Welcome. You are listening to the UC Davis Center for Poverty Research seminar series. I'm the center's Deputy Director, Marianne Page. This series brings scholars and poverty experts from around the country to discuss their work on the United States poverty and poverty research. In February 2014, we hosted Herman Van De Werfhorst, Professor of Sociology at the University of Amsterdam.

Where he also serves as Director of the Amsterdam Center for Inequality Studies. Van De Werfhorst studies the sociology of education, social stratification and mobility, and labor market sociology. Here he is presenting his seminar. Early selection in educational systems and two forms of inequality.
>> The general story that I wanna talk about is, is about issues about educational systems.

How they look in a country and how they differ between countries. That's the main story that I'm the main issue that I'm interested in the moment. I'm from Europe, and in Europe, every single country has its own educational system. You might say that's the same here in the U.S. with all the states having their own policies at the state level.

But the differences are far, much, much, much greater than the differences between the states in the U.S. as far as we see it. Although I know that some states have a German type educational system. We have, we have very different systems. In Europe, one of them is the German pipe system, we've got a very early selection in different tracks or, or I should better say school types.

Compared to Scandinavia systems where kids go to school together until the age of 16. Which would be, could be called a comprehensive school system. So the dimension of education system due to the extent which, gives a track to different school types, is really the central interest of of today's talk.

The reason why this is I think relevant to study, is not only academic. In the sense that we get to learn more about how inequality is produced, between generations. But also from a policy perspective, I think it's quite crucial to know how educational systems play out. In terms of the distributions of skills or other kinds of inequality.

So my, my research in general is really about looking at educational systems. Look at several characteristics of those systems, one of them tracking, another one is the, the functional orientation of systems. And how that relates to the labor market for example. And I'm also interested in civic outcomes.

And today we'll talk about inequality by social background in in educational achievement in particular. Skills skill achievement and also inequality civic outcomes. I think that's a very understudied phenomenon, civic outcomes. Certainly when it comes to institutional characteristics of educational systems. I don't there's any study on that yet.

So hopefully I can contribute a little bit to that to that literature by emphasizing that, that we have to look at education systems. Not just by focusing on one sorta inequality, but try to understand how it, how it relates to different sorts of outcomes. In order to understand how well an education system is functioning.

So I, I talk about functions of education sometimes and reducing inequality or offering equal opportunities as one function of education systems. Just like it is to produce citizens, or produce, create, create some civic awareness among, among school kids. So that they can become active engagement, acti, actively engaged citizens in their societies that they will live in.

So that's the, that's the broad picture. And just to illustrate, what I'm talking about these are, whenever I, whenever I go to the U.S. and talk about tracking. I, I, tend to think that the American system is not so very tracked. And people say well you can't be sure.

You can't be truly, you can, you can't mean that, because you know, we have a track system too. I know, I know the literature don't worry. But it's also important to realize what it looks like if you live in a different country, how tracking is, is happening. And this is these are two schools that are in my suburbia town just outside Amsterdam.

At the age of 12 or after grade six kids decide whether they, or not they decide they get the opportunity to go into one

school or the other. And one school is the provocation school, this one. And this is the the academic general school that prepares for higher education.

And this, there's this rigid selection right? The, this kids going to these separate schools at age 12, they might never see each other again unless there's some private involvement. They might go to sports clubs but there's no state or government oriented policy that would bring these kids together.

And that separation is I think, very rigid. And you might say, it might be necessary even when we wanna teach mathematics or languages, but even that is contested. I can tell you and I will show you, but it, but it might also lead to. It's also implicated by the system is they also have separate sports classes and separate civic study classes.

Things that you wouldn't think of. Just for, the, the fact that you wouldn't invent just for that reason. But it's just a byproduct of the very rigid form of selection. That, that, prohibits kids to meet each other, completely. It's a very physical separation. These schools are, I think maybe, a kilometer, or maybe two kilometers apart.

