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Knowledge about Students in the USA: 30 Years of Educational Research. An Interview with Alexander W. Astin

El conocimiento sobre los estudiantes en los EE UU: 30 años de investigación educativa. Entrevista con Alexander W. Astin

Por: Eliézer de los Santos Valadez
Universidad de Colima
santosv@cgic.ucol.mx

Graciela Cordero Arroyo
Universidad Autónoma de Baja California
gcordero@faro.ens.uabc.mx

Resumen

En esta entrevista, el Dr. Alexander Astin reflexiona sobre su trabajo en los últimos 30 años. Explica la relevancia de conocer a los estudiantes de educación superior y sus trayectorias escolares dentro y fuera del campus para la toma de decisiones institucionales. El Dr. Astin plantea, también, la importancia de realizar estudios para evaluar la calidad de la institución a partir del aprendizaje de los estudiantes.

Palabras clave: Deserción, evaluación, educación superior.

Abstract

In this interview, Doctor Alexander Astin retraces the work he has done in the last 30 years. He explains about the relevance of getting to know higher education students, since being acquainted

with their school trajectory inside and outside campus, is fundamental to institutional decision-making. Doctor Astin also states the importance of evaluating an institution's quality by investigating the students' learning.

Key words: Attrition, evaluation, higher education.

Alexander Astin is Allan Murray Carter Professor of higher education and work. He is currently the director of the Higher Education Research Institute, University of California, Los Angeles. He studied his Ph.D. in Psychology in the University of Maryland. He is the Founding Director of the Cooperative Institutional Research Program, an ongoing national study of some nine million students, 250,000 faculty and staff members and 1,500 higher education institutions. His areas of interest are: educational policy in the United States; educational reform; values in education; the impact of different types of institutions on the students' development; assessment and evaluation research in higher education. He is the author of 18 books, including *What Matters Most in College?* and 300 other publications in the field of higher education.

Graciela Cordero: We would like to begin making a historical question about your subject of research in the last 30 years. How have you developed this subject of research in the last 30 years?

Alexander Astin: Well, probably the most important factor in developing this was the realization that the U.S. system of higher education has many, many institutions that are very different, so it is like a great natural experiment. In some countries the universities are all the same, pretty much very similar, but in the U.S. there are very different types of institutions, different types of programs, different pedagogy and different curriculum, and so forth. So it was an opportunity to learn how students are affected by the different kinds of programs, different kinds of institutions, to enrich our knowledge about learning in higher education and student development, and what really makes a difference for students.

So, in order to take advantage of the great diversity of institutions, we decided to start with a national sample of three hundred colleges and universities of all types: two-year, four-year universities; public, private, large, small, all over the country. And the research design was to look at the students at the beginning, when they start college, take a snap shot of the student at that point in time, and then to follow the student through college and after college to see how they have changed. And the idea was, do students change differently in one kind of environment as opposed to another? And environment is a very broad concept and includes the type of institution, the type of program, the students' living arrangements – whether they live at home, whether they live at the university- the financial aid that the students have, what impact that makes, the kind of peer group the students are exposed to, the faculties, teaching methods, the courses the students take, the activities that they participate in, and so forth. So there are many, many different aspects to the environment that might affect how the students develop, how they learn, how they change over time. So, the research program really incorporated three ingredients: information about the students

at the point of entry, follow-up information to create longitudinal data to measure change, and information about the students' environment. So, those were the three components that we felt were necessary to do this kind of research. So to cover all the different environments, we had three hundred institutions, we had a survey of the entering student, the freshmen survey, and then follow-up surveys at various points. We did one follow-up after three months; others after four years, and others at nine years later, so different periods. But normally we would follow-up after four years, around the time that the students would be expected to complete their undergraduate work.

Well, when people found out about this program, they wanted to join, so the participating group has grown from three hundred to more than seven hundred colleges and universities. And our research has broadened to incorporate a wide range of student outcomes, because when you ask people what is the purpose of undergraduate education? What qualities in the student are we trying to develop? You get many different answers; nobody agrees entirely on what the goals are, so we decided, rather than trying to make this decision ourselves, we would just measure many different aspects of the students' development: affective qualities, cognitive qualities, their behavior, and so forth, in this way we would have a wide range of outcomes to get a comprehensive texture of how students are affected by their environmental experiences. And we have conducted a number of studies that go five, six years beyond the undergraduate years, so we have done some studies in graduate education, professional education, and so forth. Well, that is a long answer to your first question.

