Start-Up’s Contribution for Changing India: Scope, Opportunities & Challenges

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I. Introduction:


DA’S Mission Is To Help Eliminate Poverty And Regenerate The Environmental Resource Base Through Methods That Are Highly Scalable. Its Activities Broadly Cover Three Primary Areas That Underlie Any Sustainable Development Process: The Design And Large-Scale Dissemination Of Appropriate Technologies, Rational Environmental Management Systems, And Equitable People-Oriented Institutions And Policies. The DA Group Innovates Such Eco-Solutions To Help Meet The Basic Needs Of All And Works With Partners, Including Government Bodies, Local Entrepreneurs And Civil Society To Market These In A Commercially Viable And An Environmentally Friendly Manner To An Ever-Growing Body Of Consumers.

India Has More Illiterate People Than Any Other Country In The World. India Is Plagued By Large Levels Of Illiteracy, With A Higher Number Of Female Illiterates. Thus, Development Alternatives, Under Its Mandate To Empower Communities, Developed The TARA Akshar+ Program To Impart Functional Literacy In Rural And Urban Spaces.
Literacy Status Of Women In India:

Literacy Refers To An Individual’s Ability To Communicate Through Reading And Writing. According To UNESCO, There Are 771 Million Illiterate Adults In The World. Nearly Half Of These Individuals Live In South Asia, Where Illiteracy Remains An Issue Disproportionately Affecting Women. For Example, In India, The Adult Female Literacy Rate (For Those Over 15 Years Old) Is 51%, Compared To 75% For Males (WDI, Data From 2006). There Are 400 Million Illiterates And Semi-Literates In India, Female Literacy. In Particular, Is Known To Be Associated With Lower Fertility, Improved Health & Hygiene Standards, Better Saving Practises, And Increased Gender Equity. While India Has Successfully Raised The Primary Enrollment Rates Of Boys And Girls Through Programs Such As Sarva Shiksha Abhiyan (The Flagship Universal Elementary Education Initiative) And The Delivery Of Mid-Day Meals. While Literacy Can Promote Self-Worth And Personal Development, The Government Of India Also Recognizes Its Potential Value To Society. The Progress Of India's Adult Literacy Rates Is Rather Weak. To Date, Research Has Found That The National Literacy Mission (NLM), Which Aims To Educate Illiterate Adults, Has Achieved Limited Success.

Illiteracy Is A More Pertinent Issue In Highly Populated States Such As Uttar Pradesh. Year After Year, The Indian Census Ranks The State As The Most Populated, As Well As Most Illiterate In The Country, The Literacy Rate In Uttar Pradesh Is On An Upward Trend, At 69.72 Percent In 2011 Compared To 56.27 Percent In 2001. Further, In 2011, The Male Literacy Rate Stood At 79.24 Percent, While The Female Literacy Stood At 59.26 Percent. In 2001, The Literacy Rate In Uttar Pradesh Was 67.30 Percent For Males And 43.00 Percent For Females. Our Study Is Comprised Of Villages Spread Across The State Of Uttar Pradesh.

TARA Akshar+

TARA Akshar+ Is A Literacy Project That Provides High-Quality Adult Education. Through Innovative Methods, To Women In Some Of The Poorest Areas Of India, The TARA Akshar Research Project Was Set Up To Evaluate The Effectiveness Of TARA Akshar+ As A Teaching Program, While Analyzing How Literacy Changes The Lives Of Adult Learners And Their Children.

The TARA Akshar Research Project Is A Collaborative Effort By Many Partners. TARA Akshar+ Was Developed By Readingwise International And Is Implemented By The Indian NGO Development Alternatives (DA). The Interdisciplinary Team Of Academic Researchers Come From The Centre For Development Economics, University Of Ottawa, University Of Sussex, And The Institute For Development Economics (Tokyo).


TARA Akshar+ Is An ICT-Based Program Which Imparts Functional Literacy In Hindi And Basic Arithmetic In Just 56 Days. It Functions Via Highly Comprehensive Software Developed Through Stages Of Intensive Grassroots Level Research And Study Of Best Practices Globally. Specially Designed Classes Are Conducted By Locally Trained Instructors In The Learners’ Own Communities, The Learners Are Taught To Instantly Recognize The Sound Of Letters, Syllables, Numbers And Form Words And Sentences Using The ‘Memory Hook’ Technique Embedded In Animated Movies And Exercises.

