

Coaching Culture and the Prisoner's Dilemma

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Abstract

This paper examines the rise of the coaching culture in India and its implications through the lens of the prisoner's dilemma. The exponential growth of the coaching industry, driven by the dual purposes of supplementing inadequate school education and preparing students for competitive exams, reflects systemic issues in the educational ecosystem. While coaching appears beneficial for individual students aiming to gain a competitive edge, it collectively leads to a suboptimal outcome where resources are spent without improving overall selection probabilities—a classic case of the N-person prisoner's dilemma. The analysis highlights that result-oriented coaching often exacerbates the inadequacies of the system, fostering rote learning and undermining critical thinking skills. Although coaching fills the gaps left by substandard schooling, it amplifies issues like inequity, financial burdens, and inefficient exam designs. The study critiques the reliance on coaching and proposes policy implications, advocating a dual approach: improving the quality of school education while disincentivizing the coaching industry to achieve equitable and sustainable educational outcomes.

Keywords: prisoner's dilemma, coaching culture, broken window economics

Introduction:

You cannot ignore the young innocent faces, wearing t-shirts of their respective coaching institutes, looking tired and a bit depressed, if you have ever travelled in the Delhi metro in the afternoon. This was not so common two decades ago. What has led to this exponential growth, which doesn't seem to stop in the near future, of the Coaching Industry over the years? The coaching industry serves two purposes: the reasons for its growth. First, it teaches students (especially school students) what their schoolteacher couldn't. This also says enough about the quality of teachers that we have in our schools. Second, it prepares students for competitive exams, entrances, and other tests.

Although, coaching institutes that serve the former purpose are justified as long as students are learning better there, but they have their own problems. We all know why Jack was a dull boy. Let us rephrase it, school then coaching then homework and no time to play, makes Jack a dull boy. We can learn from the example of China

and how it managed its coaching industry after realizing its negative effects on the students. This is challenging in India. Why would the government let a few thousand crores of its tax revenue slip away? Coaching institutes pay 18 percent GST.

One of the main reasons why teachers (especially in private schools; government teachers are a separate case) generally don't teach well in schools is that they are underpaid, so to earn extra, they informally compel students to attend their private tuitions.

We will not go into more detail about this type of coaching; our main focus will be on the economics of coaching institutes that serve the latter purpose, i.e., preparing students for competitive exams.

Before we start talking about how things work in this industry, we will first argue that both coaching institutes and the students are result-oriented. This is not to say that there is no learning happening there, learning does happen,

but the main goal is to effectively compete. And any learning that happens is a byproduct. So, For the sake of our argument, we are setting aside this sacred aspect of coaching (i.e., learning) and attempting a crude cost-benefit analysis. We will surely talk about it later.

The Prisoner’s Dilemma in coaching

We will begin by explaining what the prisoner’s dilemma is. Imagine, we have two prisoners, both are accused of a crime and are in police custody. Both are equally likely to have committed the crime but there is no sure way to confirm who has done it. One of them is an eye witness, and other is the actual criminal. Now, each one of them has two options, either keep quiet or be a witness against the other. If both keep quiet, both will have to serve a term of, say 1 year. If both decide to be a witness against the other, both have to serve a term of 3 year. If one stays quiet, but the other become a witness

against the first, first will serve a term of 4, second will be released.

Let us make a payoff matrix to visualize the payoffs of different moves by the prisoners:

Outcomes	Prisoner 1 keeps quiet	Prisoner 1 becomes the witness
Prisoner 2 keeps quiet	1,1	0,4
Prisoner 2 becomes the witness	4,0	3,3

No matter what other chooses, one is always better off by being a witness. But if it happens both will have to serve 3 years. This outcome is definitely worse for both of them than if both have had chosen to be quiet. This is classic case of the prisoner’s dilemma. Here individual acting in their self-interest have produced a less-than-optimal outcome for the group. How is this analysis relevant to coaching institutes? Let us see.

Let us now consider a student who wants to appear for a competitive exam, he has two choices either to do self-study or take coaching. Let us also consider two agents Agent₁ (the student) and Agent₂ (everyone else appearing for the exam, excluding Agent₁). So, if Agent₂ chooses to do self-study, Agent₁ will have two options, one, to do self-study, and second, to take coaching. If agent₁ also chooses self-study then all agents are doing self-study. Let the probability of selection of agent₁ in this case is x/y , where x is the number of seats and y is the number of students appearing (assuming Agent₁ is an average student). This probability increases if agent₁ takes coaching, but Agent₂ doesn't and becomes x^*/y , where $x^*/y > x/y$.

Similarly, if Agent₂ takes coaching, but Agent₁ doesn't, the probability of selection of Agent₁ is reduced and become less than x/y . If Agent₁ also takes coaching the probability become similar to x/y .

The game can be formulated by the following two statements:

1. Regardless of what all other students do, each student is better off by taking coaching.
2. If all students take coaching than the probability of selection of each of them is no better than if nobody has taken the coaching.

