Undergraduate student financial literacy interventions: Medium term evidence of retention and decay

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Thanks to Financial Literacy Australia
Why study college students?

1. Important aspects of “autonomy will be laid down during the college years”
   Students identify becoming financially independent as key adulthood marker

2. “Urgent need” to improve student FL
   Need to add courses to college curricula

3. College level evidence sparse & short-term
   - Meta-analyses: Kaiser & Menkhoff (2017) 9 college studies; Amagir et al. (in press) 4 more
   - Longer studies “retrospective”
     don’t control baseline
   - Short-term studies generally small “dose”
37% 25-34 year olds bachelor degree

Most students
- live at home (~71%)
- work (~68% at least <10 hours week)
  - which leads to a majority (~62%) having superannuation (~401k)
- don’t have credit cards (9-16%) cf (56% US)

Student Loans
- Fees split between govt. & student (govt loan)
  - No interest, indexed, income contingent repayment (via Tax Office)
  - Repayment starts @ 4% ($55k inc., US$43k) to 8% ($104k, US$80k)
- 79% students have debt, mean annual US$4k (Table B5.4 OECD 2017a)
  - US: 62%, mean US$4.3k
  - UK: 92%, mean maintenance US$5.6k, tuition US$10.8k
# Managing Your Personal Finances

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
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| One   | "What's it all about?"
      | Personal Financial Planning Process |
| Two   | "Am I saving the right amount?"
      | Saving money forever |
| Three | "Do I need to borrow more money?"
      | Too Much Debt |
| Four  | "Please sir, may I pay some more tax?"
      | Overview of personal tax issues |
| Five  | "Should I rent or buy"
      | Home Ownership |
| Six   | "Do you want insurance with that?"
      | Protecting ourselves |
| Seven | "Owning your first..."
      | Dimensions of Personal Finance |
| Eight | "How does my behaviour betray me?"
      | Lessons from Behavioural Finance |
| Nine  | "Where can I put my money?"
      | Assets, portfolios and diversification |
| Ten   | "Retirement? Kids? Marriage?"
      | Really Long-Term |

- Tutorial
- Reflective Journal
- Financial plan
- Group assignment
- Exams
Method

- **Survey students**
  - prior to semester (Pre), final week semester (Post), each year following (1yr, 2yr, 3yr)

- **865 Pre, 222 completed 3yr survey (2072 total)**

- **Those completing 3yr survey scored, at baseline:**
  - Higher Conscientiousness
  - More likely from Arts/Humanities major,
  - Lower extraversion, agreeableness, risk tolerance
  - Not significant: baseline financial literacy, enrolled, income, assets, debt, future time perspective, prior studies
## Survey scales: Baseline

- **Objective FL**: Basic, Advanced  
  - Introduced Fernandes et al. in 2015

- **Subjective FL**: Investing, Super/401k Knowledge, Financial Decision Making Ability, Satisfaction Managing Finances  
  - (Lusardi & Mitchell 2009; van Rooij, Lusardi, & Alessie 2011)

- **Financial Behaviour and Intentions**:  
  - Goal, Budget, Track, Emergency  
  - 5 items: Afford, pay bills on time, etc.  
  - OECD-INFE (2011)

- **Information source importance**  
  - OECD-INFE (2011)

- **Controls**:  
  - Maths ability, Study major, financials demographics  
  - Big-Five personality traits  
  - John, Donahue, & Kentle (1991)  
  - Risk tolerance, future time perspective  
  - Jacobs-Lawson & Hershey (2005)  
  - Prior studies, Discussion of finances at home  
  - Shim et al. (2010)
Method

• Mixed effects estimator with individual random effects, to control for differential attrition

\[ y_{it} = \beta_0 + \beta_1 \text{Survey}_t + \beta_2 \text{Unit}_i + \beta_3 \text{Survey}_t \times \text{Unit}_i + \beta_4 x'_{ij} + u_j + \epsilon_{ij} \]

• Objective FL measures:
  – Raw, Bartlett factor score (follow von Gaudecker’s (2015) treatment of “don’t knows”)
  – Choices with longitudinal data

  • what informs factor structure?
  • standardising for effect sizes? (Cohen, 1988)
  • pitfalls: Moeller (1998)
Results – Controls

• Negative: Gender (female) effect
  – Cf: OECD PISA 2015 Female +ve effect in Aust.

