

Cell-Ed

ProSocial Valuation Statement



Image: Getty

The ProSocial Valuation Service

What We Do, Why and How We Do It

The ProSocial Valuation Service (PSV) values social ROI with the same rigor, transparency and clarity used to measure financial ROI.

We value what has widely been considered unmeasurable: social capital—a term we use broadly to refer to all types of public goods that benefit people and planet. While not traded on a commercial marketplace, the currency that PSV values shapes the health and well-being of individuals, neighborhoods and nations.

Backed by evidence-based research in which there is a proven correlation between a given intervention and a specific outcome, we convert each unit of social capital into a universally understood dollar value, typically based on savings to the public and/or benefits to individuals.

We account for positive, negative and independently occurring impacts.

PSV has been used to value community effects in areas as diverse as health, education, homelessness, community redevelopment, clean water and social inclusion. Our mathematical grounding, use of outcome-based primary research and complete transparency—we are explicit about what is valued, the value assigned and the research supporting the calculations—resonates equally with foundations and trusts, strategic philanthropists, brands, governments, volunteers and impact investors as well as nonprofits, NGOs, and social enterprises.

PSV also audits the activation programs of sponsors and values any elements with prosocial overlays.

Methodology. We use the same methodology for every Valuation. This allows comparisons across markets, genres and approaches. Step one in the process: identifying the taxonomy of outcomes which could be created by an initiative. This typically involves a data audit and literature review. Step two: measuring which, if any, of those outcomes occurred and if so, to what extent and subtracting any negative outcomes and what would have occurred anyway. Next, we mathematically convert each unit of social capital into a dollar value.

We also account for intellectual capital, the six intangibles that drive scale and progress. These are: 1) Audacity: envisioning big, bold solutions and tackling chronic problems over temporary ones; 2) Connectivity: creating buy-in among multiple constituencies; 3) Capacity: use of data, talent development and governance; 4) Ingenuity: disrupting entrenched approaches; 5) Tenacity: leveraging relationships and resources required to persevere; 6) Diversity: the number of discrete sources of funding. To remove bias, each intangible has a scoring narrative. Example: To receive the top score on “diversity,” an organization must have at least five discrete sources of funding.

PSV’s algorithm for valuing intangibles is a combination of velocity—the importance of the market(s) in which the program is held (based on its geography and soft power, i.e., the ability to persuade by attraction rather than by coercion or force)—and the rank and weight of each intangible is relative to the other five.

We combine the value of the tangibles and intangibles, then divide that sum by the budget to arrive at the cost/benefit ratio and ProSocial ROI.

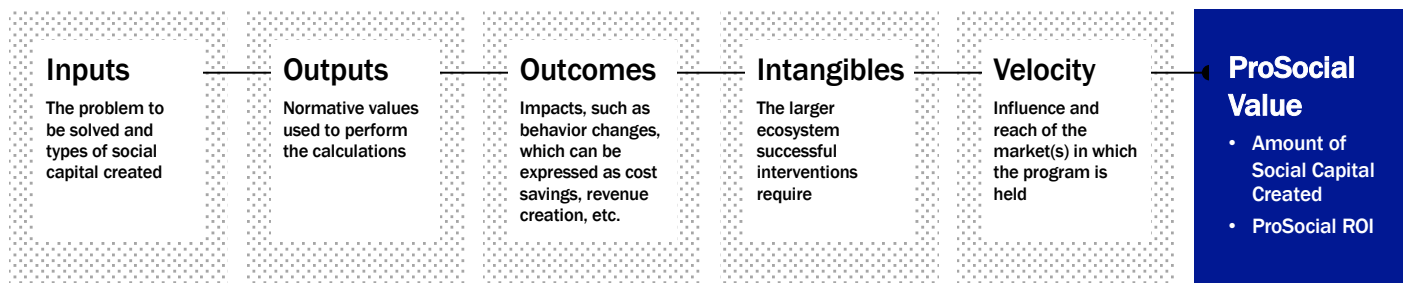
The ProSocial Valuation Service (continued)

In every instance of calculating the social capital created by Cell-Ed, we erred on the side of fiscally conservative:

- We only count outcomes backed by independently verified research.
- We do not include tertiary benefits or multipliers. Example, helping a homeowner avoid foreclosure benefits the broader community by stabilizing market values but we do not include these wider benefits in our calculation.
- We only credit Cell-Ed with the percent of the outcome it caused and do not include what would have occurred otherwise. We refer to this as the attribution percentage. For example, if an outcome generates a one-year value of \$10,000 and Cell-Ed's measurable contribution to the outcome is 20 percent, the value attributed to Cell-Ed is \$2,000.
- We calculate the value of only one-year's operation, rather than the lifetime of the organization, value. This Valuation is a one-year look at the value delivered in 2020.
- We did not include the economic impact of Cell-Ed activities, such as purchasing or increased tax revenue attributable to Cell-Ed.

About. PSV was launched in 2016 by Lesa Ukman, founder of IEG and creator of the analytics used to select, value and optimize ROI in sponsorships (www.lesaukman.com) and Jed Pearsall and Bill Doyle, co-founders of Performance Research (www.performanceresearch.com), a global leader in measuring the marketing impact of corporate partnerships with sports leagues and events, entertainment properties and nonprofits. Funders—foundations, trusts, strategic philanthropists, impact investors and governments—use PSV to determine where to invest to have the greatest impact. Nonprofits and NGOs, including Homeless World Cup, the American Bar Association's Free Legal Answers, Miami's New World Symphony, and Bethlehem, PA's ArtsQuest, use PSV to make visible what has been invisible and demonstrate the value they create, make the case to funders and stakeholders and drive improvement.

How We Do It: Heart + Smart



ProSocial Valuation

Social Capital Created by Cell-Ed:

\$30.3 million: \$55-to-\$1

2020

Inputs: Types of Capital
Cell-Ed Creates

Outputs

Outcomes: Results
Attributable to Cell-Ed

Tangibles: Sub-totals

+

Intellectual Capital:
Intangibles⁴

=

ProSocial Value

Human Capital ¹	Civic Capital ²	Community Capital ³
5,268 people elevated by 0.72 literacy grade level per course 0.22% earning boost per child \$831 increase in earnings per year 19 less workdays lost through unemployment \$450 increased savings 110 less ER visits (1.1% reduction) 1.27% less depression cases	0.65% increase volunteering 474 additional voters 0.005% increase in voter turnout	2.5 less incarcerations
Intergenerational benefit \$10.8M Higher wages: \$10.5M Better physical health: \$4.3M Increased employment: \$1.4M Better financial decision-making \$1.2M Improved mental health: \$0.4M	Increased civic engagement - Voting \$101 Volunteering \$0.5M	Reduced crime \$0.2M
\$28.6 million	\$0.5 million	\$0.2 million

Audacity \$312K	Connectivity \$119K	Capacity \$235K	Ingenuity \$109K	Tenacity \$208K	Diversity \$59K
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Social Capital = \$30.3M (Tangibles: \$29.3M + Intangibles: \$1M)

ProSocial ROI = \$55-to-\$1 (ProSocial/\$555K, 50% of Cell-Ed US literacy budget)

Cell-Ed

Literacy for the 21st Century

Cell-Ed, creator of award-winning, scalable, accessible and engaging mobile learning solutions, addresses one of the country's most intractable problems: adult illiteracy. A hidden epidemic, one in five American adults cannot read.

The Silicon Valley-based social enterprise gives low-literate, low-income adults the language, reading, numeracy and job training they need to better their lives.

Its science-based, anytime, anywhere software, content and coaching is available on any device, smartphones, tablets, computers, flip phones, no internet connection or data plan needed. Cell-Ed lessons last no longer than three minutes so learning happens everywhere, on the bus, during a break at work, etc. In fact, highest usage is just before lunch breaks and in the evenings between 7 pm and midnight. Learners text to demonstrate understanding of the lesson and can talk and text with Cell-Ed automated and live, bilingual coaches.

Built on rounds of testing and iterating, Cell-Ed is data-driven and hyper-responsive to the needs of its users. Learners experience 84 percent faster skills gains compared to in-person trainings.

Providing its cash- and time-strapped learners with the most effective and efficient pathway to work and advancement, Cell-Ed out-performs both in-person training as well as other distance learning solutions. Fact: A full 75 percent of Cell-Ed users complete its curriculum, compared to just five percent completion rates for classroom training and 20 percent for other online offerings.

