UNDERSTANDING FINANCIAL EDUCATION

What Works, What Doesn't, and What's Next?

Bilal Zia
Senior Economist

DECFP

Rapid Growth of Financial Products

Technology

Financial Liberalization

Government and Private Sector Initiatives



Source: https://ponnarasups.wordpress.com/category/deposit-collectors/

Financial Inclusion a Major Goal

2 billion unbanked adults (2014 Global Findex)

2020 vision for Universal Financial Access



Source: https://www.washingtonpost.com/world/asia_pacific/india-pushes-bank-accounts-for-the-poor-in-bid-to-share-benefits-of-economic-growth/2014/10/17/62e153ff-e295-4dc7-80fa-addf9db498ef_story.html?utm_term=.2f353c0e7ca6

Equipped to Make Optimal Choices?



Why Sub-Optimal Financial Choices?

- Not a user-friendly system financial products often complex and difficult to evaluate
 - Calculating interest rates (flat or declining; compounding)
 - Anticipating liquidity needs, inflation, etc.
 - Comparing multi-dimensional products

Why Sub-Optimal Financial Choices?

- Not a user-friendly system financial products often complex and difficult to evaluate
 - Calculating interest rates (flat or declining; compounding)
 - Anticipating liquidity needs, inflation, etc.
 - Comparing multi-dimensional products
- Inter-temporal trade-offs sometimes difficult
 - Self control problems (Ashraf, Karlan and Yin, 2006)
 - Other behavioral concerns: procrastination, "channel" factors

Why Sub-Optimal Financial Choices?

- Not a user-friendly system financial products often complex and difficult to evaluate
 - Calculating interest rates (flat or declining; compounding)
 - Anticipating liquidity needs, inflation, etc.
 - Comparing multi-dimensional products
- Inter-temporal trade-offs sometimes difficult
 - Self control problems (Ashraf, Karlan and Yin, 2006)
 - □ Other behavioral concerns: procrastination, "channel" factors
- Lack of disclosure and transparency (Gine and Mazer, 2016)

Demand for Formal Finance Still Low



NPR: "People line up outside a bank to exchange old currency notes with new ones on November 10, 2016 in New Delhi India." Shams Qari/Barcroft Media via Getty Images

Can Financial Education Help?

- Compelling survey evidence from the developed world shows strong positive correlation. HHs with low financial education:
 - Tend not to plan for retirement (Lusardi and Mitchell, 2007a)
 - Borrow at higher interest rates (Lusardi and Tufano, 2008; Stango and Zinman, 2006)
 - Acquire fewer assets (Lusardi and Mitchell, 2007b)
 - Participate less in the formal financial system (Alessie, Lusardi and van Rooij, 2007; Hogarth and O.Donnell, 1999).
- Evidence from the developing world shows similar correlations (Cole, Sampson and Zia, 2011; Klapper and Lusardi, 2012)

Global Interest in Financial Education

- □ **US**: President's Advisory Council on Financial Literacy
- Brazil: National Strategy for Financial Education
- India: RBI has established Financial Literacy and Credit Counseling Centers
- International and Private organizations:
 - World Bank: \$15 Million Russia Financial Literacy Trust Fund
 - □ **OECD:** Principles on financial literacy
 - □ Citi Foundation: 10-year \$200 Million global program on financial education in 65 countries

Theory of Change

Financial Education Intervention



Improvement in Financial Knowledge



Improvement in Financial Behavior

Causal Evidence

- Survey-based inference is difficult:
 - Endogeneity
 - Unobserved factors

- Observational evidence mixed:
 - Bernheim, et. al. (2003) find some effect
 - □ Cole and Shastri (2010) find no effect

 Precisely estimated zero average effect on savings accounts in Indonesia (Cole, Sampson, and Zia, 2011)

- Precisely estimated zero average effect on savings accounts in Indonesia (Cole, Sampson, and Zia, 2011)
- Even modest effects tend to dissipate over time (Fernandes et al., 2013)

- Precisely estimated zero average effect on savings accounts in Indonesia (Cole, Sampson, and Zia, 2011)
- Even modest effects tend to dissipate over time (Fernandes et al., 2013)
- Interest and participation in adult financial education workshops tends to be low (Bruhn, Ibarra, and McKenzie, 2014)

- Precisely estimated zero average effect on savings accounts in Indonesia (Cole, Sampson, and Zia, 2011)
- Even modest effects tend to dissipate over time (Fernandes et al., 2013)
- Interest and participation in adult financial education workshops tends to be low (Bruhn, Ibarra, and McKenzie, 2014)
- Sessions tend to be short duration and variance across studies fairly high (Miller et al., 2015)

Challenges for Financial Education Evaluation

- Behaviors difficult to change:
 - Other constraints might bind
 - Behavioral biases difficult to overcome
- Generic courses may not be relevant, interesting or informative to individuals
- Skilled and engaging educators difficult to find
- Difficult to change "sticky" behavior, especially in short classroom sessions

The Next Wave of Evaluations

- New avenues of financial education research:
 - Targeting Youth
 - Exploiting "Teachable Moments"
 - Innovating Mode of Delivery
 - Personalizing Content
 - Incorporating Behavioral Channels
 - Combination Therapy

Targeting Youth

 Good early habits likely to benefit future financial decisions

 School-aged youth are primed to learn and hence easier to teach

- Opportunity for repeated exposure and practice
- Trickle-up impacts on households

Brazil High School Study

- RCT of financial education curriculum in 892 schools in 6 states in Brazil (Bruhn, et al. 2016)
- Schools randomly assigned:
 - Treatment group received financial education text books and teacher training
 - Control group
- □ Follow-ups:
 - After one semester
 - After three semesters (17 months)



CALENDARIO Tracking Financial Commitments

DOM SEG TER QUA QUI SEX SÁB **(1)** 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 **JANEIRO**

DOM SEG TER QUA QUI SEX SÁB 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 **FEVEREIRO**