Maybe a mile. And but, but a very different different friendship structures, and very different opportunities for later educational careers. So, the selection is really rigid, far more rigid than you have in the U.S., is my impression. And in that sense this is the kinda tracking that I'm talking about.

It's tracking between schools, rather than tracking within schools. That means that, in that comparative picture that I'm trying to draw, I can't really say that I've captured all tracking. Because I haven't captured the American tracking which is certainly there, right. I'm not denying it or downplaying it at all.

But its limitations let's say if you want to compare countries. You could say that every country has some form of tracking or another. Even in Scandinavian countries, kids are at some point separated within their class like ability grouping within their classes. So this one form of selection always happening I would say.

But this is I think a more rigid form of selection. So if you think about tracking I think there are several questions that we need to ask. First of all, we need to know whether tracking is related to equality education opportunity. And there's a quite a bit of big literature on that given that we have now very nice data sets.

Including the PISA data that you might know and the TIMSS data. These are student assessments of mid-teenagers, 15 year olds, or grade eight students. And those data are collected in many countries. The PISA is I think they are now at 60 countries. The last PISA was in 2012.

It's collected every three years among those 15, 15 year old age group. The TIMSS is a bit smaller, but is also collected in many countries and it is als0 collected in grade four and grade eight. So different stages of the educational career. There's PIRLS reading assessment, literacy assessment of younger kids.

So there's lots of data available to compare countries and to relate inequalities of different kinds. So we know quite a bit on the inequality of educational opportunity, although there are some serious omissions Then another questions of course whether, whether tracking is efficient? It might be efficient in the sense that it maximizes skill production kids do just better.

Performance is better if you separate them because they can be taught at the level they need. And if you separate the bright kids from the less bright kids you might get a more efficient or more effective teaching. Teaching or learning process. That's this one argument that some people make.

And then another as I mentioned outcome that I want to study civic engagement of, of, of, kids, of young, youngsters. The labor market is another interest of mine, but I won't talk about that today. Our first start with some descriptive issues, pictures on, on the relationships on. Sorts of inequality that need further understanding, further clarent, clarification.

And to do that I, together with a colleague of mine, I created an index for tracking across countries. That's very

befitting cross countries, between countries. so, this is based on three indicators that are available by the OECD, the Organization for Economic Cooperation and Development. And lets see age of selection in the system, the 8 to 12 year old selection as we have it in the Netherlands.

Age ten in Germany, even more rigidly selected, the number of tracts that are available to a typical 15 year old student. And the proportion of compulsory education in district. Of course, these three indicators are strongly correlated. So we made an index out of them, which gives us much nicer blots than if we would take one of those indicators.

So this is an index of tracking. And just to illustrate here in the United States and Canada, that don't have a track system. again, I'm not saying that there's no tracking happening, but there's no between school tracking. And of course, I should say, and I'm aware that I don't, I don't talk about segregation.

Which is also a form of inequality that, according to some people, is just producing the same kinda inequality as tracking. And if you look at the companies that track very rigidly, is Germany's very, is on top here. And Netherlands is, here NLD. That's my country. So you see quite some variation: the average is 0 and the standard deviation is a bit less than one, on this indicator.

Anywhere from highest distribution. So that's just the, that's this variable here, the tracking index. Here just as a descriptive plot regressed mathematics performance on social background indicator. Using the number of groups in the household because that's that's known to be the best predictor in those in those data sets.

And it's also available in grade four in the theme so that makes me makes it unneeded, need to use it. But you can replace it with occupational status of the parents, the parents' education, you, you get more of the same graph. Which is that this is, this is regression slope that's this this this y-axis.

So you see that with more tracking you see the regression slope of, of mathematics regressed on, on the number of groups in household is positive. And that's both the case in TIMSS grade eight students and in PISA 2009. So so we see that there's a positive slope but there's also quite some scatter around that slope.