The increased effectiveness of Cell-Ed enables more Americans to achieve better outcomes for themselves, their families and their communities.

This matters. Literacy affects human functioning across the life span, including our physical and mental health and socioeconomic status. The negative consequences of illiteracy are passed on from one generation to the next: Children of parents with low literacy have a 72 percent chance of being at the lowest reading levels themselves. These children are more likely to get poor grades, display behavioral problems, have high absentee rates, repeat school years and drop out.

Beyond individuals and their families, low literacy and its correlates—including unemployment and under-employment, poor health, low self-esteem etc.—negatively impact society as a whole.

Cell-Ed's comprehensive solutions to reach, teach, and upskill millions of overlooked adults offer maximum flexibility and zero barriers to entry—Cell-Ed is free to learners. Cell-Ed is used by businesses, governments, nonprofits and education providers such as Pearson, the states of New York and Texas, SEIU, the Los Angeles Public Library.

To produce this ProSocial Valuation (PSV) of Cell-Ed's US literacy platforms we a) identified the measurable outcomes of Cell-Ed training to learners and communities; b) calculated the dollar value of each outcome; and c) summed the outcomes and divided by the applicable budget to arrive at the ProSocial ROI.

As documented in this Statement, the net value of Cell-Ed far outweighs its costs. For the year 2020, every dollar invested in Cell-Ed training, \$55 is returned.

Funding for this valuation was provided by Strada Education Network, one of Cell-Ed's key supporters. Strada's purpose is to improve lives by forging clearer and more purposeful pathways between education and employment.

Cell-Ed

Awards

Sampling of Cell-Ed Prizes, Awards and Grants, 2017-2020

■ 2020

- Barbara Bush Foundation for Family Literacy, State of New York Office for New Americans and Dollar General Literacy Foundation sign on as Official Partners of Cell-Ed's 1 Million Learner Challenge.
- \$50K Rise Prize for Cell-Ed's 1M Parent Learner Challenge "one of the most innovative ideas for supporting post-secondary success of student parents."
- Drucker Institute selects Cell-Ed to provide upskilling courses and coaches to Indiana residents with plans to bring Cell-Ed training to another 15 markets over the next five years.
- KaiOS Technologies placed Cell-Ed courses and guides on KaiOS Life app and WhatsApp as part of its founding membership in Cell-Ed's 1 Million Learner Challenge.

■ 2019

- Finalist, \$7M Adult Literacy X Prize for solution that's measurable, easy to use and engaging.
- Pearson Project Literacy named Cell-Ed a "rapid-growth venture positioned to help close the global literacy gap by 2030."
- Schmidt Futures named Cell-Ed one of two best ideas for "how tens of millions of low-income workers increase their education and earning power."

■ 2018

- Recipient, Strada Education Network's Investment Fund that backs ventures creating education-to-employment pathways.
- Raised \$1.5 million seed round led by Lumina Impact Ventures.

■ 2017

- Finalist, Global EdTech Startup Awards for improving access to learning.
- 25 Innovations in American Government Award by Harvard University Ash Center Democratic Governance and Innovation.

Cell-Ed

2020 in Numbers

The Literacy Challenge

46M

US adults possessing
low literacy skills

89%

Adults with low literacy
skills unable to attend
in-person courses

Cell-Ed Participation

5,268

People completed
Cell-Ed courses

0.72

Grade level literacy
increase per course

Cell-Ed Platform Success

Cell-Ed
participants
engaged with
platform

56%



Other digital
education
solutions'
participant
engagement

10%



Cell-Ed's
completion
rate

75%



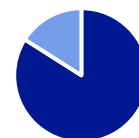
Average online
class completion
rate

20%



Average in class
completion rate

5%



84%

Faster gains than
in-person training

Cell-Ed Learner Profile

60%

Female

41.3

Years Old
Average Age

96%

Post-Secondary School
Age (20+ years old)

89%

People of
Color

Cell-Ed Approval

94%

Learner approval rating

Valuation Notes

References and Research

Cell-Ed's many roles were found to have three main areas of impact on society – Human, Civic, and Community.