Eliézer de los Santos: How have your findings been taken into consideration by university administrators?

AA: It was my impression that the college officials and university officials, the presidents and the top administrators, and the trustees, and so forth, were not very aware of how the students were influenced by their programs. They would just make a best guess “well, this is a good curriculum” or “this is a good teaching method” or whatever. And our idea was to give information from our studies to the policy makers, so they could create better experiences for students, better environments. To give you a simple example, we found that leaving home and living at the university is a very positive experience for students, they develop more, they change more, instead of living at home and just traveling to the university and taking a course and going back, or holding a job and coming at night for a course and coming back. So we reported this finding in journals and speeches and so forth, and many college officials and boards of trustees decided to build more facilities for students to live at the campus. And, so this is an example of what we intended, if we can discover some important findings about how the environment affects the student, then hopefully the policy makers will pay attention to this and create a better experience for students. I cannot say we have been entirely successful in that, a lot of our findings are ignored by the professors, particularly by the professors who unfortunately do not read the literature that we create. The administrators and the people in the field of Student Affairs read the literature. I do not know whether there is an equivalent in Mexico to Student Affairs, that is a pretty unique American thing.

The history of Student Affairs is very interesting, in the early colleges in the United States, the colonial colleges, the idea was for the parent to send the child away and most of these early colleges were residential colleges, they would leave home and they would go to the college, and the college would take care of the student. And the Latin phrase was *in locus parentis* “in place of the parent”, so the college acted like the parent. So they had rules and regulations and the students could not stay out late and the men could not bring women into the residence halls, and so forth, they had a lot of rules and regulations. And there was a lot of discipline and so forth. And that lasted for many, many years, and what I think what happened was, that as higher education began to expand and more and more people began to go to college, there was a need to expand colleges, make them larger and the professors could no longer worry about the student’s social life, and whether they were having women in their residence halls or drinking too much alcohol or whatever might be. So they begin to get specialists, professionals, who would worry about the non-academic part of the student’s life and so, some of the larger institutions in particular, begin to hire counselors and so forth to take care of the students' non-academic life. And then this, like any other thing, expanded, so the Student Affairs now in colleges and universities, does not worry too much about discipline anymore - there is some concern about discipline in the religious colleges... and during the 1970’s there was a lot of concern of illegal drugs...- but basically the Student Affairs, now that is called Student Activities, Student Affairs, and Student Personnel –those are the terms that are used to describe these people- are much more concerned about other things. Everything from the living conditions for the student, the kind of residence halls that they have, the food that they get, the social activities, the student clubs and organizations, the student government, and all this, the sports, all these kinds of things became the responsibility of the people in Student Affairs, so there was this division between Academic Affairs, which were the professors, and Student Affairs, which was everything else outside the classroom. And this is a sort of unique American thing, the Student Affairs became very big, but it originally started in the residential undergraduate colleges. But now even the commuter colleges, the community colleges and so forth have a lot of Student Affairs, they have clubs, organizations, the students' newspaper, and all this... this all falls under the Student Affairs.

GC: Have your findings helped to define the role of the Student Affairs office?

AA: Well, what we have found in our studies is that most of the learning does not occur in the classroom. It occurs outside the classroom, so now we are beginning to think that there needs to be more of a coming together of Student Affairs and Academic Affairs. If the learning is taking place outside the classroom, then the professors do not have much to do with that, so there should be an alliance, a collaboration between the Student Affairs and the Academic Affairs to create the ideal climate for the student. It is not a wide spread movement, but I think there is a realization that you can not divide the student into two parts, that is not reality. And it is much better if everybody takes part in the education of the student, and that we do not think about the non-academic and the academic as being separate.

