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## Health Education in China's Factories: A Case of Embedded Education

Siwen Zhang, Hua Chen, Songyu Zhu, Jorrit de Jong, and Guy Stuart

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**CONTENTS**

Acknowledgments.....1  
Summary.....1  
Background.....2  
Case.....3  
    Project Origins and Structure.....4  
    Design Elements.....7  
        Existing Relationships.....7  
        Embedded Education Practice.....8  
        Summary.....14  
    Impact.....14  
Discussion.....16  
    Stakeholder Analysis.....16  
    Governance Challenges.....17  
    Operational Challenges.....18  
Appendix.....21  
    Method.....21  
    Data Sources.....22  
    Training Activity Example.....23  
Notes.....25

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## **SUMMARY**

Business for Social Responsibility (BSR), an international non-governmental organization (NGO), developed and implemented the HERproject with the intention of empowering women working in factories manufacturing goods commissioned and sold by international brands. One component of the HERproject was workplace-based health and financial education. This case study focuses on HERhealth, the health education program within the HERproject as it was implemented in China from 2007 onwards. Based on reports supplied by BSR this case study documents the health education and its effects on the behavior of women who received the education in terms of improved reproductive health, personal hygiene, and safe sex practices.

This case begins by providing background information on the state of health knowledge and health care provision in China, especially as it related to women at the time of the case. It then provides details on how the health education was provided and its impact. The paper concludes with a discussion of the governance and operational challenges BSR and its partners faced.

## BACKGROUND

The World Bank estimates that as of 2014, total employment in China was 806 million people, and women comprised 43.9% of the workforce.<sup>1</sup> Despite having one of the world's largest economies, China spent relatively little on healthcare.<sup>2</sup> In urban centers, women generally had various channels to learn about health issues and tended to seek medical attention for preventative purposes, but women in rural areas had far more limited health education and access. Often, they did not seek information and treatment until they were faced with serious illness, which could leave them unable to afford the necessary care.<sup>3</sup> Without health education in the factories, migrant women workers were less likely to seek professional help when in need; without health insurance coverage in factories, they had little access to basic health information to attend to their own and their families' wellbeing.

In 2005, in the wake of SARS and avian flu pandemics, many organizations began to turn their attention to health education for the general public. Among them was Business for Social Responsibility (BSR), a global nonprofit that comprised more than 250 member companies with the goal of building a just and sustainable world, which established its China branch in 2005. Against this backdrop, BSR began delivering health education to migrant women working in factories. Interviews with managers, female factory workers, and health clinic staff in the supplier factories, together with data collected from the Chinese Ministry of Health, showed that the major health concerns of the female factory workers were: hepatitis B, pelvic inflammatory disease (PID), breast cancer, cancer of the cervix, and family planning and reproductive health education. The women also raised concerns about childcare for working mothers.

Chinese laws and regulations provided the following benefits to women workers:<sup>4</sup>

- Female workers were entitled to no less than 98 days paid maternity leave
- Pregnant workers should not work in hazardous positions
- Workers who were over seven months pregnant were not allowed to work overtime or night shifts.
- Paid absences for prenatal exams

- Nursing mothers and women workers with children under 12 months were prohibited from performing hazardous work or work overtime or during the night shift.

BSR's research revealed that though working conditions and regulations that protect women workers had improved in preceding years, and workers' health contributed greatly to the success and sustainability of businesses, employers had yet to promote health proactively in the workplace. Further, stereotypical perceptions of women as caretakers and focus on women's domestic roles drove women into and kept them in lower paying and traditionally female jobs. This reduced work and promotional opportunities for women workers.<sup>5</sup>

According to a 2006 BSR report, more than 80% of workers in developing countries' apparel, footwear, and toy factories were women.<sup>6</sup> In the 30 years preceding the implementation of the HERproject, there had been a dramatic increase in female employment in China, with the highest concentration in the ready-made garment (RMG) and electronics sectors.<sup>7</sup> In 2009, the National Bureau of Statistics of China reported that women represented about 60% of workers who had migrated from rural areas to cities to work in factories.<sup>8</sup>

Many of China's female migrant workers had received little or only basic education. Depending on the industry in which they worked, these women engaged in repetitive tasks (e.g., sewing, packaging) that were boring and limited interactions with others.<sup>9</sup> These environments generally did not offer access to information about reproductive health and other health concerns.