The first and largest category is Human Capital, incorporating skill development & career advancement and health & wellness. Skill development and career advancement included less unemployment, increased wages, intergenerational gains and improved financial decision-making. The impact of health and wellness measures included physical and mental health benefits.

The Civic Capital derived from Cell-Ed centered on increased voting and volunteerism. The impact of increased volunteerism was measured as the benefit to the volunteers themselves in the form of increased life satisfaction, community pride, and positive social interactions.

The Community Capital was derived from the benefit to society of the incarcerations avoided through improved literacy.

In all instances, a conservative approach was taken on cost estimation. For example, appropriate allowances were made for the age of Cell-Ed learners, the number and likely age of their children, the degree to which their literacy increased, whether or not they were in the workforce, other sources from which they may learn etc.

Each calculation is based on Cell-Ed's 2020 reported learners. 4,463 learners fully completed their course. 8,049 were reported as partially completing a course. For these people it was assumed they had only completed 10% of their course, equivalent to 805 people fully completing a course. This yields 5,268 course-completers in all.

The academic impact of a number of Cell-Ed's courses have officially been recognized as equivalent to a specific increase in literacy. We analyzed those courses and averaged the number of lessons leading to a certain literacy increase. This average could then be applied to the courses without an officially-designated literacy impact. After applying weighting based on the portion of students in each course the average literacy increase for the average student could be calculated. This was 0.72 of a grade level increase in literacy per course.

The academic studies used in the calculation based their findings on a certain learning or literacy increases. In order to appropriately apply Cell-Ed's impact, each calculation was proportionately scaled to be equivalent to 0.72 of a grade level in literacy.

¹ Human Capital encompasses Cell-Ed's impact on the current and future prospects and wellness of those involved with its programs and their children. Human capital is considered in two parts: skill development & career advancement (1a – 1d) and health & wellness (1e & 1f).

The Human Capital outcomes related to skill development and career advancement were 1a. Increased employment; 1b. Increased wages; and 1c. Better financial decision-making and 1d. Intergenerational impact.

1a. Increased employment was valued at \$1.4M.

Two parts of the lifetime earnings "equation" were taken into account in this statement. The first is the percentage of days in a typical working life the person was employed rather than unemployed. The second is the money earned during the periods of employment.

To calculate the first part – employment – we started with a study lead by Axel H. Börsch-Supan [bit.ly/Borsch-Supan] which conservatively estimates the number of periods of unemployment in an average working life. We scaled this proportionately to the number of working years left after completion of a Cell-Ed course. We then linked it to the change in the average number of days of each of those periods of unemployment depending on literacy level using Arendt, Rosholm and Jensen's study [bit.ly/ArendtRosholm] along with data from the OECD "Literacy in the Information Age" report [bit.ly/OECDLiteracy]. The result was 19.2 less days of unemployment over the remaining working years. Emphasizing the conservative approach, we then used the federal minimum hourly wage to calculate the boost to lifetime earnings of the shorter periods of unemployment and applied this to the number of Cell-Ed graduates in the workforce.

1b. Increased wages were valued at \$10.5M.

A recent study conducted by Gallup's lead researcher Jonathan Rothwell on behalf of the Barbara Bush Foundation for Family Literacy [bit.ly/BarbaraBushStudy] calculates the specific increase in annual wages associated with an increase from Level 0 or 1 literacy (defined as Low Level literacy) to Level 2 literacy (just below proficiency). Cell-Ed was then given credit for an appropriate portion of the wage increase by taking into account the increase in literacy associated with an average Cell-Ed course, the proportion of Cell-Ed learners who are working, the number of other sources from which they learn and the remaining working years after the literacy boost from their Cell-Ed achievement.

1c. Better financial decision making was valued at \$1.2M.