So we can't say that indicators perfectly predicting the inequality level in the country. But at least there's a positive association. And I think the literature thus far is basically showing us that this is there. And then control for all kinds of variables, and I can show you some evidence of my own research that shows it cross sectionally at least.

There's definitely a positive association between tracking and inequality for opportunity, in terms of mathematics achievement. Right? So that's, that's the positive slope that I'm interested in. As a descriptor of the as we would call it, something that needs explanation. Just to illustrate another form of inequality. This is the difference in civic engagement for two groups of people.

People that graduated from academic tracks in high school. And those that graduate from vocational tracks in high school. These are just European countries that have some form of differentiation in higher education. Including the Scandinavian countries, where they do have vocational education after age 16. And this is, this is also an inequality measure.

And this is, again, the tracking index. And this concerns electoral participation, in being interested in politics, a civic outcome. Trust in institutions, whether people have trust in the Parliament, and in the Government, and in the Police, and Politicians, and the legal system. And index for that, and you basically see again, as, see this as some sort of a descriptive plot.

That was more tracking, inequality tends to increase, in terms of civic engagement between groups of people. So, my concern with civic engagement is that there's no theory of justice. You could imagine that would, that would legitimate this form of inequality. Unlike inequality mathematics performance. And like an inequality in labor market outcomes where you put kinda theory that moral theory that would justify those kinds of inequality.

I think it's much harder to think of such a theory when it comes to civic outcomes. So when equality is is lets say

harmed or effected negatively in terms of of civic outcomes. There is definitely a moral issue at stake. That can, can not be easily defended by claims that inequality is good for society or create a center for these kinds of things.

I can not think of a way that we want to create a center for some people to go to elections and discourage others kids to go so.
>> But we've done that before I think.
>> Well, sure, I mean, yes. I'm not saying that everything subscribes to that moral theory.

Okay. So what I will do is highlight three what I think are three omissions in the literature. One of them is that it is very cross-sectional, it's just looking at these cross-sectional associations. Regression models with control variables and those kinds of things Where we have multi-level models with contextual variables levels of tracking related to inequalities of opportunity for example.

And I think there is no study that shows that there is no inequality in large or in larger in societies with more tracking. But it's very cross-sectional. It's also very theory poor. It's very micro. Tracking is bad. Tracking harms inequality, but we don't really know why or how, how, how inequalities are produced in those societies.

So we need to dig more into the, let's see the micro level theories of, of how educational decisions are made. And how the institutions that people are part of, the world people are part of, the country that they live in. How does institutions affect those decision making processes at the level of families or teachers or these kinds of things.

Third the main focus has been on, as I mentioned, on the inequality and the labor market outcomes not so much civic engagement. By the way, I'm trying to combine issues of paper here, another paper with a graduate student, and a book project that I'm working on. So this is all trying to fit together hopefully.

And if not, then then I'll maybe just to explain, I tried to base my work in the institutional literature. And I think one definition of institutions are for me the most useful is the one with Sam Bowles. Who argued that for the institutions can describe this formal and informal rules and regulations.

That give a durable structure to interactions among members of a population. This is very very good definition for me because it highlights both the formal and informal rules. And to get to the theory, the micro-level theory that we need to address. We need also to include norms, norms about education and families, these kinds of things.

So we need to produce, create a theory that is about formal and informal institutions. In my theory that I'm developing there are three premises. First if we look at inequalities that exist within a country we can assume that or the theory assumes that people act more or less rationally given the information they have.

The options they face, and the choice that they want to make. So, I'm trying to, not to hinge too much on theories that have a very passive character of individuals. There are people that socialize in a particular fashion and the only thing they can do is just make the choices they make.

I try to have a more active understanding of human, human beings in my theory building. And this relates clearly to the more rational choice approaches in, in educational decision making as have been developed by Richard Green from Yale University Steve Morgan here in U.S. from from Cornell and and John Goldford from, from Oxford.