JANEIRO

- VENCIMENTO DA MENSALIDADE DA ESCOLA
- COMPRAR MATERIAL ESCOLAR
- 5 PAGAR ALUGUEL
- 10 PAGAR CELULAR
- 11 PAGAR CONTA DE GÁS
- 12 PAGAR CONTA DE LUZ
- VENCIMENTO DO CARTÃO DE CRÉDITO

(luz e gás) – Claudio (irmão) "Muito calor. Ligando o ar condicionado todos os dias. A conta de luz desse mês foi uma fortuna. Ainda bem que o gás deu uma diminuída. Ninguém consegue tomar banho quente nesse calor, né? despesas variáveis

(material escolar) - Luiza (irmä): Comprei todo o meu material escolar para esse ano. Meus cadernos são lindos. Amei.

despesa variável sazonal)

FEVEREIRO

- VENCIMENTO DA MENSALIDADE DA ESCOLA
- PAGAR ALUGUEL
- 10 PAGAR CELULAR
- 11 PAGAR CONTA DE GÁS
- PAGAR CONTA DE LUZ
- 13-16 CARNAVAL
- VENCIMENTO DO CARTÃO DE CRÉDITO

(carnaval) - Claudio: Não esperava gastar tanto no carnaval, mas valeu cada centavo.

Foi o melhor carnaval da minha vida. Vou ter que economizar nos próximos meses para compensar. (despesa variável opcional???)

(mensalidade e aluguel) Pais: Viajamos no carnaval sem os filhos. Gastamos um pouco mais do que o previsto, mas estávamos precisando descansar. Vamos ter que apertar o cinto mês que vem. A mensalidade da escola e o aluguel são despesas fixas, todo o mês é o mesmo valor, não tem jeito de diminuir os valores. Vou tentar então reduzir a conta de cartão de crédito. Será que vai dar resultado?

DOM SEG TER QUA QUI SEX SAB 2 3 4 5 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 **MARÇO** DOM SEG TER QUA QUI SEX SAB 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 ABRIL

MARCO

VENCIMENTO DA MENSALIDADE DA ESCOLA

- PAGAR ALUGUEL
- PAGAR CELULAR
- 11 PAGAR CONTA DE GÁS
- PAGAR CONTA DE LUZ
- VENCIMENTO DO CARTÃO DE CRÉDITO

(cartão de crédito) Mãe: Depois do carnaval, controlei os meus gastos com o cartão de crédito e ele diminui bastante esse mês. (despesa variável)

ABRIL

VENCIMENTO DA MENSALIDADE DA ESCOLA

- PAGAR ALUGUEL
- PAGAR CELULAR
- PAGAR CONTA DE GÁS
- PAGAR CONTA DE LUZ
- VENCIMENTO DO CARTÃO DE CRÉDITO

(celular) Claudio: Minha conta caiu muito esse mês. Estou trocando mensagem de texto em vez de ligar. A maior economia. Uhu! Vou continuar economizando para as férias de julho. Quero viajar com meus amigos.

(celular) Pai: Tento todo o mês economizar o celular, mas a diferença é mínima. Dependo do celular para trabalhar. (despesa variável constante)

despesas fixas

despesas variáveis sazonais

despesas fixas

despesas variáveis

Making Professional Choices



Making Consumption Choices



Planning for a Party

EVAIROLAR AFESTA

Quem não curte fazer um churrasco com os amigos? Hugo gostava...e não gostava ao mesmo tempo. É que sempre que sua turma se reunia para fazer um churrasco, era ele quem fazia as compras. Todo mundo se comprometia a dividir a conta, mas Hugo sempre se ferrava no final, porque algumas pessoas acabavam não pagando.

Um dia Hugo cansou de se dar mal e avisou que não ia mais fazer as compras. Ele parou de se irritar, mas os churrascos passaram a dar errado. Quando outras pessoas começaram a fazer as compras, sempre faltava alguma coisa ou saía muito caro. Os amigos se deram conta de como Hugo era organizado.

Eles imploraram para ele voltar a fazer as compras e Hugo acabou aceitando. Mas com uma condição: ele queria receber o dinheiro de todo mundo ANTES de ir ao mercado!

Isso criou outro problema: como eles iriam saber de antemão quanto dinheiro seria gasto? A solução foi botar no papel a quantidade de carne, frango, refrigerantes etc que o grupo imaginava que ia consumir no próximo churrasco, em função do número de pessoas que iam. Depois eles fizeram a conta, para ver quanto aquilo ia custar, e dividiram o total igualmente. Na primeira vez, demoraram um pouco para calcular. Mas com o tempo o grupo passou a fazer as contas rapidinho.

Como Hugo calculou a quantidade de bebida que precisa comprar para um churrasco com 20 amigos:

QUANTO REFRIGERANTE CADA PESSOA BEBE EM UMA FESTA?

Quantos copos em média cada pessoa bebe?

Dentre os amigos, uns poucos bebem 6 copos, outros 2 a 3, e um ou outro não beb refrigerante, só água. Na média, Hugo calcula 3 copos por pessoa.

Quantos mi tem um copo?

O cálculo foi feito com copos de 300ml, que são os que os amigos têm em casa.

Quantas litros de bebida?

Nº de pessoas x nº de copos de refrigerante por pessoa

=> 20 pessoas x 3 copos por pessoa = 60 copos de refrigerante

Nº de copos x ml dos copos

=> 60 x 300ml = 18 000ml = 18 litros

Quantas garrafas comprar?