The financial pitfalls of low literacy and the associated lower level of financial literacy are extensive and well studied, for example: [bit.ly/MitchellLusardi], [bit.ly/HastingsMadrianSkimpyHorn], and [<http://bit.ly/ALusardi>]. The pitfalls range from major concerns such as poor retirement planning, making low-return investments and taking unfavorable loans, to smaller difficulties such as balancing a checkbook, reading bank statements and effective comparison shopping. However, research quantifying the resulting financial loss (or forfeited financial gain) is fragmented and tends to focus in on one of myriad of ways lower literacy can lead to unfavorable financial outcomes. We used a 2010 metanalysis by J. Michael Collins and Collin M. O'Rourke [bit.ly/CollinsORourke] which analyzes 41 US studies on the subject and the conclusions drawn by each one. Of the studies, 15 quantified the overall fiscal impact of improved financial literacy. Of these studies we used Collins' 2009 study which reported a gain in savings of \$450 as a result of increased literacy in the financial area.

Valuation Notes (continued)

1d. Intergenerational impact was valued at \$10.8M.

A parent becoming literate, or more literate, impacts their children in many ways from reading bedtime stories to young children, to helping with homework, reaching out to teachers, understanding report cards and modeling dedication to learning.

The combination of effects on their children when a parent's literacy is increased has been studied using many different approaches and in many countries. For our calculation, we applied the findings of a study by Hertz et al which estimates 50-year trends in the intergenerational persistence of educational attainment for a sample of 42 nations around the globe [http://bit.ly/Hertz_et_al]. For the United States, the study concludes that when parents achieve an additional grade level of education, their children gain 0.46 years in addition to their parent's highest achieved level of education. As Cell-Ed focuses on literacy, we assumed increasing the parent's literacy by the equivalent of 1 grade level was equivalent to ½ a completed school grade level. Having worked out the equivalent increase in school grade, we turned to this World Bank-sponsored study [bit.ly/MontenegroPatrinis] which applies the Mincer earnings function to countries around the world. This study finds that in the US one additional year of schooling leads to a 10% increase in earnings, allowing us to calculate the likely increased earnings enjoyed by the children of those completing Cell-Ed courses.

Census statistics and proprietary Cell-Ed data was used to calculate the number of children Cell-Ed participants were likely to have and their ages when their parent completed the course. This data was used to calculate the likely impact on their children's own educational achievement. When all the factors were taken into account, each child saw a 0.22% increase in earnings as a result of their parent's Cell-Ed participation.

The Human Capital outcomes related to health and wellness were 1e. Improved physical health; 1f. Improved mental health. A significant segment of Cell-Ed's societal value comes from the improved health of its learners.

1e. Improved physical health was valued at \$4.3M

Overall, people with low literacy are more likely to have many types of physical health challenges. Some of these may arise directly from their literacy challenges (e.g. incorrectly following prescription instructions, or being unable to navigate the healthcare system) while others may be indirect (failing to schedule a mammogram leading to delayed cancer detection), but both ultimately end up in hospital admission, often through the Emergency Department. Avoidable Emergency Department admissions was used as an overarching measure of the many types of impacts of low literacy. Evidence used to calculate the social costs associated with low literacy is drawn from a two-year study of the reasons behind hospital Emergency Department admissions [bit.ly/MBalakrishnan] which identified the number of those potentially preventable admissions that were due to poor literacy related to health.

The calculation took into account the increase in literacy associated with an average Cell-Ed course, the number of other sources from which they learn and the average remaining life expectancy after their Cell-Ed literacy boost. The outcome was a 1.1% reduction in avoidable Emergency Department visits, which translates to 110 less visits per year.

1f. Improved mental health was valued at \$0.4M.

There are multiple studies tying increased literacy increased feelings of self-worth and self-efficacy and improved lifelong mental health benefits such as reduced depression and anxiety.

To quantify the impact, we used a 2006 study by Weiss, Francis, Senf, Heist and Hargreaves [bit.ly/BDWeiss] which analyzed depression rates as literacy increased. This study established 10% of people with low literacy skills suffered from depression. The difference in depression rate compared to the general population's level of literacy allowed us to calculate how many people Cell-Ed's program will have stopped from becoming depressed - a 1.27% reduction.

In order to calculate the value to society of the mental health issues prevented through participation in Cell-Ed's programs, the cost and proportion of both the serious and less serious mental disorders requiring treatment was calculated. The following studies were used to calculate the appropriate proportions and costs:

[bit.ly/CroghanObenchain], [bit.ly/MentalHealthNAMI] and [bit.ly/CorettiRumi]. The average lifetime cost associated with depression \$9,912.

