Title	Equity versus efficiency	
Instructional	\checkmark	Illustrate equity-efficiency tradeoffs.
Objectives	\triangleright	Illustrate equality in the distribution of goods and services may lead to
		Pareto inefficiency in the real world.
Keywords and	\checkmark	Equity
Concepts	\triangleright	Efficiency
Illustrated	\triangleright	Pareto-efficiency
	\triangleright	Pareto-inefficiency
Needed Time		Less than 35 minutes (one lesson)

Sessions	Details	Time Spent
Activity/	1. Distribute a small piece of paper to each student.	5 mins
Announcement	2. T: Write down either 1 or 5 on the piece of paper	
	distributed to you. You can receive candies equal to the	
	number you have written down only if four or less than	
	four members of the class have written down 5. If there	
	are more than four students have written down 5, the entire	
	class will receive zero candies.	
	3. T: I will give you fifteen seconds to write down a number	
	on the paper. You can't communicate with others.	
	4. After fifteen seconds, collect all the papers and count how	
	many students have written down 5.	
	5. Invariably, more than four students write down 5, so all	
	students end up with zero candies. There are two more	
	possible situations:	
	5.1. Four or less than four students write down 5, so only	
	those students have more candies than the others;	
	5.2. All students write down 1, so everyone has one candy.	
	6. No matter which is the case, ask them the following questions:	15 mins
	6.1. Can equity be achieved in this case?	
	6.2. Is this condition a Pareto efficient? (Introduce Pareto efficiency)	
	6.3 What is the Pareto efficient condition in this game? (It	
	should be the situation where there are only four	
	students writing down 5 on the papers so the total	
	candies that the whole class have will be maximized)	

Teaching Plan

	(6.4. In this game, can the Pareto efficient condition achieve	
		equality? (No. Under the Pareto efficient condition,	
		four students have five candies and all the others have	
		only one. Tell students that Pareto efficiency does not	
		ensure equality. Sometimes, if we choose Pareto	
		efficiency, we have to forgo equality, vice versa. Also,	
		let students know that equality in the distribution of	
		goods and services may lead to Pareto inefficiency in	
		the real world.)	
Variations of		If the class size falls below twenty students, you can assign	
this		zero candies when two or more students write down 5.	
experiments		That means the minimal number of students allowed to	
		write down 5 should be adjusted according to class size.	
	\triangleright	If time permits, teacher can let students have a second	
		round of the game, before discussion, in which students are	
		allowed to talk to discuss how they can be better off,	
		especially for the class which gets zero candy in the first	
		round.	
	\triangleright	Besides the above suggestion, teacher can tell students in	
		the beginning of the second round that the names of those	
		students who choose 5 will be revealed. This may simulate	
		'social punishment' and see how different the outcome can	
		be.	
Tools	\triangleright	Prepare enough small blank papers for students.	
	\triangleright	Candies or any small gift items.	
Definitions		Equity - it refers to economic justice or fairness. (Parkin,	
		1996)	
	\triangleright	Efficiency - it refers to efficiency in allocation; it is	
		equated with the Pareto condition. (Lam, 1996)	
	\triangleright	Pareto-efficiency – it exists in the condition in which it is	
		no longer possible to reallocate the use of resources so that	
		one individual will gain without loss to another. (Lam,	
		1996)	
		Pareto-inefficiency – it exists in the condition in which it is	
		possible to reallocate the use of resources so that one	
		individual will gain without loss to another. (Lam, 1996)	
Past	\triangleright	When the author of this experiment used this game, he	
Experience		discovered that students often differed from one another in	

		their assessment of how important it is to maintain perfect
		equality and how important it is to maintain Pareto
		efficiency.
	\triangleright	Students in several classes of the author assigned several of
		their classmates to write down 5 in order to get more
		candies. Then, each member of the class will then have
		an equal probability of receiving the higher payoff by
		drawing the candies out of a hat.
	\triangleright	In one of the classes, three students persisted to write 5 on
		the papers, even in the face of intense social pressure to
		alter their choices from students who had a strong
		preference for equality. Also, several students who would
		have been happy with less payoff suddenly became
		militant and sabotaged the rest of the class by changing
		their selection from a small to a large number on their
		papers, thus causing everyone to get zero, even though
		they had nothing to gain from it (other than the satisfaction
		of observing perfect equality). This class got into a fairly
		heated argument and tried to 'gang up' on the three people
		who were intending to write down a larger number. With
		emotions running high, author pointed out how
		insignificant their problem was compared to the gross
		inequalities in the distribution of housing, health care, food
		and education.
References	\checkmark	Source of the experiment:
		> Peterson, Ken, 1995, Equity and Efficiency in a
		Game, Classroom Expernomics, vol.4(1), pp. 1-2
	\triangleright	Definitions of the key words:
		➢ Parkin, M., 1996. Economics 3 rd rd. USA:
		Addison-Wesley Publishing Company, Inc.
		➢ Lam, Pun Lee, 1998, Advanced Level
		Macroeconomics, Macmillan Publishers (China) Ltd.