So, everybody ends up taking coaching, but nobody sees any improvement in the probability of selection. They all are collectively worse off, as they are spending money for coaching, but they are not receiving any relative advantage over the others as everybody is doing the same. The dilemma is that each student, working for his own self-interest has led society to a sub-optimal solution. Even after spending a huge sum of money, they are at the same probability of selection as they would be if nobody had taken the coaching. This is the classic case of the N-person prisoner's dilemma. Cooperation is highly unlikely in the current game even if it is

played again and again. This is also because people don't see things in the above-explained manner. Also, the current situation of unemployment is so bad that nobody wants to keep any stone unturned to get selected.

Financial Burden and Inequities

A complete ban on coaching could be a better option and produce better outcome leaving the probability of selection undisturbed and saving a huge sum of student's money. This will also be an equitable thing to do especially in a society like India, which is highly unequal. It has now become very difficult for people without coaching to crack competitive exams.

Some may argue that this industry is giving jobs to many people, and they will lose if the industry is completely banned. But is not it an example of Broken window economics?

You break a window voluntarily, the carpenter will earn, he will then spend it on something else

and so on. We are creating demand for a service which is not fulfilling any need in real terms, just for the sake of stimulating the economy. Money spent on one thing (that too on something which doesn't improve your wellbeing) means forgoing consumption of some other thing (something which may improve your wellbeing). And both the consumptions are equally likely to give some poor being some work. So, the argument of job loss doesn't hold. There are better ways to spend the same money in a way that everybody is better off.

Impact on Learning and Critical Thinking

Now it is the time to relax the assumption that we made in the starting i.e. learning is a byproduct. Matters are not as straightforward as they were when we relax this assumption. Since, we are to talk about the possible positives of coaching industry, we will also have to talk about the negatives, and then weight them against each other. These negatives are not inherently linked with coaching industry, they are linked with its

result orientalism. So, they also apply to individuals who are doing result-oriented self-study. But it is generally true that coaching does amplify result orientalism.

Coaching for some exams does help students learn things that will prepare them for the courses they intend to pursue. For example, if you are doing coaching for JEE, it will surely help you in your course in the first few years. But it can be argued what coaching actually does is that it fills those gaps that are left due to substandard school education. Efforts should be made to improve schooling, not to justify coaching.

Coaching gives specialized training in the field someone is willing to work in future. There is not much wrong about this line of reasoning. But these benefits are only realized by the ones who actually got selected. What about those who couldn't make to the final list? All their money and efforts go into vain. Now, some may argue that why someone should not get trained in something which he wishes to do and may

actually end up doing. The word "may" used in previous sentence, is precisely why someone shouldn't get trained intensively in something which he may not end up doing. And since, the number of seats is minimal compared to the number of applicants, very few will actually end up doing it.

Exam Design and Systematic Issue

Matters are more complicated when we get into the details.

Exams are ill designed. For example, how does clearing UPSC CSE exam makes someone a good administrator? Although, it is true, it does tend to develop certain characteristics in individuals which every good administrator should have, like resilience, patience, perseverance, fortitude, the ability to handle pressure, discipline, time management etc. Having general knowledge about many things does helps. But it can be argued that this exam is not the very efficient way to learn these things. Also, the actual skills that are required for a

particular job, are mostly taught during the training period. We can also take the example of UGC NET, it hardly tests the subject specific knowledge not to talk about the research aptitude.

What does the JEE exam try to test? It intends to test the presence of the mind, the scientific temperament, the ability to apply the concepts, and so on. But, with coaching institutes entering the game, and spoon-feeding students with all the concepts and their possible applications (this doesn't let the analytical skills be developed in students), the game becomes all about who can memorize and remember more things, at the expense of everything else. Why so many people who have studied at IITs don't pursue a carrier as an engineer? The answer partly lies in the fact that they were not naturally inclined towards engineering, they did it simply because they can. They are hardworking, they can memorise a lot of things, and this enabled them to perform as good as anybody else could, someone who also have the passion for the subject.

Ethics paper in UPSC CSE is to teach ethical values to aspirants. Every student wants to score maximum marks in this paper, as in others. And there is nothing wrong with it. But the problem starts when all the attention is given to the maximization of marks, and at the expense of actual learning of these values. Coaching institutes make this problem more severe by providing shortcuts for passing exams. And the result is in front of all of us, many of the people who have cleared one of the most difficult exams are corrupt.

The same goes with the interview, most of the responses are superficial, having no connection to reality.

So, we have ill-designed exams that mostly test memory, on top of that we have coaching institutes that are giving students ill ways to pass these already ill-designed exams, defeating the very purpose of this whole process. What a blunder! Einstein said, "*God doesn't play dice*". But we are surely doing so.

Policy Implications and conclusion

The case against the coaching culture is strong. But it is also true that our schools have substandard quality, which doesn't seem to improve in the near future. Coaching does fill up these gaps. So, a complete ban on coaching would not be a viable idea. This will also incur huge displacement costs for the workers working in the industry. What we need is the "Walking on two legs model". Implementing policies targeted towards improving schooling, on the one hand, and disincentivizing coaching, on the other.

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