## **CASE**

In 2006, BSR received funding from the David and Lucile Packard Foundation to examine critical needs at workplaces within the supply chains of BSR member companies. In the early stages of HERproject the focus was on the reproductive health of young women who relocated from villages to heavily industrialized areas during the manufacturing boom in Asia and Latin America.<sup>10</sup> The research findings suggested that young women in the factories had limited knowledge about their health, particularly

reproductive health issues. While there were NGOs and community-based organizations (CBOs) working on this issue, they had very limited access to the workers due to the high level of control employers exercised over their workers and their work hours, as well as widespread suspicion of CBOs by factory management. As a trusted organization with close ties to the business community, BSR was particularly well positioned to facilitate NGO access to the workers during the working day to provide health education.<sup>11</sup> BSR identified China, a manufacturing center for many multinational brands, as one of the early sites for pilot studies. The HERproject, which delivered health (HERhealth) and financial (HERfinance) education to women working in factories supplying BSR member brands in China, grew out of these pilot studies.

### *Project Origins and Structure*

BSR conducted interviews and focus groups in factories in China to understand the conditions there. This research identified basic health education in reproductive health, nutrition, and general health and hygiene as the most critical need. Women workers worked long hours, while continuing to carry primary responsibility for caring for others (i.e., children, husbands, elderly parents) at the expense of their own wellbeing.

BSR thought that in meeting the need for basic health information, it could simultaneously improve the personal wellbeing of the women and achieve a “bottom-line impact” by decreasing absenteeism and other health-related effects on worker productivity. The HERhealth program aimed to accomplish these goals by using the workplace itself to teach women take care of themselves.

.....  
**FIGURE 1: WOMEN ON THE PRODUCTION LINE**



BSR's global office hired local CBOs to develop a curriculum in the pilot phase, utilizing existing resources developed by international NGOs such as Marie Stopes International China and Better Work,<sup>12</sup> as well as best practices and activities drawn from organizations with adult workplace training expertise. It then piloted this curriculum in four factories across China in 2007 and 2008. This pilot helped fine-tune the curriculum and confirmed the need to increase women's health awareness and access to health services through sustainable workplace programs.

The HERproject workplace programs (both HERhealth and HERfinance) used a three-prong approach consisting of peer education training, improving workplaces for women, and linking women to services and products. Peer education training leveraged the trust women workers had with each other to increase knowledge and improve behavior throughout the entire workforce. Making workplaces better meant distributing and enhancing human resources and employee social services to respond to the unique needs of women in the workplace. Linking women to services and products leveraged the workplace as an access point to increase the availability and uptake of critical services and products for women.<sup>13</sup>

HERhealth began slowly. As BSR is a membership organization, it promoted the HERproject at meetings by sharing pilot program results with member companies. In addition to the potential health and efficiency benefits, BSR hoped the program might improve relationships between management and workers in the factories. The initial messaging to BSR's member companies varied, but included information about the program's benefits to the workforce, the return on investment from improved employee productivity, and employers' responsibility for making their workplaces better. At the time of the writing of this case, companies that already knew about the project often initiated contacts with BSR. From the launch the program in 2007 to 2015, BSR trained thousands of peer educators working in the supplier factories of many Fortune 500 companies operating in China.

Member companies, if interested in the HERproject, would make requests to BSR's Global Team, which was responsible for connecting member companies with BSR programs. Based on information provided by the team, the member would decide then whether it wanted to participate and gauge interest among its key suppliers. Member companies usually paid for the program as an educational investment, which



increased the likelihood that the supplier factories would react positively towards participation. BSR noted that factories often appreciated the involvement in the program because it signaled that the member company had a long-term interest in working with them.<sup>14</sup> Once the member had identified the factories interested in hosting the HER-project, BSR's local team contacted the factories directly to set up the program. The local team would also help facilitate negotiations between the member companies and factories when production time was pressed.<sup>15</sup>

It is worth noting that globally, it was typical for BSR to contract with "implementation partners,"<sup>16</sup> often nonprofit CBOs or medical colleges to conduct the training. These organizations, which specialized in training adults, often lacked knowledge on how to conduct training in a factory setting. In 2010, after a standardized curriculum was established, BSR began to conduct a week-long orientation training for partners.<sup>17</sup> The training covered:

- best practices and methodologies in workplace-based training;
- typical challenges in training at workplaces (such as a factory);
- ways to build relationships with factory management;
- useful resources for health information;
- viewing the factory as a training ground;
- how to build training work plans that prioritize factory production.

