significant changes that distinguish the first year from the most recent. As the Academy matures the authors hoped to see increased satisfaction among these parents as a result of programmatic changes.

The authors concluded that early entrance programs are very attractive options for parents of academically advanced students who have outpaced available secondary programs. They are especially appealing to highly educated parents who are willing to follow the lead of their ambitious and talented adolescents in making this educational choice, and who are prepared to trust their children's judgment.

Summary of Research Findings

The Robinson Center has demonstrated clearly and consistently with two different programs that early university entrance is prized -- intellectually, socially, and emotionally – by gifted students and their parents; further, these programs have earned high praise and support from the UW and Washington State education agencies. The body of research reviewed above suggests that early entrance programs are not inevitably initially successful; rather, they benefit greatly from ongoing programmatic evaluation, flexibility, and experimentation.

The EEP, now in its 30th year, has changed significantly since its first two students were admitted in 1977. The introduction of TS was perhaps the most crucial change, followed by changes in personnel and in new policies regarding admissions and retention. Despite these changes, the soundness of the EEP as a strategy for meeting the intellectual, academic, social, and emotional needs of students who have outpaced secondary school has been confirmed in every study conducted by the Robinson Center.

A similar picture of change and success has emerged for the Academy. Like their EEP peers, ACADs are proving themselves to be remarkable young scholars; our research indicates that the Academy is as much an optimal educational match for them as the EEP is for EEPers. Also like the EEP, many important differences exist between the Academy's beginning iteration and its present one.

Finally, the research indicates that three constituents – students, parents, and the institution -- must be well prepared if early entrance is to be successful. Our recommendations are as follows.

Students

As stated earlier in this chapter, all early entrants need a period of intellectual preparation in a supportive and rigorous environment: a peer group that is large enough for them to find same-age friends; a home base in which to congregate, study, and/or socialize; communication with parents; a faculty and staff who enjoy teaching, advising, and mentoring gifted young scholars; and a welcoming university or college environment. However, programs for younger students, like the EEP, need to provide more intensive academic transitioning during the first year, and programs for older students, like the Academy, must balance students' competing needs for independence and guidance.

Academic advising that is tailored to this population is critical. Our studies clearly reveal the multipotentiality of the two groups of early entrants enrolled at UW, a dynamic that can pose a significant challenge to students' decision-making and advising needs. EEPers and ACADs rise to the challenge of multipotentiality in different ways and at different times. Some feel paralyzed by having to choose between equally prized interests; some get stalled and confused. Some get off to a flying start only to change their minds part way through their undergraduate careers. Others stay focused on their original interest and may or may not take

the risk to explore other options. EEPers and ACADS are used to receiving the highest possible grades in the primary and secondary environment, often with little or no effort, and they have to adjust their expectations, study habits, time management, and organizational skills as university undergraduates.

Students' social lives also change as they transition to traditional-aged peer groups and primary relationships take on increasing importance. Further, early entrants are not immune from events that can traumatize adolescents, such as changes in family lives and parental configurations, the emergence of psychological disorders, and increasing exposure to a complex world. The availability of psychological counseling, both formal and informal, from individuals who understand these gifted students is thus of great importance.

Parents

The early entrance experience presents parents with a number of issues and challenges. Parents benefit greatly from information and advice about the social, emotional, and academic challenges that they and their children may encounter during the first year. Comprehensive parent orientation activities at the start of this academic year give parents a better idea about what to expect from the EEP or the Academy, and about the complexities of the university environment that their children will be entering. Opportunities for them to speak with parents of earlier cohorts of early entrants and to support each other during their own transition are also invaluable. Finally, channels of communication with program staff must remain open, especially during students' first undergraduate year. The younger the student, the more intense and regular that communication will be.

Institution

Institutional support will vary depending on the size and location of the college or university that early entrants attend. At the UW, we have found that active collaboration with officers and services that are important to students' lives assists EEPers and ACADs to access these services when they need them. A few with whom we communicate regularly are admissions officers, departmental advisors (to help early entrants' transition to their major department/s), Honors program staff, and staff from undergraduate support services (e.g., student housing, financial aid, student health and counseling). Students who are minors will also need institutional and parental permission to engage in some research opportunities, internships, service-learning projects, or foreign study programs until they reach the age of majority, authorization which program staff help to facilitate. Regular interaction with faculty and central administrators also helps to sustain a welcoming climate in which early entrants feel at home.

Future Directions

All Robinson Center programs are works in progress, and the EEP and Academy are no exceptions. Over the many years that the opportunity for early entrance has been offered to gifted young scholars at UW, first through the EEP and then through the Academy, we have learned much through our research about what works well or not at all, and we have always put the results of our learning into effect. In the next several years we will turn our attention to understanding more fully the talent development processes of emerging adulthood among EEPers and ACADs and to further exploring the reasons why a small number of early entrants drop out, earn poor grades, and/or are disaffected. A third, 10-year follow-up study of graduates of the EEP and the Academy is planned for 2013 to elucidate the complexity of giftedness and talent development in action and over time.