Anyway, there were really two motives in starting this research: one was, as a scholar, I was interested in learning how students are affected by their college experience; but as someone who is concerned about our country and our society and in our economy, I also

wanted to create findings which could improve higher education, so the policy makers and the professors could create better experiences for students. So I had those two motives in starting this project, because it had been my impression that most policy makers had no information about their programs, there was just “Well, yeah I can describe it for you, but I really do not have any evidence of what students are influenced by”. So our job as we saw it, was to provide evidence to feed to the policy makers and the practitioners.

GC: We would like to ask you about attrition. First, we would like to have a definition of what attrition is, and then talk about what has happened with attrition in your country. How do you develop your research in this subject?

AA: This is a concern of most institutions, there are few very, very elite institutions that have very little attrition, but most institutions have some attrition and many have a lot, and it is a great deal and attrition is getting worse. Every ten years we check it and it gets worse. We define attrition in different ways, depending upon the problem and the situation and the data, but the basic idea is the student does not complete the program. Now the perfect definition of attrition would be that the student... we will wait until the student finishes the program or the student dies. Then you have the perfect definition, okay? Of course by that time we are all dead, so that does not work very well, so there is no ideal definition for a researcher, so what we do is we compromise, and we allow what we think is a reasonable amount of time for students to finish their programs, and then we wait and we see if they have finished. If they have not finished, then we consider them as a drop out. If the student is still enrolled after the period of time, then we can call him one or the other but after, in the U.S., after about six years there are very few students still enrolled. They have either dropped out without completing or they have finished their programs. The four-year completion rates have declined dramatically, and five-year completion now is more a standard. Now, one of the problems of course if the student leaves the institution without a degree or without a certificate or whatever program it is, it is important to track them to see if they go to another institution and eventually finish. Those studies have become very expensive to track the students, and I suppose from the point of view of the first institution it does not matter that much; if the student leaves without a degree, that is attrition; even if they go somewhere else, from the point of view of that institution we have not succeeded with this student, we failed. And I think there is a value in studies that look only at the first institution, from the point of view of a given institution those are very important studies. How many of our students finish on time? And of those who do not finish, why do they leave? And so forth. From the point of view of state policy or federal policy it is more important to track the student to see "well, maybe they finish some place else" in which case this is not a failure, this is a completer, so two colleges or three colleges have contributed to this success. But that, as I say, that is difficult to do and we do less of it today than we used to because of the very high cost of tracking students down. But we should be doing more and this is a very unfortunate situation that the people who fund research have not understood the importance of tracking students. So, the fact is we know very little about what happens to students who leave without completing their program. And in the U.S. you can, you really have to identify different populations of students. There is the traditional college student who finishes secondary school and goes to college the same year or maybe waits a year, and is intending to get a bachelor's degree. How do you call it in Mexico?

GC: Licenciatura.

AA: Okay. And in the U.S. that is largely a liberal arts degree. We used to have much more specialization in that, we had technological universities, we had a music and art schools, we had teachers colleges, two hundred and fifty teachers colleges. And from the 60's until the present we have almost no teachers colleges anymore, almost no more technological universities, even the ones that still call themselves "technological" have a liberal arts program basically for students, at the undergraduate level. So there are very few colleges left now in the country that offer a specialized undergraduate program.

GC: Is there any national policy about attrition?

AA: Well, no. Another thing to understand I think, about the U.S. system that is unique, is that we have no ministry of education or no ministry of higher education, nothing like that. So instead, we have voluntary associations mostly in Washington, D.C. –near the money, as we say- there are private voluntary associations and the colleges and the universities join these organizations and pay dues that support the organization. And the major one for higher education in the United States is the American Council on Education in Washington. Most of the colleges and universities belong to the council and they pay dues, and the education associations also belong, so the American Council on Education is called an *umbrella organization* because it tries to cover all of higher education, so it is the equivalent of a ministry, but it really does not have any power, other than what power the colleges give it, which is not much. Another thing, which is I think is unique... I remember when I was in China a few years ago, we met with many Chinese higher education officials and one of them asked me "How do you keep the government out of your universities?" and I never really thought about that, and I suddenly realized in that discussion that it is our process of quality control, which we call *accreditation*, and it is done on a peer-review basis.

ES: Can you explain the process of accreditation of higher education institutions?