Gyan Chaupali Runs For 6 Months Post TARA Akshar+. It Aims To Impart Comprehensive Information, General Knowledge And Strengthen The Literacy Base Of Learners. It Compiles A Plethora Of Components Into An All-Inclusive Package To Weave In The Application Part Of Literacy To Their Lives. Apart From Reading And Writing Practice, Other Forms Of Eduainment And Informative Sessions Are Also Held.

TARA Akshar+ Program Has Been Running In Eight States In India For Over A Decade. Through This Initiative, Over Two Lakh Women Have Been Made Functionally Literate.

The TA Target Population Is Adult Women Members In Hindi-Speaking States. TA Typically Attracts A Large Number Of Females From The Scheduled Castes And Tribes. Since Its Start In 2006, TA Has Made 60,000 Such Women Literate In The Indian States Of Bihar, Jharkhand, Utter Pradesh, Madhya Pradesh, Haryana, Rajasthan, Uttararakhand And Delhi.

By Improving Literacy And Numeracy, TA Aims To Improve Child Health And Educational Outcomes, Local Governance, Livelihoods And Gender Equality. We Evaluated The Impact Of TA On The
Lives Of Women And Their Families Through Two Randomized Control Trials (RCTs) Over A Span Of Two Years (2013-15).

Procedure Of Initiative At Grass Root Level : The Sample
The Sample Was Selected (Randomly) From Illiterate Women Interested In Taking Up The TA Program. As Illiterates Are Sprinkled Across Households, With Most Households Having Both Literates As Well As Illiterates, This Implied An Individual Level Sampling Process, With, In Some Case, More Than One Woman Per Household Selected. Then The Group Proceeded To Divide The Sample Into A Treatment And A Control Group: Members Of The Treatment Group Were Invited To Participate In The TA Program Right Away, While Members Of The Control Group Were Invited At A Later Date. TA Was Unable To Implement A 50/50 Division Of Treatment/Control Due To Program Limitations: The Number Of Learners Per Class Are Fixed.

The Group Worked With Two Samples In The Analysis, Corresponding To The Two RCTs. The First Sample Was Selected In September 2013 And Consisted Of 238 Women In 6 Villages In Bhadoli District In Uttar Pradesh. We Refer To This Sample, And Subsequent Analysis As Phase I (Or Pilot). This Pilot Was Conducted In Villages In Which TA Had Been Operational For Several Months Already Before The Baseline Survey Took Place. The Second Sample Was Selected In May 2014 And Consisted Of 1061 Women In 12 Villages In Bhadoli District In Uttar Pradesh. We Refer To This Sample, And Subsequent Analysis As Phase II.Phase II Took Place In Villages Where TA Had Not Yet Been Set Up. In Both Samples, The Villages Were Selected By Our Partner, Development Alternatives.

Randomization Process

Instruments And Data:
An Overview Of The Various Data Instruments Collected In Each One Of The Surveys. Description Of The Instruments
- Household Questionnaire: Including Modules On Household Composition, Wealth, Production And Consumption.
- Verbal Numeracy Test: This Test Includes Applied Addition And Subtraction Question Which Are Verbally Asked And Answered.
- Forward Digit Span (FDS): The Subject Is Asked To Recall The Digits Administered By The Enumerator. In Every Consecutive Attempt, The Number Of Digits Is Increased By One.
- Rapid Automated Naming (RAN) With Colors: The Subject Is Asked To Identify Primary Colors In A Random Matrix Arrangement.
- Wechsler Non-Verbal Aptitude: The Subject Is Shown Short Sequences Of Geometric Figures And Asked To Choose, Among 4 Proposed Responses, The Figure That Would Complete The Sequence.
- Risk Aversion: Through A Series Of Low-Stake Incentivized Binary Choices Between A Sure Amount And A Gamble, We Check For Consistency In Risk Preferences And Obtain A Measure Of Risk Aversion. In Phase II, This Game Is Extended To Include Both A Ordered Set Of Choices As Well As A Set Of Choices Out Of Order.
o Preference Consistency: Through A Series Of 7 By 9 Choices Between Boxes Of Biscuits, We Test Whether The Subject Choices Are Compatible With The Generalized Axiom Of Revealed Preference, And If Relevant, The Degree Of Deviation.

o Knowledge And Confidence: Through A Series Of (Incentivized) Factual Knowledge Questions, We Test Whether The TA Program Increased Knowledge Of Health And Educational Matters. In An Extension Of The Game, We Allow The Subject To "Purchase" The Answers Of Another Subjects And Using These Alternative Answers To Revise Their Own Answer. Using These Data, We Obtain A Measure Of "Confidence" And Are Able To Draw Inferences Regarding Updating Of Beliefs.