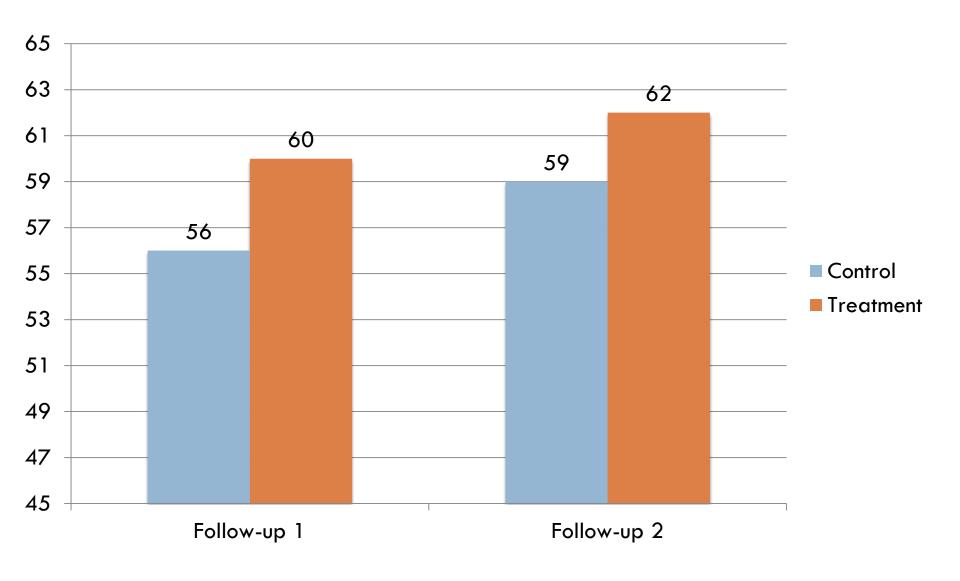
Total de litros / litros por garrafa

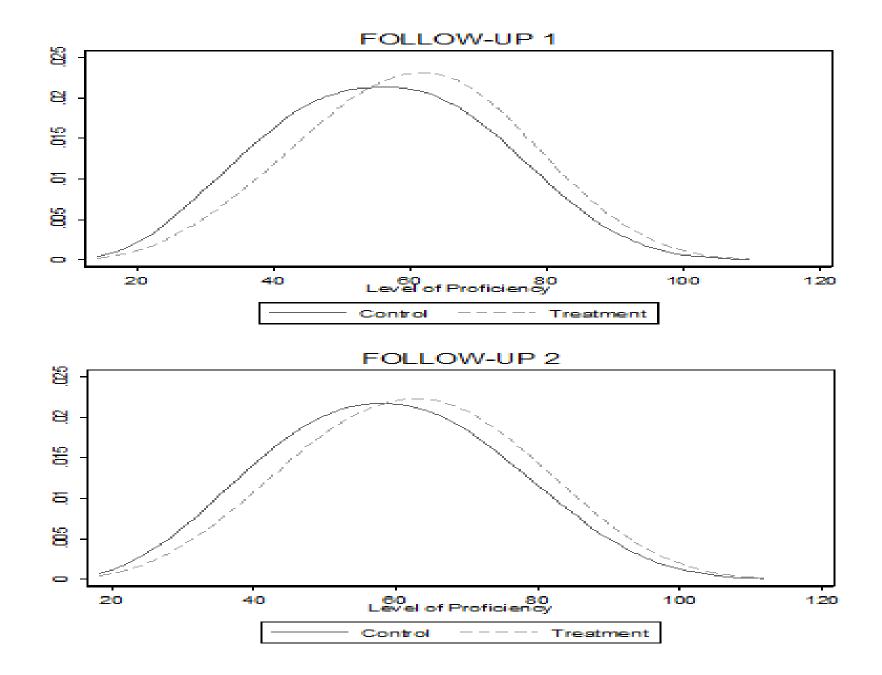
181/2,51 por garrafa = 7,2 garrafas ± arredonda-se para 7 garrafas de refrigerante

A cada erro, Hugo ajustava suas estimativas. Com o tempo, percebeu que pode calcular mais ou menos 1 garrafa de refrigerante para cada 3 pessoas. Ele fez o cálculo inteiro algumas vezes, mas depois não precisou mais porque já sabia por experiência.

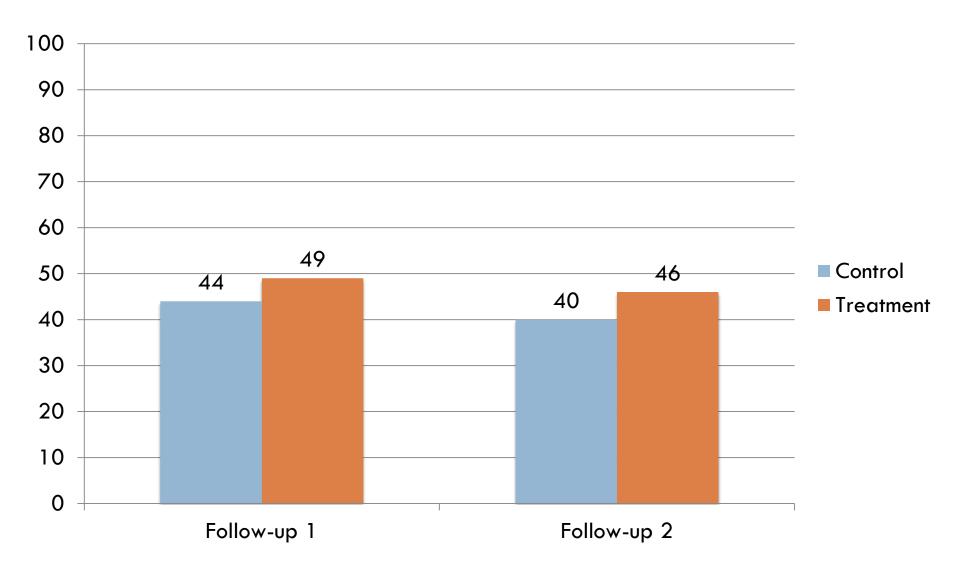
Saber fazer estimativas é incrivelmente útil para as mais variadas situações da vida. Serve para calcular quantas frutas comprar na feira para toda a semana, quantas horas vai precisar para ler todos os capítulos que vão cair na prova, qual a distância entre sua casa e o cinema mais próximo. E essa lista não acaba! Deu para ter uma ideia?