Overall, the training emphasized operational effectiveness in consideration of both the educational goals and the priorities of the factories. Tensions between the two need to be strategically addressed and negotiated, especially when production time is pressed. One of our respondents said:

This kind of training is very different . . . [W]orking in a garment factory, where the margin is 4–5%, and every minute someone comes off the production line is lost production revenue, and even when you have senior management's commitment to the program, it's the production managers that decide if someone can be taken off the production line. These are unique challenges of doing training at a workplace . . .<sup>18</sup>

In China, due to local regulations, BSR hired trainers as its employees (BSR trainers), rather than using implementation partners.<sup>19</sup> While the nature of employment varied, the job itself was similar to that of trainers in other parts of the world. Once in factories, BSR trainers worked with both supplier factories and member companies to negotiate the training time for workers.

### *Design Elements*

Embedded education occurs within existing relations between an organization or network, on one hand, and individuals who interact with it regularly, whether as customers, constituents, members, employees, or some other category of individual, on the other. These individuals constitute a particular set of learners, who are themselves members of a particular community.

As a result, an embedded education program pays attention to two sets of design elements: those related to the host organization or network in which the education will be embedded; and those related to the education practice itself. There are multiple individual elements within these two sets of elements.

### EXISTING RELATIONSHIPS

In the HERhealth program, the host organizations were BSR member companies' supplier factories. There were a number of specific encounters between the employees and educators (both BSR trainers and the peer educators) both within and outside the workplace. The first encounter between the employees and the factory was the new employee orientation, which included safety training and factory policy trainings. Some factories allowed health education posters on the walls and distribution of handouts on the factory floor. In most cases, BSR negotiated with the factory to set aside some production time and also worker breaks for peer educators to conduct trainings on health information and access to health services. Outside of work, the workers lived in close communities and ate in dining halls, and peer educators used their personal connections with peers as a way to have conversations around reproductive health. Similar interests, backgrounds, experiences, and community helped build trust, and contributed to the ease and comfort of such conversations.

EMBEDDED EDUCATION PRACTICE

*Content, Learning Objectives, and Anticipated Change*

According to the HERproject web site, its theory of change as of 2016 was the following:

We believe all work should be empowering, and should enable women and men to improve their well-being and increase their standard of living. We believe that employing women in the formal sector is vital to achieving gender equality within prosperous economies. We believe that jobs in global supply chains offer disproportionate opportunities to empower women and improve living conditions for the wider society.

HERproject empowers women working in global supply chains through workplace-based programs, capacity building of local civil society, and advocacy with business and government.<sup>20</sup>












HERproject's embedded education practice was delivered through its workplace-based empowerment programs.

FIGURE 2: HERPROJECT'S THEORY OF CHANGE



To achieve the change it hoped for, BSR used a structured curriculum with five established modules that broke topics into various learning sessions, each of which included specific learning objectives and tools. For example, the “women’s health” module included 5 sub-topics: women’s bodies and menstruation, family planning, maternal health, reproductive cancers, and STI prevention. Each module included: a training guide, health manual, training materials, post-training quiz, and links to external resources. These training modules are designed for both new and experienced trainers.