So that's the, that's the, that's the basic premise. Then institutional context in which, in which people live can switch on and neutralize those processes that are happening at families when people make decisions about the options they face and the goals they have in life. So in that sense the institutions are important because they can you know depending on the system kids have or do not have an option to choose for different tracks.

So if there's no option, even if families would want to give fathers to the children, it's much harder than in societies where kids are offered a very early choice to choose for one type of education or not. And the older kids are the more dependent that they tend to be in parents as the life course hypothesis, of the old stratification school would would have it.

And if people are younger when they make decisions if parents are more important, then of course, it might, the choices that are made are less dependent on their own achievements, but more on, on the, on the parent's preferences. So that, that's the kind of theory I'm developing. Then last I think it's very important to in standards, well institutions don't really fall out of the blue.

Right? They come from somewhere. They are, they are initiated, and I can't really study the initiation of those institutions, I have to go back to the 19th century in if if you want to understand the Dutch history of education. And I do that theory, theory-wise, but not so much empirical, I guess.

But there is some empirical research that you need to do, I think, if you want to study this. It is how most of important staples in education decision making, whether its parents and teachers or even the students themselves, whether those important staples develop norms that are related to the institutional structure.

So this could involve teacher expectations, teacher expectations of student effort parental involvement in schools that could be harmed by a certain system if their children happen to be in the wrong track. These types of norms that evolve may legitimize and perpetuate institutions as they are. So if you ask, one debate we have in all the time is about this 30 year old guy, let's call him Pete, who can't learn, who should work with his hands.

So we should have an educational option for that person. So we shouldn't keep him into an academic learning environment, but rather we should provide vocation skills early in life, at age 13, 12, because this guy can't learn. That's, my feeling is that, that sentiment is not something you hear in Scandinavia, but kids are separated much later.

Not, at least, for the 13 year old kid. It's only an option, it's only a discussion issue, it's only an something that people can start to think about if the institutions allow them to think about a lot of these issues in that way. So if people justify these these existing structures by the opinions they have then of course this might, this might legitimate the institution.

And even though every now and then we have discussions in another about early selection overall I don't think many people would really think this is a bad thing. So I try to, I try to, it's not, not very easy, but I try to get a grip of that as well.

So I wanna show you is, well, I don't show you this. This is just a replication of what, what is known across cross, cross-sectional research on these inequalities that are stronger in, in more recently tracking systems. I don't think I have the time for that. But I will focus more on three difference in difference designs that are trying to get away a bit from the, from the from the cross sectional field.

Although, I mean I'm not clearly at, we have a strong, very strong causal test here about tracking causing causing mathematics inequality. Although I think the theory of early tracking being harmful to equality is much better tested with these kinds of models than with cross-sectional models. And so that's what I'm what I'm doing.

What I'm doing is I look at two difference-in-difference designs on mathematics achievement. One compares student assessments of 1964, the first international mathematics study, which is the predecessor of the TIMSS, which used to be. The T would be the Third International Mathematics and Science Study. But now the T has been replaced by the trend so they can keep up the TIMMS name.

>> So the TIMMS is now the Trends in International Mathematics and Science Study. So I'm using the FIMS as the first one, and the SIMS, which is the Second International Mathematic Study, of 1981, I should say. And in be, the good thing is that between those two years of observation, this was the era when a lot of debate was happening about equality of opportunity.

Much more than now, today, I think, at least in the Netherlands. When many educational systems are being formed and many, I think in all the education systems that I'm studying in this particular design, there has been quite a bit of debate about equal opportunity and promoting detours around the system so people can switch tracks.

So there's been, there's been an issue in all of those societies. But the good thing is that there were five countries in there if we, that were tracked in 1964 where they have re-, reformed their education system into a comprehensive system between 64 and 1981. So for those three countries I'm comparing how inequality's changing by social class backgrounds.

Right after two countries that have not changed the systems. So they have retained the track system. So that's the difference in difference design here. I will explain it later what it looks like. Then a second design is quite similar technically it's identical technically I should say. And here I compare grade four and grade eight students that move in some countries from a untracked primary school into a tracked system.