Positive Impact on Financial Proficiency

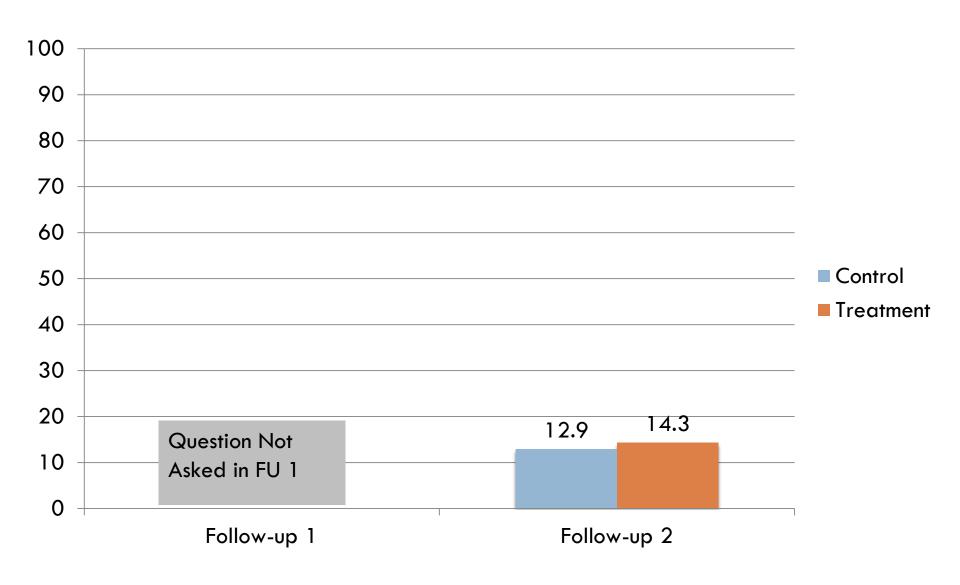




Percentage of Students who Save



Percentage of Income Saved



Way Too Happy Teachers and Students



Some Cautionary Evidence

Students more likely to purchase items on expensive credit

Students more likely to be behind on payments

 Longer follow-up needed to assess complete welfare effect

Targeting Teachable Moments

 Perhaps financial education can be most effective when the lessons can be implemented and used immediately

A clear example of this is the time of migration

 Possible complementarities if both sender and receiver trained

Indonesia Migrant Worker Study

Financial education study with 400 migrant workers
 (Doi, McKenzie, and Zia, 2014)

- RCT with four arms:
 - Migrant only
 - Main remittance receiver only
 - Both together
 - Control group



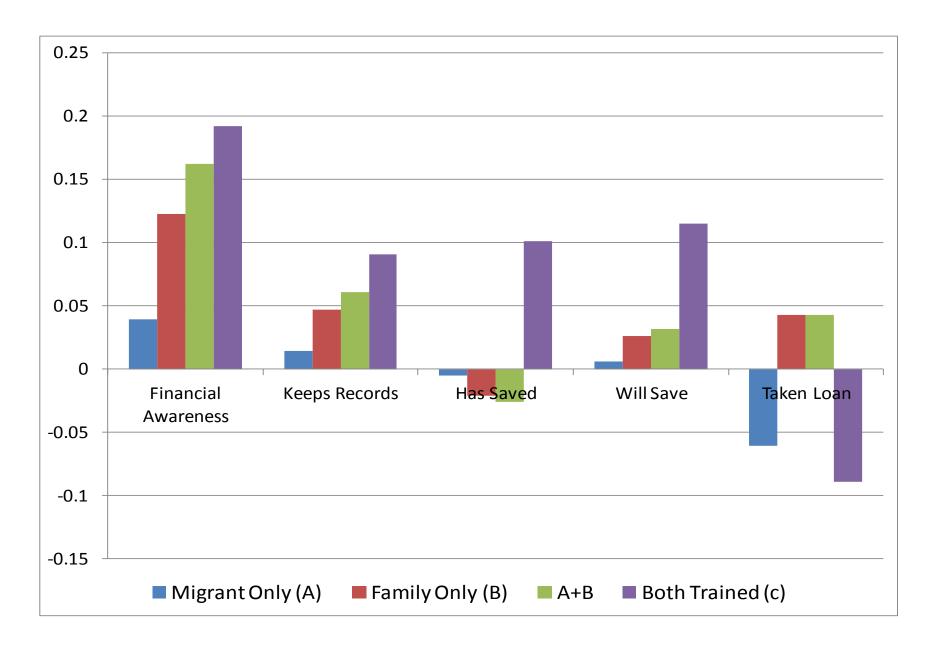




PEMASUKAN	Nilai (Rp.)
Hosil Ternok	1.700.000
Kirimon life:	2.000.000
· Luba dagang letur	400.009
TOTAL PEMASUKAN	4.109 000
PENGELUARAN	Milai (Rp.)
Pembayaran Kewajiban [A]	
- Bayar hutang	400.000
- Sekalah	50. CDO
- Ostrik	40.000
- Telp / Pulpa	- 1 50 - 660
Tabungan (B)	
- Tohungan ot Rumoh	1.500-000
- Tolorgan tie uscho	850 000
Tohunor 166 sehilah	170-000
Takingen (cm²	/40.000







Innovative Delivery Channels

- Scope and reach of even most well-designed financial education is limited:
 - Supply side difficult and expensive
 - Demand side challenging to attract and retain interest

Innovative Delivery Channels

- Scope and reach of even most well-designed financial education is limited:
 - Supply side difficult and expensive
 - Demand side challenging to attract and retain interest
- □ Entertainment media offers a promising (potential) solution:
 - Broad outreach nearly every household has access to a TV
 - Captive audience emotional connections to storylines and actors

South Africa Edutainment Study

 Debt management messages in a popular soap opera (Berg and Zia, Forthcoming)

- Randomized Encouragement Design:
 - Treated Group: Incentivized to watch "Scandal!"
 - Control Group: Incentivized to watch "Muvhango"



The Storyline

Main Character: Maletsatsi Wife, mother, and manager of local stokvel





Malestatsi gives into social pressure to furnish her guest room



Malestatsi gives into social pressure to furnish her guest room

Convinces her husband, Eddie





Buys furniture, fridge, dining set, and TV, all on shop credit!