AA: The government does not accredit institutions or does not decide "You are a good institution or a bad one, or your are qualified or you are not qualified." That is not a government, even a state or federal government function. It is a private voluntary function where UCLA every eight or nine years has to be reaccredited. So the accrediting association selects a team of visitors, they might select from the University of Michigan, from Harvard, from University of Illinois, from Berkeley, whatever, and it puts together a team of peers, people in similar institutions and they visit UCLA and they look at our programs and our finances, and everything, and then they make a recommendation, that we are still okay, we should be accredited or put us on probation "well, we do not know, you have got to fix some things" or in the extreme case they take our accreditation away. Now most times that these teams visit a campus they say "well, we recommend reaccreditation," but they will also give feedback and say "you need to fix this, you need to fix that", and so forth. So it is an important quality control activity. So this is how we keep the government from interfering too much in our activities, which I think is a very positive thing, and is also fairly unique in the United States, I think, the accreditation system.

ES: According to your findings, what factors predict attrition?

AA: In the United States, poor preparation, academic preparation is the number one factor that predicts attrition. If the student is not well prepared there is a much greater likelihood of attrition. To give you a concrete number there, the best prepared students complete their undergraduate work in four years, at a rate of about 80%, 8 out of 10. The students with the worst preparation complete about 10% in four years, so this is a huge difference at the extremes of preparation. So one of the problems we have in this country, it is a problem of educational policy, educational equity and so forth, it is that people with poor preparation are disproportionately poor and disproportionately coming from either Hispanic minority groups or black minority groups. So it creates an inequity in our educational system, so that you have much higher attrition rates among what we call “Latino” (that is the politically correct term) a majority of whom are Mexican-American in their background. I think 60% of what we call “Latino students” in this country are from Mexican heritage and in California it is more like 80 or 85%. And also in the secondary school the attrition rate is very high among Hispanic groups, particularly Mexican-Americans, it is very high, much higher than African-American. And we think the problem has to do with the sort of history of these groups. In the case of many Mexican immigrants they came for work, for jobs, so as a result, if the child becomes 16 years old, sometimes “well, you could leave school now, it is legal, and get a job and bring money”, so it has a very high value. And the same in college, if the student has some difficulties “then why you do not just quit and get a job and you can bring money to the family” so it has a high value. For blacks, it was the opposite thing. In the days after the Civil War, when the blacks were supposedly no longer slaves, they were still discriminated against, very seriously discriminated against, and education represented one way to get ahead, they could go to school and get educated and get a job and that kind of thing. So education took on a very high value for the black population, as a way to combat discrimination. So it is a theme of history for these different groups, so I think that helps to explain why, because Hispanic students are more likely to drop out because of the value of work, African American or blacks are less likely to drop out because education is seen as a very, very important thing, historically. But the racial or ethnic background of the student is not the major factor at all. The main reason why Hispanics and blacks drop out so much is the preparation, that is the main reason. And when you take preparation into account the ethnic differences are very small in dropping out. Sex is also a reason for dropping out; men are more likely to drop out than the women who have equivalent preparation.

ES: What other factors predict attrition?

AA: Poverty is a small factor, but the biggest factor beyond preparation is the education of the parents, so if the parents are not well educated then the student is really handicapped, even if the student is well prepared, many of these students lack what social scientists call *social capital* or *cultural capital*, they have not learned how to get along in college and what college is all about, what to expect and how to cope when you are having problems, because the parents have no experience with it, so it is a new thing for the family. So the students do not have the “know how” to get along in college. And that is an equity issue too. I mean we really ought to have better programs and guidance and these sorts of things

for students whose parents never went to college, what we call *first generation students*. So that has turned out to be a very powerful factor in attrition. If you take two students of exactly the same preparation, the same sex, the same race, one student has college graduates for parents and the other student has parents that never went to college, the second student is at a disadvantage. They are more likely to drop out from high school, they are less likely to go to college, if they go to college they go to a less elite college and even if they go to the same college they are more likely to drop out than a student who has parents who went to college, so that is one of our major factors. Is this true in Mexico? I bet it is true, and that may explain some of the differences between the rural and the urban regions, the parental knowledge about education and their experience with colleges and universities and so forth, that may be a big factor.