• Positive:
  – Commerce major, Maths Ability, Assets, Age
  – Previous Studies (High School, Advanced FL)
  – Discussed at Home (Advanced FL)
Results – Objective FL

Predicted Basic (max 4)

Predicted Advanced (max 4)

Predicted FLN (max 12)

Cohen Effect Size
No rejection
Equality*
*Basic Post vs 1yr

Basic result driven by female students
Are those completing the unit more likely to think they know more than they do?

– No

• Post survey, those completing unit more likely to be “calibrated” – less likely to under/over estimate

• 2016 surveys, no more/less likely
Results – Subjective FL (7-point scales)

Confidence/Self-Efficacy? Part II

- Financial Decision Making Ability
- Investing Knowledge
- Superannuation Knowledge
- Overall Satisfaction Managing Finances

Results more robust female students

Confidence/Self-Efficacy? Part II

Results – Subjective FL (7-point scales)

Confidence/Self-Efficacy? Part II

Results – Subjective FL (7-point scales)

Confidence/Self-Efficacy? Part II

Results – Subjective FL (7-point scales)

Confidence/Self-Efficacy? Part II

Results – Subjective FL (7-point scales)

Confidence/Self-Efficacy? Part II

Results – Subjective FL (7-point scales)
What change is successful?
What change is successful?

Score Change: Objective vs Subjective

- Improve objectively but:
  - Identifies deficiency
  - Lack confidence

- Improve objectively and:
  - Aware
  - Confident

- Going backwards:
  - Poor materials
  - Ill directed
  - Disengaged

- Improve subjectively:
  - Identify level sufficient
  - Unfounded
  - Overconfident
Change combinations by gender

Score Change: Objective (Advanced) vs Subjective (Investing) (Post vs Pre)

Change in Objective Score

-4 -2 0 2 4

Change in Subjective Score

-6 -4 -2 0 2 4 6

Female  Male

4%  8%  48%

4%  5%  21%, 18% 47%

3%  1%  6%  5%  7%
Obj. Change vs Subj. Change: 3yr vs Pre

Objective (Advanced) vs Subjective (Investing Knowledge) (Third year vs Pre)

- Change in Objective Score vs Change in Subjective Score
- Female vs Male

Objective (Advanced) vs Subjective (Super Knowledge) (Third year vs Pre)

- Change in Objective Score vs Change in Subjective Score
- Female vs Male

Objective (Advanced) vs Subjective (Satis. Managing Finances) (Year Three vs Pre)

- Change in Objective Score vs Change in Subjective Score
- Female vs Male

Objective (Advanced) vs Subjective (Fin. Decision Making Ability) (Year Three vs Pre)

- Change in Objective Score vs Change in Subjective Score
- Female vs Male

- Percentages indicated for each category of change.
What change is successful?
What change is successful?

Attitudes
Preferences
Behaviours

Financial Capability

Financial Literacy

Subjective

Objective
**Results – Behaviour, Information Source**

**Predicted Probability Behaviour**

- Track spending
- Emergency
- Establish Financial Goal(s)
- Make a Budget

**Behaviour Freq. (1 Never 5 Always)**

- Pay bills on time
- Check can afford
- Watch expenditure
- Consult

**Information Importance (Max. 5)**

- Authority
- Family/Friends
- Unsolicited Advertisements

High baseline remain, effects dissipate
NB. Traits important
- Conscientiousness
- Future Time Perspective
- (amenable to interventions)
Socialisation role
- +ve role discussed at home
- Debt, income

OECD-INFE (2011)
Summing up

- Caution: sample size, attrition

- Objective FL
  - Estimated effect sizes small to medium after 3yrs
  - Some decay, not robust, as much an increase for Control
  - Prior studies positive (*can these be leveraged?*)

- Subjective FL
  - Estimated effect sizes small to medium after 3yrs
  - Stronger effects for female students (knowledge items)

- No evidence of overconfidence
  - *Need further consideration of basic & subjective change*

- Behaviour change less robust over time
  - Reflection unit objectives? *Role of traits: FTP interventions?*
You’re very welcome to visit!