Buys furniture, fridge, dining set, and TV, all on shop credit!

Eddie is unhappy but Maletsatsi is convincing



Payments come due and Maletsatsi realizes she cannot afford them



She dips into the Stokvel pot, but lands into trouble





She turns to gambling



She turns to gambling

And loses





Eventually Eddie finds out



Eventually Eddie finds out

And is quite unhappy



Together they seek help from the NDMA and work their way out of debt

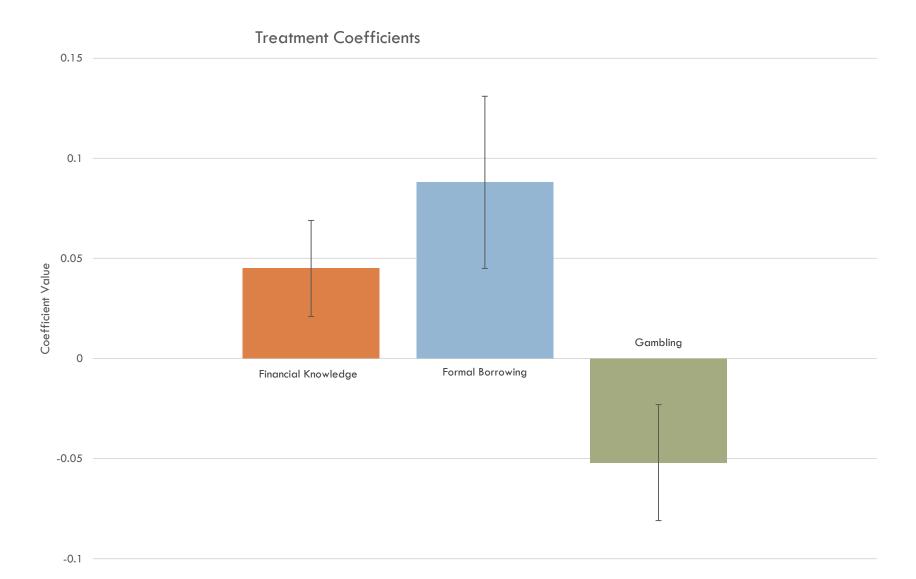


Main Messages

- Over-indebtedness
 - Temptation spending
 - Borrowing on hire-purchase

Gambling

- □ Help is available
 - National Debt Mediation Association



Incorporating Behavioral Channels

- Behavioral constraints can stymie good intentions:
 - Lack of attention
 - Lack of salience
 - Procrastination
 - Channel factors

Incorporating Behavioral Channels

- Behavioral constraints can stymie good intentions:
 - Lack of attention
 - Lack of salience
 - Procrastination
 - Channel factors
- Some success when behavioral limiters are removed:
 - Reminders to repay loans on time and to save are effective (Karlan, et al., 2012)
 - Framing and disclosure of adding-up effect of fees and interest reduces use of high interest loans (Bertrand and Morse, 2011)

■ Lotteries are a regressive tax

■ Lotteries are a regressive tax

- Reasons for playing:
 - Entertainment/aspirational utility

Lotteries are a regressive tax

- □ Reasons for playing:
 - Entertainment/aspirational utility
 - Over-estimating small scale probabilities
 - Availability bias

■ Lotteries are a regressive tax

- Reasons for playing:
 - Entertainment/aspirational utility
 - Over-estimating small scale probabilities
 - Availability bias

Teaching probability formulas is unlikely to work

Ferrari is a FAST Car!



Ferrari is a FAST Car!



But how fast is FAST?

Dimensions	
Weight	1365 kilo / 3009.3 lbs
Length / Width /	4702 mm (185.1 in) / 2035 mm
Height	(80.1 in) / 1147 mm (45.2 in)
Wheelbase / Track	2650 mm (104.3 in) / 1660 mm
(fr/r)	(65.4 in) / 1650 mm (65 in)

Performance figures	
Power	660 bhp / 492 KW @ 7800 rpm
Torque	657 Nm / 485 ft lbs @ 5500 rpm
BHP/Liter	110 bhp / liter
Power to weight	0.48 bhp / kg
Top Speed	350 km/h / 217 mph
0-60 mph	3.3 s

Dimensions	
Weight	1365 kilo / 3009.3 lbs
	4702 mm (185.1 in) / 2035 mm (80.1 in) / 1147 mm (45.2 in)
	2650 mm (104.3 in) / 1660 mm (65.4 in) / 1650 mm (65 in)

Performance figures		
Power	660 bhp / 492 KW @ 7800 rpm	
Torque	657 Nm / 485 ft lbs @ 5500 rpm	
BHP/Liter	110 bhp / liter	
Power to weight	0.48 bhp / kg	
Top Speed	350 km/h / 217 mph	
0-60 mph	3.3 s	



Dimensions	
Weight	1365 kilo / 3009.3 lbs
Length / Width /	4702 mm (185.1 in) / 2035 mm
Height	(80.1 in) / 1147 mm (45.2 in)
Wheelbase / Track	2650 mm (104.3 in) / 1660 mm
(fr/r)	(65.4 in) / 1650 mm (65 in)

Performance figures		
Power	660 bhp / 492 KW @ 7800 rpm	
Torque	657 Nm / 485 ft lbs @ 5500 rpm	
BHP/Liter	110 bhp / liter	
Power to weight	0.48 bhp / kg	
Top Speed	350 km/h / 217 mph	
0-60 mph	3.3 s	