And in other countries they moved from an untracked primary school into an untracked environment still. A comprehensive system, they remained in a comprehensive system so to say between grade four and grade eight. So also, that's not about reforms, it's just about changes across life course so to say, across the early life course.

And there it was very similar design, by just looking at how to slope in the inequality by social background changes more or less depending on whether it's it's change is positive or negative. Whether they change more in terms of of inequality in those system that have, where kids move into a track system then the movement would be of the regression slope, the change would be in the regression slope if kids moved within a comprehensive to stay within the comprehensive system.

So that's the second difference in difference design. And then there's a third difference in difference design that looks at and that's completely different. It doesn't look at social backgrounds so much. It really looks a civic outcomes as such and it looks at some sort of treatment which is the, the, the number of tracked years that people will encounter between the first moment of observation which is when they are 14 and the second moment of observation which is when they are 20, early 20s.

None of these difference in difference design, design are based on data where students are followed. So I don't have match data on the individual level. I only have data collected in different points in time for different subgroups. So also for this, I, I compare 14 year olds to 20 year olds.

But they are of the same cohort. So I compare the 20 year old's six years after I observe the 14 year old's, so to say. Just to illustrate what I'm going to but I'll get to that. This is just to illustrate the cross-sectional results. This is a number of books and hours of time striking that's positive so more larger inequalities.

This is positive main effect of, of social background on mathematics achievement. This is a positive new direction, it's fine, this number of books in fact is increased, it's stronger and more track systems and that's the case independent of the control that we put in, in terms of education systems or in terms of of of increment quoting and it's direction with education or the number of books or GDP capital of education expenditure.

So it's just multi-variant, cross-sectional analysis that have that, have that we've seen in, in a number of studies. So now let's go into the difference in different designs. So, this is the first international mathematics study, grade eight. These kids are in sec, secondary school or a grade at least.

Then there's a second national mathematics study of 1981, 1982 and I've standardized mathematic achievement within the wave this is necessary because the tests are quite different and so what I'm comparing is really the relative position within the distribution of the countries together. We can talk about it later.

I think it is the best way to standardize it given the data. Then, I'm looking at parents education and that's managed quite differently between the waves, but also between the countries within the waves. So if data from 1964, the rose is far from ideal so what I do is I make a proportional square of educational, for educational background within that country in that survey, in that wave.

So if it's a score between zero and one zero would be the theoretically lowest category possible when everybody's

higher educated than you, and one would be just theoretically highest possible value if everybody would be less educated than your parents. Then there's the w variable. So I'm not using this tracking indicator because that's measured in the early 2000s.

So I have to, I just reform index for it, so that's a comprehensive for a subtract system within the country waived. So that's constant for the non-tracked systems for the system's that have retained the track system. And it's variable, if a reform has been implemented. So these are the five countries, Belgium, England and Wales, Finland, France, and the Netherlands.

All of them were tracked in 1964. Two of them have retained the track system. The Netherlands and Belgium. Despite the big discussions that were there too about inequalities of the this is not happening as a, as a public issue, but they haven't done anything in the system, whereas three countries, England and Wales, Finland, and France, have really reformed their education system.

The reform from Finland is said to be one important reason why Finland is doing so greatly. So I just tried to show you the model. This is the regression model, this is a mathematics core of individual times wave, 64 or 1981. There's fixed effects for here, fixed effects for time, the dummy, which wave it is, fixed effects for countries.

There's a indicator whether there's a comprehensive system or not or track, which varies between coun-, between ways within countries if it is a reform country so you can identify the model with the fix, facts. There's a, a slogan for parents education. And as the interaction term of parents education times this comprehensive education done.

If you look at the parents education effect in t zero to sort of wave one so this is 1964 the education effect parents education effect is this gamma. For t one it's also gamma in those societies that have retained a track system. If you have a reform system then the education effect of parent education effect is gamma but in of t one the education effects parent, parents education effect is represent in gamma plus is, is number.