o Household Efficiency: We Test For Household Efficiency Through An Investment Game. We Provide Each Member Of The Household With A Randomly Determined Amount Of Cash And Ask Them To Divide This Amount Between: (I) Cash Kept For Themselves, And (ii) Cash Returned To A Common (Household) Pool. The Amount Invested In The Latter Is Multiplied By A Factor Larger Than 1 But Smaller Than The Number Of Participants. The Decision Is Made In Private. This Game Is Repeated With Different Sets Of Household Members.

o Household Bargaining: The Bargaining Game Was Played To Measure The Woman’S Bargaining Power. In This Game, The Women And Their Spouses Were Asked To Split Rs.30 Between Water Tablets And Rice Independently And Subsequently Were Asked To Negotiate And Arrive At A Joint Decision. The Individual Split Would Give Us An Idea Of Their Individual Preference For Both Goods. We Then Measure The Bargaining Power Of The Women From The Variation Between The Joint Decision And Their Independent Decision.

Table 1: Overview Of Data Collection Instruments

<table>
<thead>
<tr>
<th>Module QUESTIONNAIRE</th>
<th>Phase 1 Baseline</th>
<th>Phase 1 Endline</th>
<th>Phase 2 Base</th>
<th>Phase 2 Mid</th>
<th>Phase 2 End</th>
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<tbody>
<tr>
<td>Household Questionnaire</td>
<td>Yes</td>
<td>Yes Limited</td>
<td>Yes Extended</td>
<td>No</td>
<td>Yes - Updated</td>
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<tr>
<td>Woman Questionnaire</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Village Questionnaire</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>School Questionnaire</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<td>TESTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Literacy And Numeracy Test</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Verbal Numeracy Test</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Cognitive Ability Tests</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Literacy, Numeracy And RAN Tests For Children</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Literacy, Numeracy And RAN Tests For Other Household Members</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>GAMES</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Risk Aversion Game</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Preference Consistency Game</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>Knowledge And Confidence Game</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Household Efficiency Game</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Household Bargaining Game</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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The Geographical Reach Of The Program Is As Follows:
Geographical Reach
- Delhi
- Haryana
- Rajasthan
- Madhya Pradesh
- Uttarakhand
- Uttar Pradesh
- Bihar
- Jharkhand

Result Of Impact Of Program Till May, 2017.

<table>
<thead>
<tr>
<th>#</th>
<th>State</th>
<th>Enrolled</th>
<th>Dropouts</th>
<th>Appeared</th>
<th>Unsuccessful</th>
<th>Successful</th>
<th>Overall(%)</th>
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<tbody>
<tr>
<td>1</td>
<td>Bihar</td>
<td>16250</td>
<td>525</td>
<td>15725</td>
<td>305</td>
<td>15420</td>
<td>95%</td>
</tr>
<tr>
<td>2</td>
<td>Madhya Pradesh</td>
<td>19314</td>
<td>143</td>
<td>19171</td>
<td>211</td>
<td>18960</td>
<td>98%</td>
</tr>
<tr>
<td>3</td>
<td>Uttar Pradesh</td>
<td>157281</td>
<td>1071</td>
<td>156210</td>
<td>7883</td>
<td>148327</td>
<td>94%</td>
</tr>
<tr>
<td>4</td>
<td>Haryana</td>
<td>2154</td>
<td>52</td>
<td>2102</td>
<td>74</td>
<td>2028</td>
<td>94%</td>
</tr>
<tr>
<td>5</td>
<td>Jharkhand</td>
<td>8690</td>
<td>57</td>
<td>8633</td>
<td>85</td>
<td>8548</td>
<td>98%</td>
</tr>
<tr>
<td>6</td>
<td>Rajasthan</td>
<td>1183</td>
<td>4</td>
<td>1179</td>
<td>26</td>
<td>1153</td>
<td>95%</td>
</tr>
<tr>
<td>7</td>
<td>Uttarakhand</td>
<td>70</td>
<td>-</td>
<td>70</td>
<td>-</td>
<td>70</td>
<td>100%</td>
</tr>
<tr>
<td>8</td>
<td>Delhi &amp; NCR Region</td>
<td>908</td>
<td>19</td>
<td>889</td>
<td>53</td>
<td>836</td>
<td>93%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>205850</td>
<td>1871</td>
<td>203979</td>
<td>8637</td>
<td>195342</td>
<td>95%</td>
</tr>
</tbody>
</table>
Partners Of The Group: Who Help Sponsor Number Of Learners Are:

- The Linde Group
- CII – Configuration Of Indian Industries
- CONNECT For CHANGE
- IKEA Foundation
- The Hans Foundation
- OXFAM India
- Seva Mandir
- Sakshar Bharat
- Noida Power Company Limited
- National Brain Research Centre
- READ India – Inspiring Rural Prosperity
- Poorest Areas Civil Society (PACS) Program 2001-2008 – Sponsored By DFID (Department For International Development)
- SUZLON Foundation
- TCF – Tele Centre Foundation
- UNICEF – Unite For Children
- TARA Haat – Helping People Help Themselves
- TARA

Case Studies: Impact At Grass Root Level Across Villages.

Sevanti Bai Niwali, District Barwani, MP Village Jamanya, Niwali, District Barwani, MP

This is 35 Years Old Sevanti Bai Who Is The Sarpanch (Head Of A Panchayat, Known As Local Government Council) Of Jamanya Village In Niwali Block Of Barwani District In Madhya Pradesh In Central India. She Was An Illiterate. She Learned To Read And Write In 35 Days On TARA Akshar Course. Now She Feels Proud Of Herself And Confident In Running The Complete Administration Of The Village.

Harbati Gujar, Village Sakipur, Bisrakh, District Gautam Budh Nagar, UP

Harbati Gujar Is The Former Pradhan Of Sunpura Gram Panchayat. Her Tenure Was From 2005 To 2010. 50 Years Old Harbati Was Illiterate. She Feels If She Was Literate, She Could Have Performed Her Duties As A Sarpanch Much Better. In September 2012, When Noida Power Company Limited (NPCL) Brought TARA Akshar Programme To Her Village, Harbati Immediately Enrolled Herself In The Program With The Desire To Become Literate. Highly Motivated Harbati, With Dedication And Hard Work, Passed The Examination Held In November 2012. The Ability To Read And Write Has Brought A New Confidence In Her And She Is An Inspiration To Other Women Of Her Village.

Angoori Devi, Village Geejgarh, Sikray, District Dausa, Rajasthan

As The Former Sarpanch Of Her Village’s Panchayat (The Head Of Local Government Counsel), Angoori Devi, Age 45 Of Geejgarh Village In Dausa District, Always Felt Regretful Because She Was Not Able To Fully Perform Her Duties As A Sarpanch Due To Her Illiteracy. In The Summer Of 2012, However, Angoori Devi Enrolled Herself In The TARA Akshar+ Literacy Program Supported By READ India In Her Village. After Just 49 Days, She Was Able To Read And Write Hindi And Could Do Simple Arithmetic Through The Program. Now That Angoori Devi Is Able To Read And Write, She Has Become A Highly Active Member Of Her Village’s Library Management Committee And Feels Proud And Confident In Her New Abilities That Are Contributing To The Welfare Of Her Village’s Library.

Mamta Devi, Village Geejgarh, Sikray, District Dausa, Rajasthan

Mamta Devi Was Married Off At The Age Of 8. Due To Her Shyness And Apprehension, She Never Attended School, Yet She Always Felt Very Deprived When Seeing Other Girls Of Her Age Attending School. At Age 16, She Took Steps To Address Her Lack Of Education And Enrolled In The Newly Established TARA Akshar+ Program In Her Village Of Geejgarh. Her Instructors Noted Her Tremendous Will To Study And Rapid Advancement Relative To Other Students. She Passed Her Exam In August 2012 And Was Declared Literate, Which Has Significantly Improved Mamta Devi’s Self Image And Given Her The Opportunity Of Lifelong Learning.
Kailasi Devi, Village Geejgarh, Sikray, District Dausa, Rajasthan

Kailasi Devi Is 18 Years Old And Has Been Physically Challenged Ever Since Her Foot Was Affected By Polio As A Child. Her Physical Disability Caused Her To Be Mentally Disturbed As A Child And Made Her Unconfident In Her Abilities. Even With These Obstacles, Kailasi Devi Completes All Of The Household Work Herself. Upon Hearing About The New TARA Akshar+ Program In Her Village, She Decided To Enroll Because She Believed That Literacy Would Give Her A New Lease On Life. After Only 49 Days, Kailasi Devi Passed Her Exam And Is Now Capable Of Reading And Writing In Hindi. Becoming Literature Has Helped Her Become Much More Confident In Herself And Kailasi Devi Is Extremely Excited To Be A Literate Woman.