**Table 1: Herproject Modules**

<b>Introductory Module</b>		<b>Women’s Health</b>	
Our Health is Important		Your Body and Menstruation	
<b>Nutrition and Well-Being</b>		Family Planning	
Eating Healthy		Maternal Health	
<b>Hygiene and Infectious Diseases</b>		Reproductive Cancers	
Personal Hygiene		Preventing STIs	
Waterborne Diseases		<b>Serious Illness</b>	
		HIV/AIDS	
		Malaria & Dengue Fever	

*Pedagogy, Tools, and Activities*

BSR trainers used materials based on adult learning principles, designed to engage the peer educators, called “Health Ambassadors” in Chinese (HAs), in their learning. The HAs, in turn, made use of these materials to educate their peers, incorporating their own understandings and reflections to make the content more relevant and relatable. BSR trainers periodically updated the HAs on existing standardized teaching materials BSR had developed, and also often adapted the existing materials in response to feedback from the HAs. When HAs took particular interest in a topic, trainers would go into greater depth and frequently refer back to the topic throughout the course. Trainers also jettisoned topics that HAs found irrelevant. By this process, training materials were continuously updated in response to workers’ feedback.<sup>21</sup>

In addition to materials provided by BSR, HAs were encouraged to seek and make use of other available public resources: brochures and booklets from the family planning bureau and China’s Center for Disease Control (China CDC); free condoms and free physicals from local clinics; and guest speakers who would come to the factories to speak to the women directly. Many valuable materials that were popular with HAs came from China CDC, which provided well-designed brochures on a wide range of topics, including psychological health and stress management, with accessible language and images.

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**FIGURE 3: TEACHING TOOLS**



Table 2 provides some examples of tools and activities that the HAs used in delivering this education (provided via BSR trainer).

<b>Topic</b>	<b>Game</b>	<b>Discussion</b>	<b>References</b>
Basic Reproductive Health	<p>1. “Taboo”</p> <p><b>Goal:</b> Ice-breaking; learning about reproductive systems</p> <p><b>Time:</b> 10 minutes</p> <p><b>Prop:</b> Index cards</p> <p><b>Steps:</b></p> <ul style="list-style-type: none"> <li>• Divide participants into 2 teams, each team selects a representative.</li> <li>• Trainer shows the representative different words, who will then explain to her teammates, according to her own understanding what the word means. The teams guess what the word is according to the explanations their representative gives.</li> <li>• Each correct answer gets 1 point, until all words have been explained.</li> <li>• The group that guessed more words correctly wins.</li> </ul> <p><b>Rules:</b></p> <ul style="list-style-type: none"> <li>• The representative cannot use words from the card. (e.g., when explaining “testicles,” one should not use the word itself).</li> <li>• Word bank includes: penis, testicles, vas deferens, bladder, semen, foreskin, vaginal, oviduct, uterus, ovary, eggs, breasts, etc.</li> </ul>	<p>2. Sex and reproductive health “lineup”</p> <p><b>Goal:</b> Understand sex and reproductive systems</p> <p><b>Time:</b> 20 minutes</p> <p><b>Prop:</b> Big index cards</p> <p><b>Steps:</b></p> <ul style="list-style-type: none"> <li>• The trainer reads statements about reproductive health, and participants would line up on a spectrum, according to their own understanding, under “True,” “False,” and “I don’t know.”</li> <li>• Every participant explains their choice.</li> <li>• Trainer gives the correct answer and elaborates.</li> </ul> <p><b>Statement bank examples to debunk:</b></p> <ul style="list-style-type: none"> <li>• Women should not exercise during menstrual periods.</li> <li>• Using menstrual pads outside of women’s periods is healthy.</li> <li>• It is better for women to use feminine hygiene wash in their routine cleansing.</li> <li>• A woman is not a virgin if she did not bleed during her first sexual encounter.</li> <li>• It is bad for men’s fertility to put their laptops on their laps.</li> <li>• Men should not wear jeans too often.</li> <li>• The size of a man’s penis determines the man’s capability and fertility.</li> <li>• Male nocturnal emission is a disease that should be treated.</li> </ul>	<p>3. Video (Documentary) 《爱的奇迹》</p> <p><b><i>Miracle of Love: A Documentary on Human Reproduction</i></b></p>

*Educators and Training of Trainers*

Embedded education requires the training of non-educators to deliver the content and tools. This means developing a curriculum that appeals to the frontline personnel who will deliver the educational messages. BSR decided to use peers to deliver the health education curriculum because evidence from other programs suggested that it worked well in workplaces and helped maximize the reach of the program. Moreover, BSR believed that women in similar life circumstances would be more effective in providing health knowledge and self-care skills to other women than professional trainers from outside the factory or factory managers.