ES: What effect do the fields of study have in attrition?

AA: Fields of study do not have much of an effect. This is one of the –I think- the advantages of a liberal arts education, for example, engineering has a very high drop out rate, but the students do not drop out of the college. They go to a different field of study and you can do this in the liberal arts, it is much easier. And I think Mexico has more the European system, right? If you are going to medicine you start out in medicine, you do not start out on liberal arts first, and so what is it, a six-year program?

GC: Five to six years.

AA: Yeah, so that is the European model, and so if the student does not like it or does not do well they have to go out and start all over again. And so, the one advantage of the liberal arts is that you can transfer some of your course credit to a new field of study and that is a real advantage of that. Now of course it does not work the same way in all fields. In the fields where knowledge is cumulative like the Sciences or Mathematics or Foreign Language, it is more difficult to move into those fields because you have missed some of the beginning knowledge. But other fields, for example the most hospitable field is Business, so you can start in any other field; if you do not like it, you can always go to business without much of a penalty, you do not pay much penalty, because the knowledge is not cumulative.

GC: Talking about the evaluation of the quality of higher education institutions, we know that you also have very important work in this field. How can we define quality? How can we evaluate the quality of a higher education institution? What do we need to take into account in this evaluation? What is your experience in this field?

AA: My experience is that most people do not listen to me, and what I have been saying for many years is that we have very poor measures of quality here. And most of them are measures of either the reputation of the institution or of its resources, and in the reputation approach we might do a survey or a poll “which are the best colleges?” so it is like an opinion poll. And of course Harvard will always come out at the top and so forth, and there is a ranking and a packing order of institutions, based on reputation. The other way for people who like to be more objective, they say “Well, we will look at how much money you spend or we will look at how much your faculty publish, how many papers they

publish, or we will look at –and this is the most common way- we will look at how well prepared your students are, and if you are very selective in your student body, then that makes you excellent”. You see, the student here is used as a resource, which I find very interesting. Well the problem with these traditional ways of defining excellence is that they do not necessarily tell you anything about the education, they tell you about the resources or the reputation, but they do not tell you much about the educational program and how students are affected, so I have been arguing that we should define quality in terms of educational outcomes. If the student learns and develops, then this is a high quality experience, if the student does not learn much, does not develop, then it is a low quality. And to me, if you use an analogy from business, the quality of a firm is defined by its profits, and in education our profit is learning and we need to measure learning, if we are going to have a measure of quality which is appropriate to our mission. Well it is difficult to do that, you know, to follow students and to see how much they are learning, so it is easier just to say, “okay, what are the test scores of the students who been admitted?” That is the resource approach or how many publications your faculty have? Or how large is your budget? or whatever, and we use that because it is easier. That always reminds me of the... there is an old joke about a drunk man who is standing on a street corner under a street light, and he is looking down at the ground like this and so somebody comes up to him and says “what are you doing?” he says “I am looking for my keys to my apartment, I dropped my keys” and so someone says “where did you drop them?” and he says “back there in the middle of the block”, and “so what are you doing here looking for your keys here?” he says “because there is more light here”. And it is easier, so the fact that it is easier to count publications or to look at your budget does not mean that that is the best measure or the best indicator of your quality. So I am not persuaded by the argument that it is difficult to measure learning and therefore we should not do it. If that is the mission of the institution and that should be the basis for judging our quality and our excellence, which again suggests me we need to get information on our students when they enter, and we need to see how they have changed, and then we have to compare the two and see how the student is learning. [...] And now the institutions pay for it because they want the information, so it is good that institutions are willing to spend money to learn how their students are developing. So I think that is a much better way to judge quality. Now there is a compromise and that is, if we learn from our studies that certain educational practices are very good then that would be another way to look at quality. Do you use good practices? Do you follow practices that the research has shown to be effective? Or you use some ineffective.

ES: In terms of judging quality, what have you found out are university practices that prevent attrition?