We also plan to study more thoroughly parental concerns about early university experience. Several parents commented that their children's entry into EEP or the Academy placed them in opposition to their friends, their culture, and sometimes to their extended family. The pressure of negative attitudes on the part of friends and family can inhibit some parents from allowing their gifted children to pursue this educational option. What parents can do and have done to resist this pressure remains to be explored. Another question involves parents' levels of comfort with the predictable crises that take place in most undergraduates' lives. These crises might include lower grades than students are used to

achieving in secondary school: the pressure to choose majors and career paths; making decisions about social lives; and becoming increasingly independent. Parents of gifted students, who are used to being actively involved in overseeing their children's educational trajectories, must learn to disengage from their children's lives at the university level. For parents of early entrants, this disengagement comes several years earlier than it does for parents of traditional-aged students. In future studies we hope to elucidate those crises that may be unique to early entrants' parents and those that are common to all undergraduates' parents.

Conclusions

Both the Early Entrance Program and the UW Academy for Young Scholars have assumed a vital role in the education of gifted young scholars in Washington State. Their success has drawn upon the accomplishments of many individuals over the past 30 years. Dr. Halbert and Dr. Nancy Robinson's vision in creating the EEP at UW and their success in lobbying the Washington State Legislature for support via public education funding laid the groundwork. Subsequent years of work by Robinson Center faculty and staff to establish, strengthen, and refine TS and EEP, to develop summer programs for gifted students, to create a regional academic talent search for gifted students in Grades 5–8, to provide leadership for gifted education throughout the State of Washington, and to generate a coherent and rigorous body of research gave the Academy the history, programmatic depth, integrity, and recruitment tools that made the concept very appealing to outstanding high school sophomores and their discerning parents. Equally important were the active support of the UW Honors Program, the UW central administration, and the Washington Office of the Superintendent of Public Instruction.

The EEP and the Academy will continue to evolve in the coming years and to find new, perhaps better, ways of reaching out to and educating the brightest students in the state. Yet, the results of more than 20 years' research strongly suggest that both programs are making a major contribution to the welfare of the students whose higher education is in our hands.

References

Brody, L. E., Muratori, M. C., & Stanley, J. C. (2004). Early entrance to college: Academic, social, and emotional considerations. In N. Colangelo, S. G. Assouline, & M. U. M. Gross (Eds.), *A nation deceived: How schools hold back America's brightest students* (pp. 97–107). Iowa City, IA: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.

Childers, S. A. (2006). *Making the most of university: Gender differences in early entrance students' talent development.* Unpublished master's thesis, University of Washington, Seattle.

Halvorsen, M., Noble, K. D., Robinson, N. M., & Sisko, N. (2000). *Making the transition: Assessment of student satisfaction with preparation for Running Start.* Unpublished manuscript, University of Washington, Seattle.

Janos, P. M., & Robinson, N. M. (1985). The performance of students in a program of radical acceleration at the university level. *Gifted Child Quarterly, 29*, 175–179.

Janos, P. M., Robinson, N. M., Carter, C., Chapel, A., Cufley, R., Curland, M., et al. (1988). A cross-sectional developmental study of the social relations of students who enter college early. *Gifted Child Quarterly, 32*, 210–215.

Janos, P. M., Robinson, N. M., & Lunneborg, C. E. (1989). Markedly early entrance to college: A multiyear comparative study of academic performance and psychological adjustment. *Journal of Higher Education, 60*, 495–518.

Janos, P. M., Sanfilippo, S. M., & Robinson, N. M. (1986). "Underachievement" among Markedly accelerated college students. *Journal of Youth and Adolescence, 15*, 303–313.

Noble, K. D. (1989). Living out the promise of high potential: Perceptions of 100 gifted women. *Advanced Development, 1*, 57–75.

Noble, K. D., Arndt, T., Nicholsen, T., Sletten, T., & Zamora, A. (1999). Different strokes: Perceptions of social and emotional development among early college entrants. *Journal of Secondary Gifted Education, 10*, 77–84.

Noble, K. D., & Childers, S. A. (2008). A passion for learning: The theory and practice of optimal match at the University of Washington. *Journal of Advanced Academics, 19*(2), 236–270.

Noble, K. D., & Drummond, J. E. (1992). But what about the prom? Students' perceptions of early college entrance. *Gifted Child Quarterly, 36*, 106–111.

Noble, K. D., Childers, S. A., & Vaughan, R. C. (2008). A place to be celebrated and understood: The impact of early university entrance from parents' points of view. *Gifted Child Quarterly, 52*(3), 152–166.

Noble, K. D., Robinson, N. M., & Gunderson, S. A. (1993). All rivers lead to the sea: A follow-up study of gifted young adults. *Roeper Review, 15*, 124–130.

Noble, K. D., & Smyth, R. K. (1995). Keeping their talents alive: Young women's assessment of radical, post-secondary acceleration. *Roeper Review, 18*, 49–55.

Noble, K. D., Vaughan, R. C., Chan, C., Childers, S. A., Chow, B., Federow, A., et al. (2007). Love and work: The legacy of early university entrance. *Gifted Child Quarterly, 51*(2), 152–166.

Noble, K. D., Vaughan, R. C., Chan, C., Federow, A., & Hughes, S. (2005). The *UW academy for young scholars: An evaluation of the first three years (2002–2005)*. Paper presented at the Mary Gates Undergraduate Research Symposium, University of Washington, Seattle.

Robinson, N. M., & Janos, P. M. (1986). Psychological adjustment in a college-level program of marked academic acceleration. *Journal of Youth and Adolescence, 15*, 51–60.

Robinson, N. M., & Robinson, H. B. (1982). The optimal match: Devising the best compromise for the highly gifted student. In D. Feldman (Ed.), *Developmental approaches to giftedness and creativity* (pp. 79–84). San Francisco: Josey-Bass.

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