So the dea-, the difference estimate of the parents education effect is a number this on in direction effect. I run this model in the mean, you notice the regression techniques, but also on the on the on the 20th percentile and the 80th percentile of the distribution position on the model with quintile regressions.

Here are the results. This is the, the, this reform analysis. So here is the main effect of comprehensive education and here you see it's negative. It's important to realize this. Then here is the main effect of parents' education. It's positive, not surprisingly. So kids that have, that move up from the lowest theoretical possible value to the highest go up one across the mathematical solution of This is the mean, this is the 20th percentile.

This is negative, it's important to remember. And then this is the interaction term between parents' education and comprehensive education system, so this is a difference different estimate. And it's negative. Meaning that this positive slope of parents' education is still took negatively becomes less positive, less strong in systems that have reformed their education system Then this is negative meaning that if you think of this in terms of efficiency with the reform, the average position within the distribution in that wave across those five countries has decreased.

So this could lead to the conclusion that there's an efficiency loss in terms of reform to comprehensive education. Which fixed with the equality versus efficiency tradeoff. But as we've studied before, but as we've refuted before all the time, so other studies that linked the cross-sectional data, they've found no, no effect of the comprehensive, no main effect of, of, of the institutional variable.

Leading to conclude that there's no, there's no efficiency gained from tracking or, or, or such. But here we see there's a loss but I think this is a shock effect because of the reform. I have some evidence for that here, it's I'm not sure if it's very strong evidence, but at least if you look at the reforms that took place in different years is around 1970, it's a bit mixed it's not a continuous, it's a bit of a few years, actually.

Finland was in the 75 and France was 1980. Just before the second wave of Britain. And we see that the effect size of reform, if we include only that, only that country as, as the, as the comprehensive reform country gets more negative,

the more recent the reform was.

So that might suggest this might be short lived. Perfect, but we don't know that. It could also be just efficiency loss. These are the predictive plus for those results. Or a better way, I should say that so these lines are, are don't have the same slope and they have by definition the same slope, we saw that from the model.

So we see that this is 1964 the, the solid line and you see that with with reform, these are the kinds of reformer system right inside. We see the slope is started a bit downwards it's less strong. Certainly not away, right you don't have fully equality of mathematics learning not at all.

But is definitely less strong and that matter is stronger, if we look at up lowest percentile the lowest point out of the distribution. But we don't find it in the, in the higher in the upper part of the distribution. So so we do find inequalities decreasing especially in the bottom.

With reforms. So this is the second difference in different design, I've got a lot more countries. I think it's 21. And some of them, it's only a few by the way. Some of them you move from grade four to grade eight in to a track system. So in Hungary, in grade four you're together.

In grade eight you're separate. And it happens in grade seven. In Lithuania, you move into a third system and that's in grade six and there's another one here, Singapore, you move into a track system and that's in grade seven. So but most countries, you see that kids are still together in a comprehensive system, eight, grade eight.

So, for the identification, the moral is a bit sad that we have so few countries, but again. I mean, there's all kinds of differences between these countries that has nothing to do with transition, right. It's about development maybe and well, Singapore is a very special country I guess, in many ways so again I'm not making very strong causal claims in the way that economists would talk about causality but I, but I, but I, but I do think we gain a lot by looking at this.

In a, across the life force between grade four and grade eight. So, in grade four we show this is all comprehensive, and in grade eight it's, in some countries tracked, and in some countries comprehensive. Now I have to use a number of books parents education anymore, because in great which is the only question, the only data that is available.

For a kind attempts, grade four it is the only data available of the parents, so this I coded the same way as a proportional score within the country wave. Math is again sanitized within waves across in the countries and it is the same identification method. I'm going to show you this so this here we have the model the difference model, number of books in the household is a positive slope.