AA: What we have found out is that the most important practices are the ones that get the student engaged. Anything you can do to get the student to exert effort, to put energy into the learning process, the better. And this is what we call student involvement, and it is the most important thing in attrition and retention, it is involvement. In fact, the theory of involvement that we have developed came out of our studies of attrition and retention, and we found that everything that increases retention, like living on the campus, is something that gets the student more engaged in the process. The most disengaged student would be one who lives off the campus, who has a job and a family and drives to campus to take a

class and then goes home again, that is the least engaged. The other extreme of high engagement would be a student who lives at the campus, who studies a lot, spends a lot of time interacting with the other students, who joins organizations, that is a very engaged student. And almost any form of engagement is a positive thing for students, we have found. So if you cannot study longitudinal student changes, at least you can look at how engaged your students are: the more engaged, the better. Just to ask them how much time they spend studying, discussing their course material with each other, participating in student organizations and this kind of thing. And the more engagement, the better. Because some student organizations are actually better than classrooms. For example, a newspaper or the debate club is a very powerful experience for students to work on the newspaper, to be a member of the debate society, very powerful experiences. So some of the extra-curricular activities or the non-classroom activities are at least as effective as the classes. As a professor I hate to admit this, but this is true. Because the peer group turns out to be a very powerful part of the student experience; anybody who has children knows how important the peer group is. And the same goes for university students; they have a lot of influence on each other. In fact, most of the campus unrest and campus protest - which I know in Mexico it has been a big thing over the years, Mexican universities are known for student activism-, a lot of this is just a peer group phenomenon, the students influence each other. Now the professor can participate, but basically it is the students influencing each other, I think. And we found that being a student activist is a positive experience too.

ES: From a particular point of view, activists are not very good students.

AA: Well, if an activist is a bad student, I do not know, it depends on your point of view, depends on your politics I guess. In fact in Japan - now I do not know whether this is still true because I have not been in Japan for almost ten years-, but the last time I was in Japan I met with a lot of higher education officials and they admitted that the student activists were the ones that the businesses recruited, because they said these are the best sales people, they put more energy into their work and so it was a benefit to the students to get employment if they were activists in Japan.

ES: If we put together attrition-evaluation, what is the state of the art today about attrition? What do we know? What we do not know? What have we learned up to this date? Which are our challenges in the coming years?

AA: Well, certainly our best evidence about attrition and retention is this notion of *involvement*, so we all need to pay much more attention to how our students are using their time, what are they putting their energy into. Just by being a professor in a classroom does not necessarily tell you much. So we need to find out from the students, what are you doing with your time? How much time do you spend watching television? Which is not a good thing, our evidence on that is very clear. In fact we think that is the main explanation for the decline of the political left in the western world, actually it is television. And we have some evidence for that actually, that it has made people more passive, less active, less engaged. It has made much more materialistic. Materialistic values have gotten much stronger among young people than they used to be, there is less idealism, less altruism, much more of a materialistic perspective; and we have evidence from many studies that this has to do with television, which I guess now in the Western World everybody has

television almost, even the poorest people have TV. And I think we have paid a price for that in terms of the values, because the values that are portrayed are very materialistic. So you have disengagement, materialism, passivity; and political engagement by students today in the United States is at the lowest point in 35 years of our studies. We started these studies 35 years ago and it is lower today than it has ever been. So people do not care and that is very dangerous in a democracy if people do not get involved, if they are not engaged. So, academic engagement is lower than ever and political engagement is also lower. So, as an educator I see that there is a huge problem and a challenge for the university to get students engaged. For retention that is the number one thing, it is to get them engaged; find creative ways to engage students in the process.

The second would be academic preparation. And of course here we have to work with the secondary schools about getting students prepared so that they have the skills that they will need, intellectual skills and the motivation. It is both, it is not just simply the intellectual skill that will enable students to become engaged with their academic work, because without that engagement there is a much higher likelihood that they leave before they complete the degree. Part of it is that it is important for students to reach a point where there is a joy of learning, where there is a pleasure in it. It is not just labor, but is something that... is meaningful to them. It is not “well, I have to do this to become a doctor or an engineer”, but rather “this is enjoyable, this is interesting, this intrigues me, I want to learn more” and it is developing that attitude that is so critical, because today there are fewer students who come to higher education with that attitude, so we have to start working with the schools to develop more of a love of learning, more of an enjoyment, more of a positive attitude towards it. So I would say that from the research, those are the two challenges: engagement and preparation, academic preparation and engagement. And if we use that as a sort of theory about how to improve retention I think it would pay off. It is really a simple theory: engagement and academic preparation. But I think it would pay off, all of the research suggests that this would be a very helpful way to increase retention.