Chameli Devi, Village Banepura, Sikray, District Dausa, Rajasthan

As The Wife Of A Farmer And Mother Of Two Sons And Two Daughters, Chameli Devi Has Been Actively Engaged In Her Community Through Involvement In The Anganvadi, Even Though She Previously Did Not Know How To Read And Write. She Was Selected As An Anganvadi Sahayaka To Look After The Anganvadi Even Though She Was Illiterate Due To A Lack Of Literate Women In Her Village. The Inability To Read And Write, However, Was A Significant Hindrance To Chameli Devi In Accomplishing Her Responsibilities As Anganvadi Sahayaka Which Included Giving Informal Education To Children And Spreading Health And Cleanliness Awareness. To Help Her Meet Her Responsibilities, Chameli Devi Enrolled In And Completed The TARA Akshar+ Program Established In Her Village Banepura. Now As A Literate Woman, Chameli Devi Is Endeavoring To Improve The Function Of The Anganvadi In Her Village.

Ramtri Bai Jatav, Village Moravan, Karahal, District Sheopur, MP

At Age 32, Ramtri Bai Is An Elected Panch, Or Member Of Her Village Government Council Known As A Gram Panchayat. Until Recently, However, Ramtri Was Unable To Read Or Write. Her Illiteracy Used To Hamper Her Functioning As Part Of The Village Leadership, And Ramtri Thought That She Would No Longer Be Able To Participate In Political Work At All Once She Found Out That The State Government Of Madhya Pradesh Decreed Literacy As A Pre-Requisite For Being A Panchayat Member. She Saw The Opening Of A TARA Akshar Centre Under Saakshar Bharat Mission In Her Vicinity As A Once-In-A Lifetime Chance To Retain Her Job As A Panch. Now, Ramtri Can Read And Write In Hindi, And She Is Working Hard To Improve The Level Of Governance In Her Hometown.

Vajanti Gujjar, Village Moravan, Karahal, District Sheopur, MP

Vajanti Gujjar Is 40 Years Old. She Lives In A Village With Her Husband, Who Works As A Laborer, And Their Four Children: Two Sons And Two Daughters. In Addition To Taking Care Of Her Home, Vajanti I Has Another Job: That Of An Anganvadi Karyakarta. The Government Of India Pays Her A Small Fee To Raise Awareness About Health And Cleanliness Among Women And Children. For Vajanti, Illiteracy Was A Major Roadblock To Helping Others Learn About Health. Fortunately, Thanks To TARA Akshar Under Saakshar Bharat Mission, Vajanti Gujjar Has Learned To Read And Write In Just 45 Days, And Her Confidence Level Has Increased Tremendously As A Result. She Is Thrilled With Her New Image As A Literate Woman, And Is A Very Valuable Asset To Her Community.

II. Conclusion:

- TARA Akshar Plus (+) Is An Innovative Computer Based Functional Literacy Programme That Trains Rural Women To Read And Write In Hindi, And Carry Out Basic Mathematical Calculations.
- The Instructor Uses Software, Flash Cards And Playing Cards To Train The Students In Just 49 Days Through 2 Hour Classes Every Day. Students Alternate Between Reading And Writing Lessons.
- The Software Application Uses A Unique Visual Memory Technique That Links Every Letter Of The Hindi Alphabet To An Object That The Female Students Use In Their Daily Lives. (Eg. G For Gajar Or Carrot And T For Tamatar Or Tomato) This Linkage Helps Rural Women To Learn The Alphabets Quickly Without Forgetting What They Have Learned Later On.
- The Program Helps The Ladies In Gaining Literacy, Knowledge, Confidence And Empowerment In Every Way.
- In Addition To Stepping Out Of The Four Walls Of Their Homes, The Women Learn To Interact With Outside Society And The World At Large, Understanding The Importance Of Education, Hygiene, Medication And Current Affairs.
With Wider Reach, Programs Such As TARA Akshar+ Will Create A Lifeline Of Education For Rural Women Who In Turn Would Be Able To Incorporate The Learning In Their Children And Family Bringing About A Change In The Next Generation.

Reference:


[5]. Note: Governance Knowledge Centre Promoted By Department Of Administrative Reforms And Public Grievances Ministry Of Personnel, Public Grievances And Pensions, Government Of India