Quite similarly you see, in terms of the the, the, size of the effect, to the previous model. Comprehensive education in this case is positive. So here, here there's no trade off between equality and efficiency at least in this design. And this is what, well according to some, economists who would have identified the same model.

Comparing new specialties in Sweden this would be seen as the cause and effect of comprehensive education, of reform, and we just look at the concerned thing across a life course. Anyway, we see if projects stay in that comprehensive system, there's more, there's more there's more there's more gain in mathematics.

And here we see the attraction term again. This is the cause and effect, or if you wanna call it that way, of comprehensive education, and you see that that's again negative so in systems with where kids stay in the comprehensive mode, so to say. The slope is weaker, is lower, than in countries where they move into a tracked system.

Obviously the next step in my analysis will be and I can show you this, is to look at all the changes that could happen or other variables that could be related to these to this outcomes. Thinking about economic development could be quite an important issue. Although if you wanna look at the the difference, the difference of course we should observe differences across time in that economic development, and I'm not so sure that's really an indication for me, but that the definition that I need to test.

Same picture, this is the Trek system and the comparative system, these are by definition. Equal slopes, and here we see that this is grade four, and you see that this of the slope goes up right to the grade four in grade eight, and that's especially the case for this percentile more than, but also for the average.

Okay, I don't have time for this, but I have done some sensitivity analysis the thing is I can't do, like they call sometimes, the placeable design by looking at something that happened before. Because there's no data set before 1964, unfortunately, but I could do it, but only for three or four countries by looking at 1980 and 19 19 1995, because there's attempts but that gives me only three countries, of which two have been reformed to something.

So it's not, not very large data set, but I could, I could do it. I then I looked at the, the years since comprehensive reforms has taken place, as because as changes. This different across these three countries. For the first design, and for the second design I look at the, grade level at which this how many grade levels they've been tracked, so to say, when they are observed in graded.

And, I mean, it's just the same pattern. Okay I can do two things. I can show you something of the mechanisms of the teachers and the parents, or I could show you something on the civic outcomes. Or both, but that's gonna take a bit more time. I go briefly through the teachers, because I think it's important this is all macro and interesting but we need to think more into the processes.

And also interesting results. What I think is happening is some form of defeatism among actors. I'm not sure if this is good English. Where important people for children's learning, including themselves, feel defeated, feel that they can't, take part in the rectories of achievement. And so parent, teacher defeatism would affect some kids, especially if they're in lower tracks, in the track system.

And parents might also lose interest in their parents' education, in their childrens' education. If the wrong track to their social class. So what I did I show you the graphs because that's this is all from 11 models and this is cross sectional. Only looking at the Tim's data grade H to the teachers teachers are good with teaching the bottom 25% of the class effort.

So it's the bottom 25% of the class average, that's the way to look at this, or the top 25% of the class average. And here is the most important finding, this is a statement whether uninterested students harm teaching asked to the teacher, and this is controlled for the class composition, socially.

For the mathematics achievement of children, even the mathematics attitude of the children all on the class level. So what we see is that there's a positive slope here with more tracking, you see that, especially, if teachers are teaching the bottom part of this distribution, they get more critical of their students being hamful, independent of there being average achievement in the class because that's controlled for.

The expectations go down with tracking with that. I would expect this to be going down for the lower part but it's also going down for the higher part of the distribution, which is a bit surprising. These indicate that selective positively in flourish, so that's I have to make sense of that, with at least this is in line with the hypothesis.

Then I look at parents do high S.C.S. parents get less involved with their children's school? If the children are low performers, especially in track societies. That could be called some form of parental defeatism. And here is what I find. This is the parents of top performers, the top 25%.

This is the parents of low performers. And this is the high SES line high SES line. This is the low SES line. And here we see quite clearly that in more tech societies especially high high SES children high SES parents. Become less involved with their children's school, so this is about teaching to the talking to the teachers, being part of some committee in the school there's an index of pizza I created, so with pizza, I can do the parents or with skills I can do the teachers I can't do them both in one in one analysis unfortunately.