Concrete and salient





Concrete and salient

Instantaneous reflection



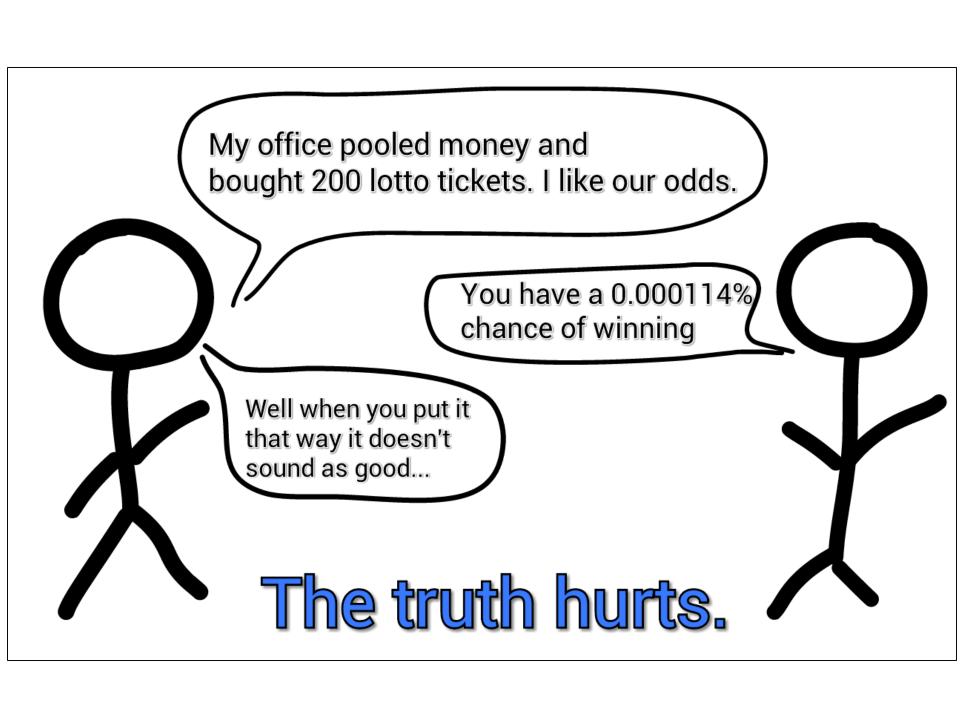


Concrete and salient

Instantaneous reflection

Memorable













Traditional Financial Education

In our sample, less than 50% of participants knew the correct answer to the question: "If you have R48, and I give you R58, how much will you have?"



Rules of Thumb?

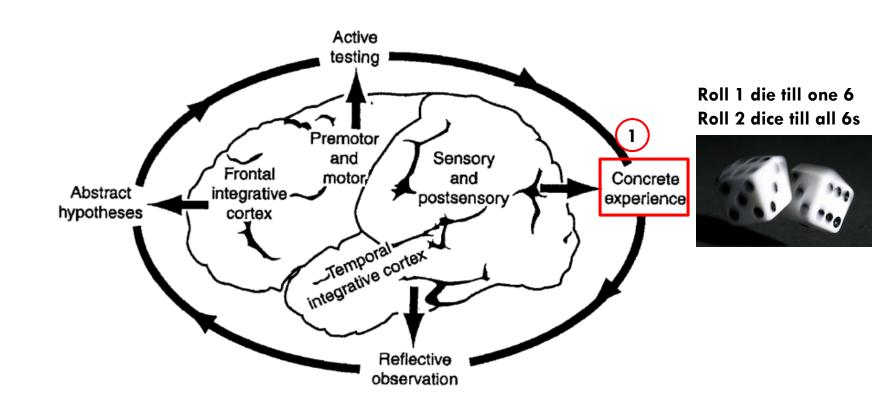




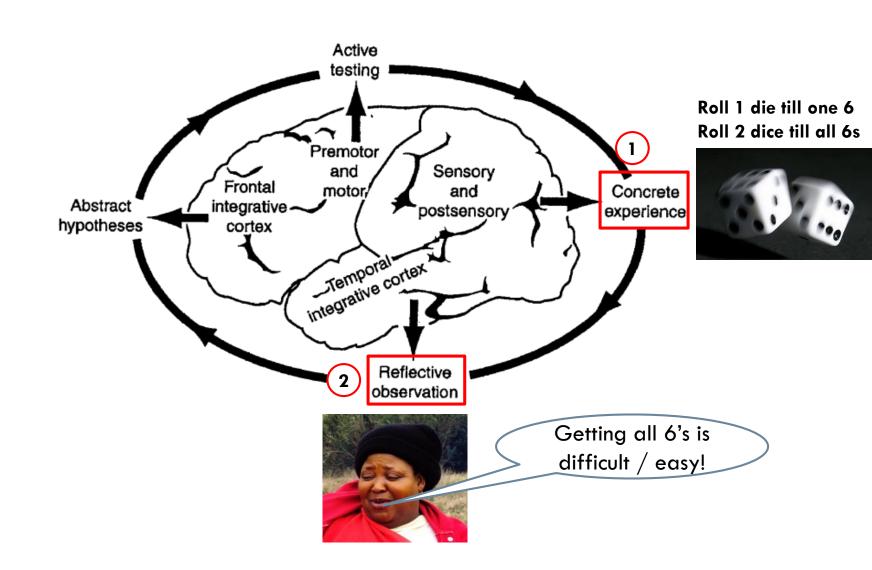
Experiential Learning?