² Civic Capital encompasses the impact of increased levels of voting and volunteerism. As a result of the increased rate of literacy, those completing a Cell-Ed course are more likely to participate in civic activities such as 2a. Voting and 2b. Volunteering.

2a. Increased voter participation was valued at \$101.

The increase in civic engagement through voting added only \$101 to the valuation, but the considerable increase in self-esteem and civic pride associated with this action makes it worth reporting. This calculation was based on a 2015 study by Summers and Langford [bit.ly/SummersLangford] which outlines voter participation at various literacy levels. The result of Cell-Ed participation was 474 additional votes being cast, a 0.005% increase in voter turnout. The value to society of this increase was calculated using data from Paul S Martin's study about the impact of political participation on congressional spending [bit.ly/PaulSMartin].

2b. Increased volunteerism was valued at \$0.5M.

Another type of civic engagement which increases with literacy is volunteerism. There is a growing body of research from neurology, sociology and gerontology finds that volunteering is linked to health and emotional benefits for the volunteer themselves (this is separate and apart from the value to the organization benefitting from their volunteered services). For this valuation, data from the 2019 OECD study linking key skills to social well-being [bit.ly/OECDKeySkills] was used to understand the increased rate of volunteering associated with improved literacy, which was a 0.65% increase in volunteerism among Cell-Ed learners.

Data on the health benefits of volunteering from a Konrath et al. 2011 study [bit.ly/Konratheta1] were combined with Actuarial Life Tables from the Social Security Administration to quantify the increased life expectancy among those actively volunteering. This was a 0.12 years reduction in mortality. The value of those extended lives was calculated using EPA estimates for the value of statistical life [<http://bit.ly/EPAVSL>].

Valuation Notes (continued)

³ **Community Capital encompasses Cell-Ed's impact on local communities through reducing the general crime rate.** The valuation of reduced crime rate was based on the cost of incarcerations that were avoided.

3a. Reduced crime was valued at \$0.2M.

The relationship between literacy and crime is complex and multidimensional, although it is universally agreed to be an inverse relationship. To calculate the value to society of the reduced incarceration rate we referenced Lochner and Moretti's extensive work which connected an extra year of education with a reduction in the likelihood of being incarcerated [bit.ly/LochnerMoretti]. Their work differentiated the incarceration rate by race and our calculation followed this approach. The data showed in 2020 Cell-Ed's program led to a 0.04%-0.13% decrease in incarceration, which, using Cell-Ed's participation numbers, translates to 2.5 people not getting incarcerated.

Data from the Prison Policy Initiative website [bit.ly/PrisonPolicyInitiative], the Bureau of Justice Statistics [bit.ly/BJSTimeServed] and proprietary Cell-Ed data was used to calculate the value to society of these avoided incarcerations.

⁴ **Intellectual Capital. Intangibles are valued by a combination of outcomes, velocity and the individual rankings and weightings of each intangible.** The velocity represents the momentum a program creates using PSV's proprietary weighted index of population, soft power and social media reach in the market(s) in which a program occurs. Soft power sources are: The Soft Power 30, A Global Ranking of Soft Power; Overall Best Country Rankings (U.S. News & World Report); Elcano Global Presence Report;; The World Factbook: Country Comparisons (CIA); and 'We Are Social's Compendium of Digital Statistics'. PSV's range for intangibles is based on analyzing the average percentage of intangible assets on the balance sheets of major publicly traded companies on the New York, London, Tokyo, Shanghai, and Bombay stock exchanges, Euronext (Amsterdam), Deutsche Boerse (Frankfurt) and B3 (Sao Paulo). The combined CAPEX of these companies accounts for 50 percent of total global market capitalization.

Cell-Ed was assigned ratings based on six intangible measures which were turned into qualitative questions to remove bias. 1) Audacity: envisioning big, bold solutions and tackling chronic problems over temporary ones. 2) Connectivity: creating buy-in among multiple constituencies. 3) Capacity: use of data, talent development and governance. 4) Ingenuity: disrupting entrenched approaches. 5) Tenacity: leveraging relationships and resources required to persevere. 6) Diversity: the number of discrete sources of funding. Each of these elements were scored using a proprietary ranking and weighting system to calculate the apportioning of intangible value.

Appendix

Health and Wellness

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