So apparently there's something happening to the to the tract system especially when it comes to low performance.

Okay five minutes for my civic outcomes part of the story. Here I do difference and difference it's important to realize I'm not talking about parents anymore, forget about parents. When I do look at 14 year olds, because their some sorta pizza, but then about civic outcomes.

This is called a CVET. It used to be called a CVET. Civic education database again, in many countries, it's collected among great eighters. Again so quite similar to the Tims, is organized by the same organization as Tims. So I'm looking at the great issues in 1998, 1999, and I compare them, to the same cord of the same countries in the ISSP data which is the International Social Service Program, adult survey.

Which I've been asked the same questions, exactly same questions of civic engagement. Roughly the same goal although for ISP 2004 I have to take a broader age group than just the 19 year olds which would be the matching age group because I need data right, I need number of I need m.

So I, I, I invited or did this with the students, I should say at Skacklemenska. Graduate students. So we have a ten-year age range of this of this second observation window, so to say. And this is civic engagement before and after tracking we call it. 14-year-olds, some kids are tracked already.

We've tried to solve a issue, but this is before tracking and after tracking. And the treatment is the length of tracking between that observation at grade eight and the end of secondary school. So, in most cases this is around age 18 or 19, and there's a number of years in that in that in that phase, and of that number of years, you could be tracked a full amount of years.

Or just a shorter amount of years. So that's our, that's our indicator of tracking, and then we, as a second analysis, I also wanted to show you that, we've also counted the number of track, the number of years they have been tracked before, the age of 14 as part of our tracking treatment, indicator.

We have a similar design with fixed effects for countries in time. And the track here is variable which is set to zero, for the first observation here. But then of course it could be five in Germany or something like that. Okay that's all clear. This is just a specific engagement index.

Again these are data. How interested are you in politics? How often do you discuss politics with peers? How important is it for a good citizen to vote in every election and obey the law? And I made a standardized index of those. So we made a standardized index of those, indicators, of time.

Here is the model. This is the tracking index, the treatment variable, with country's fixed effects and time fixed effects, which is negative. So, you see that this is the lower part of the civic education, civic outcome indicator, the 15th percentile. This is the 85th percentile. So we see negative slopes especially for the bottom of the distribution, so you see this is stronger although I think it is significantly different from this one.

So we see with more tracking if tracking lasts longer the more years kids are tracked the lower the average of civic engagement especially at the bottom. But it's also important to realize that once we control for participation in higher education, at the level, this is all the level of, of this country.

This is no longer the case. So, early tracking might lead to lower participation rates in civic engagements, civic engagement rates. Because it leads to lower participation rates in higher education, at least that's the, I think the explanation that we try to build upon. Because higher education's quite crucial to becomes politically engaged and all these kind of things.

Okay the grounds for that, conclusions. So, I think we've shown larger inequalities in tracked educational systems compared to comprehensive systems, both across time and across the life course. And of course also in terms of civic outcomes. And you know some results point towards trade-off between efficiency and equality, although not all results it's a bit mixed the trade off has been refuted most of the times.

In data sets also a different designs, which we find at least in one case. Some evidence for it and we thought this might

have to do with this shock effect of a reform where achievement just goes down for a while and then catches up later because the longer the reform has been in, been a, been a go, long before the reform was, the less negative this, this manifest was.

And I think there's a central role of important agents. Parents, teachers, students, and how institutions are legitimated. And how could they, how they can remain to exist. So that's my that's my presentation.
>> I'm Ann Stevens, the director of The Center for Poverty Research at UC Davis, and I want to thank you for listening.

The Center is one of three federally designated poverty research centers in the United States. Our mission is to facilitate non-partisan academic research on domestic poverty, to disseminate this research, and to train the next generation of poverty scholars. Core funding comes from the US Department of Health and Human Services.

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