While we do know a lot, we do not know enough to predict who will drop out and who will not. If we take the extremes of the best prepared and the worst prepared, we can predict pretty well, as I say, 10% versus 80%, but in the middle it is very difficult to know who will drop out and who will not. I think one of the difficulties is that there are many, many reasons why students drop out, and they are very complex reasons: issues having to do with the family, with finances, with illness, with boredom. A huge problem in the universities is boredom, and of course that reflects a lack of engagement. So if the student is bored with the courses and bored with the books, we have to be much more creative in finding ways to attract their interest. So I think that is one of the most serious problems. You see, as a psychologist I was brain-washed when I was a graduate student to think “well, it is only the cognition, we just have to have intelligence and that is enough”, but I learned since then that we need the affective side, we need to work on boredom, I mean boredom is a very affective quality, but it has to do with our thought process. Curiosity is another affective quality, but it has to do with our thinking, so this division between the cognitive and the affective is an artificial one, much like the division between academic affairs and student affairs. It is not reality. Reality is that we always think but we also have feelings about the thinking. So the two go together, and we are not just dealing with a computer. The idea that we can model the mind with the computer is absurd because computers cannot feel,

and feeling is a very basic part of experience. If we ignore the students' feelings, then we are in trouble. Because I think our problems as a society are much more feeling problems than thinking problems, frankly. And so we need to work on both together, rather than separating the thought from the feeling. So I think the training of our professors needs to take that into account. The professors have to become more aware of the importance of the students' consciousness, that is, what they experience, how to get them engaged. If they do not want students to be bored, they need to understand how important the interest and motivation of the student is. The student's interests, dreams and hopes, and aspirations and all those affective things are very important to understand, because we want to capture the students' interest, we want to pique their curiosity. Now I realize that is just one point of view. Another point of view is "well, here is the course work, here is the university, take it or leave it, sink or swim." But if you take that attitude, then you are going to have a very high attrition rate, that is the problem. So if you want to do something about the attrition rate, you have to become much more active in your educational program.

ES: Is it possible to have special pedagogy with students at risk? Is it possible to make a curricular effort to work with students at risk? Does this favor equity?

AA: Well, I think this is why it is important to individualize this for each student. So I do not put you in a program because you are a woman or because you are black or white or whatever, I put you in a program because of your motivation and your preparation and the unique qualities about you. And I do not put you in a program because your parents do not have a college education, but if you do not know about higher education you do not know much about how to study; in other words it is a personal quality, then I will give you a special program because you can use that program, and the fact that the children of poor people are more likely to have these qualities is to me beside the point. So you are not treating them because they are poor, but because they have poor preparation or they have poor motivation or they are ignorant about education and they need more counseling to learn how to get along in the university and that kind of thing. So I think you can get around the unequal treatment thing by individualizing it for each student. And in that way I think is much more fair. It is a similar idea to *placement*. Let us, say, take mathematics: some students come and they are very good at mathematics, so they should not take the introductory course. That is a waste of time, put him in an advanced course. Other students come in with very poor preparation in mathematics so they need to get into a remedial course. And then most of the other students are put in the regular course. But it is based on their individual inner qualities. You do not say "well, your are black so you go into the low course." You see what I mean? Or "you are an Indian so you have to go into the low course." You get the idea? You individualize it. And of course what happens is that a disproportionate number of Indians and blacks will go into the low course, but that is just the reality. Because of their upbringing, their family and the schools they went to, they have less preparation; but it is not true of all. Someone goes in the advanced and someone goes in the regular. And of course, the idea is that everybody gets the best possible educational experience for them, for their needs. Well I think the same goes for any kind of individualizing, you individualize it in terms of their cultural capital or their motivation or their study habits or their preparation level.

Universidad de California, Los Angeles

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