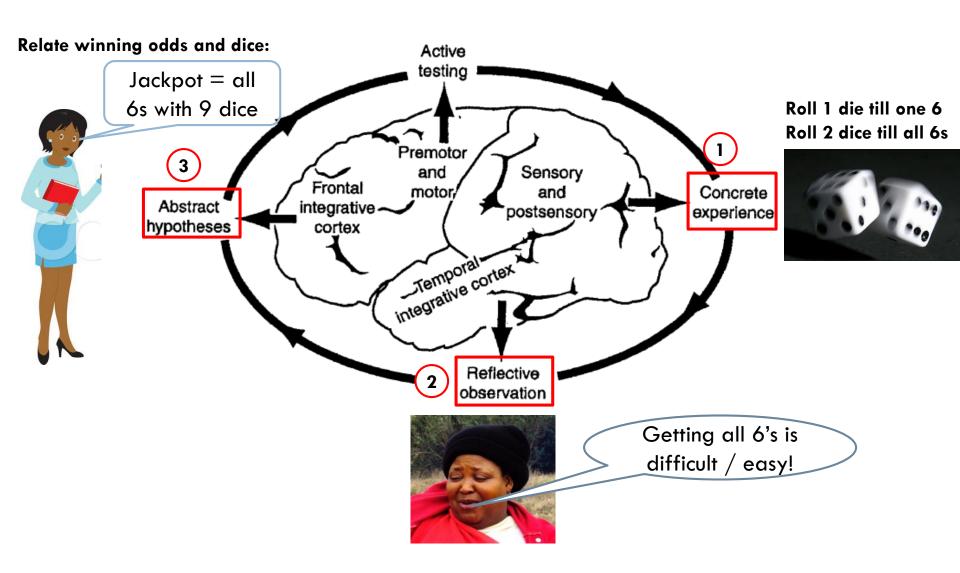
(Zull 2002)

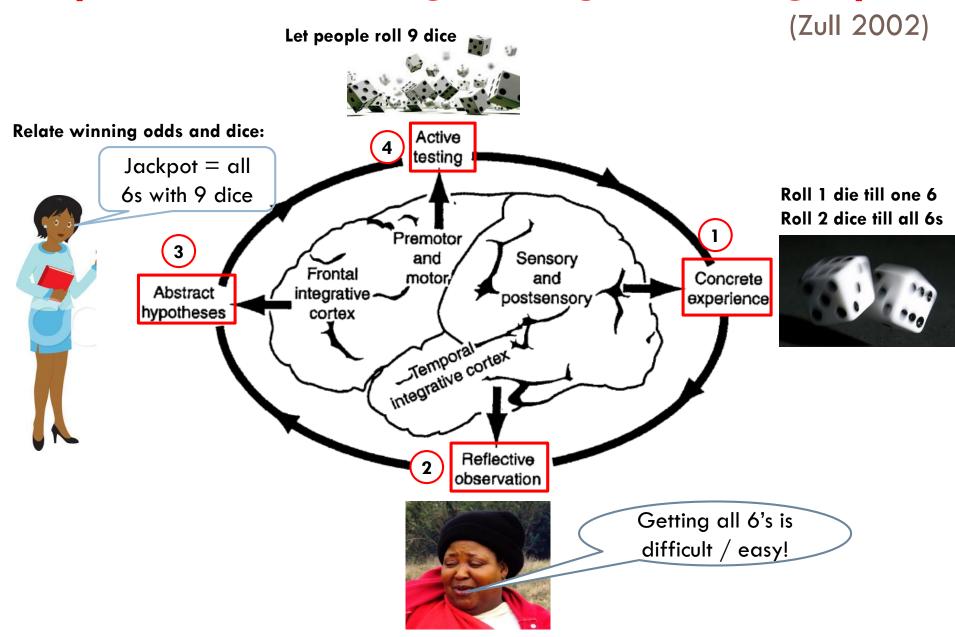


(Zull 2002)



(Zull 2002)





Field Experiment

□ Sample:

- 840 people,
- Rural South Africa
- □ Little formal education



Field Experiment

□ Sample:

- 840 people,
- Rural South Africa
- Little formal education

□ 2-staged randomization:

- 415 people assigned to gambling debias
- Random assignment of treatment intensity (# of dice rolls to get 2 sixes)



Field Experiment

□ Sample:

- 840 people,
- Rural South Africa
- Little formal education

□ 2-staged randomization:

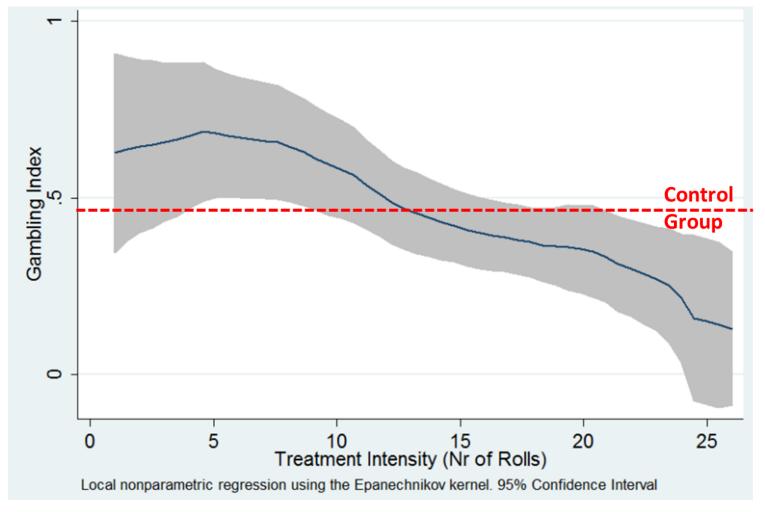
- 415 people assigned to gambling debias
- Random assignment of treatment intensity (# of dice rolls to get 2 sixes)

Outcomes:

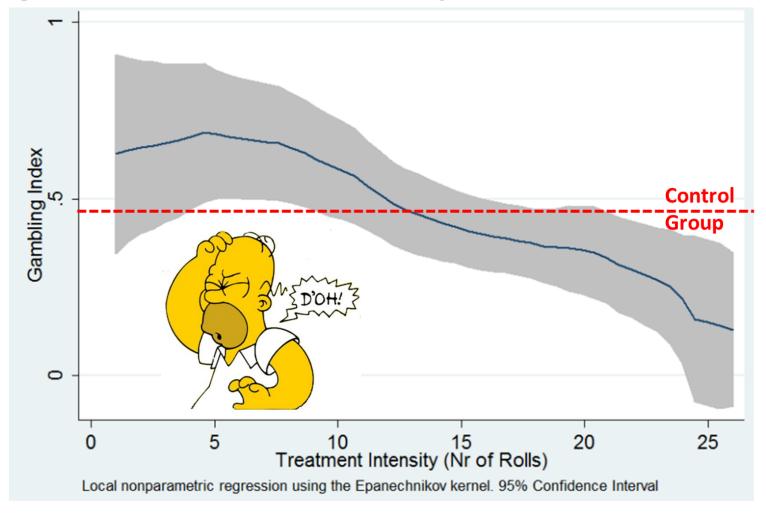
Measured immediately, after 6 months, and 12 months



Experiential Learning Works!



Experiential Learning Works!



Combination Therapy

- Evaluation in India (Carpena et al., Forthcoming):
 - Financial Education alone
 - + Goal setting through simple calendars
 - + Personalized counseling
 - □ + Both
 - Control



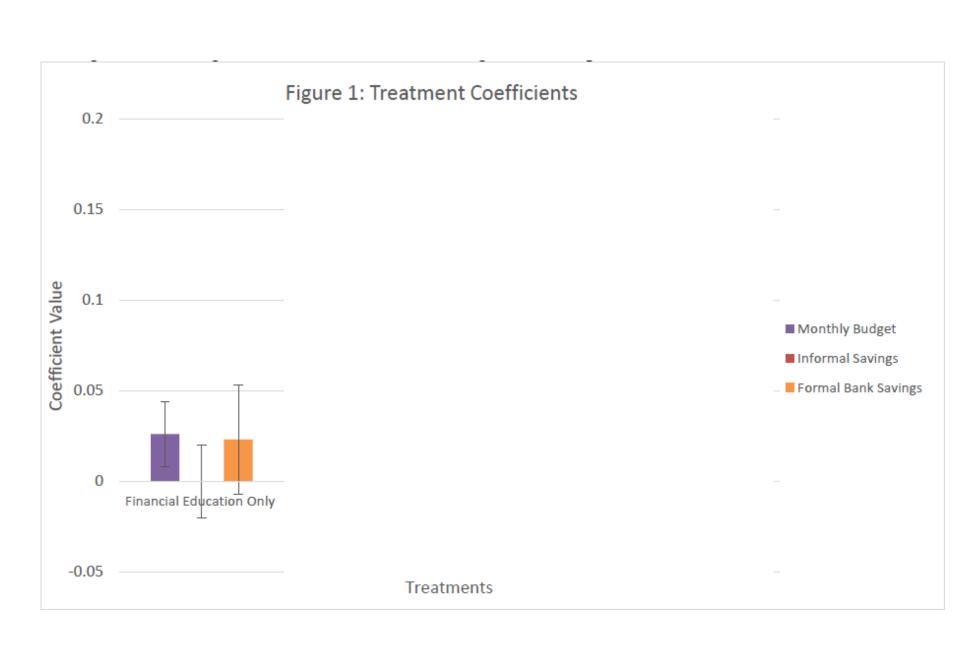
Personal Financial Plan

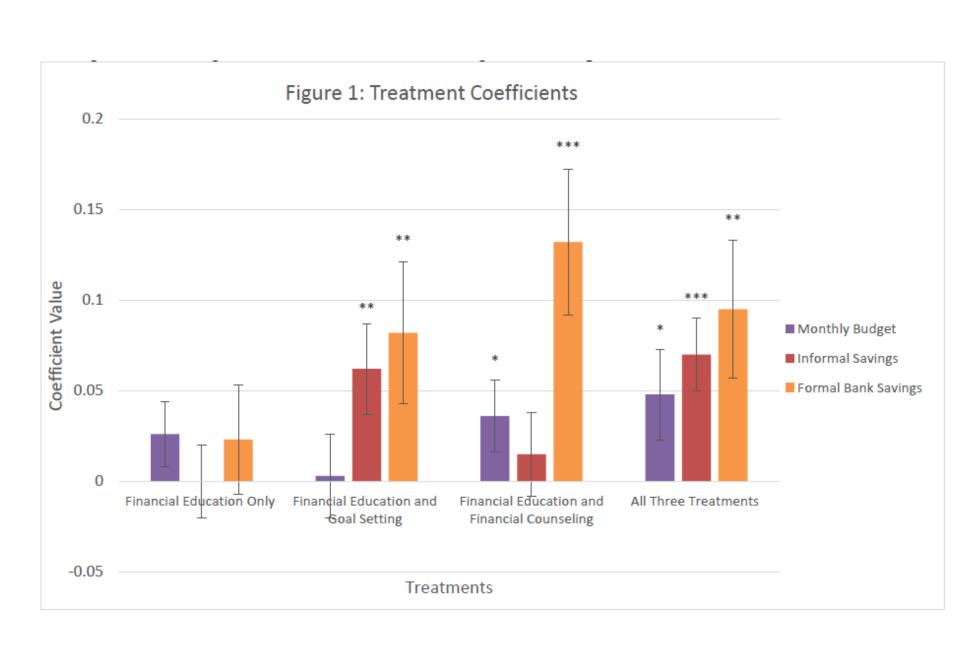
Insert Photo Here

	Item	Target Date	Achieved?
	MFI Savings		
	Account		
	Bank Account		
	Change		
	Savings Habits:		and appeared by the
	The same of the sa	Alleger Marie American de Maria	Sinkerhald middle Stromark hallenge better
A	Reduce		
	expenditure	3	
	on	A JANA MAN	· 持载。
7	Obtain		
	Insurance		



Personal Financial Plan					APRIL-2010	
SUN	MON	TUE	WED	THU	FRI	SAT
		2	3			
4	5	6	7	8	9	10





Concluding Remarks

Financial education is not a silver bullet

However, it can be an effective tool when delivered at the right time, to the right audience, through the right channels, and in combination with other interventions

Next wave is focusing on digital delivery

More research needed on longer-term effects