Once factories agreed to participate in the HERproject, BSR asked them to identify workers who would be ideal candidates to act as HAs, specifically those who were extroverted, kind, communicative, and had been long-term employees. In negotiating time set aside for HAs' training, BSR was careful to "schedule trainings to minimize disruption to daily, weekly, and monthly work schedules." To facilitate communication and information sharing along production lines, the preference was to recruit HAs from all the different production lines in the factory. BSR also advised the factories to appoint assistants to the HAs in case of their absence or departure. In cases where an assistant had not been appointed, someone from the human resources department of the factory provided backup. Factories typically identified 30–50 HAs to be trained, or roughly 10% of their women workers.<sup>22</sup>

BSR's trainers provided HAs about 24 hours of health training over the course of the program based on the specific health needs identified at the workplace. HAs then shared what they learned with their peers in their factory through formal and informal trainings both during and after working hours. BSR sought to maximize the impact of the health training by also teaching HAs communication and leadership skills.

FIGURE 4: TRAINING HAS ONSITE (WHAT IS HIV/AIDS?)





SUMMARY

The design elements of BSR’s HERhealth embedded education program are summarized in the table below:

<b>Table 3: Design Elements</b>	
<b>Element</b>	<b>Description</b>
<b>Existing Organization or Network</b>	
Host	Garment and electronics factories (suppliers of BSR member companies)
Encounter	Peer to peer on production line, during breaks
Target individuals	Female factory workers, especially migrant workers
Community	Families; migrant communities; communities back home
<b>Embedded Education Practice</b>	
Content	Women’s health information
Learning objectives	Improved knowledge and skills for better health
Anticipated change	Healthier living, reproductive health
Pedagogy	Narrative, peer to peer, standardized curriculum (global), reinforcement through continuous group discussion, multi-angle communication (receiving information from multiple peer trainers), situated settings approach/ learning; confronting competing priorities (value vs. behavior)
Tools	Presentations, physical artifacts (portable booklets, brochures, posters, etc.), activities (designed and trained by BSR trainers)
Activities	One-on-one conversations, role play, group meetings, games
Educator	First tier: BSR partners and professional trainers Second tier: trained peers (HAs)

**Impact**

BSR had a clearly identified logical framework for how the HERproject’s embedded education program would achieve its short-, medium-, and long-term outcomes. This framework is summarized in Table 4.

**Table 4: HERproject’s Logical Framework**

<b>Inputs</b>	<b>Activities</b>	<b>Outputs</b>	<b>Short-term Outcomes (knowledge change)</b>	<b>Medium-term outcomes (behavioral change)</b>	<b>Long-term outcomes (changes in well-being)</b>
<ul style="list-style-type: none"> <li>• Fee for service from member companies</li> <li>• BSR human resources</li> <li>• BSR standard curricula</li> <li>• Factory owner resource and time commitments</li> </ul>	<ul style="list-style-type: none"> <li>• Training of trainers (ToTs)</li> <li>• Peer-to-peer (P2P) training</li> </ul>	<ul style="list-style-type: none"> <li>• Number of ToTs</li> <li>• Number of women trained</li> <li>• Number of pre- and post-surveys conducted</li> </ul>	<ul style="list-style-type: none"> <li>• Women show an increased knowledge of HIV prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Women report increased use of condoms</li> <li>• Relationships between women workers and management/ and male workers improve</li> </ul>	<ul style="list-style-type: none"> <li>• HIV rates decline amongst women</li> <li>• Women live longer healthier lives</li> <li>• Women show agency over their lives</li> </ul>

Between 2007 and 2015, HERproject China reached into more than 80 factories in collaboration with 14 global companies, trained more than 2,000 HAs, and reached approximately 100,000 Chinese women workers. To enrich the curriculum, BSR collaborated with Marie Stopes International China as well as independent trainers. Most of the factories were located in The Pearl River Delta and Yangtze River Delta, but there were several in Qingdao, Northeast China and Chongqing, and Southwest China. The majority of HERproject’s activities were within the RMG and electronics industries, both of which had a large percentage of female workers.

In each factory participating in HERhealth, BSR conducted surveys before and after the 12-month training cycle. The surveys collected data on a number of indicators, including frequency of health check-ups; contraceptive use; and sharing of health information with coworkers, family members, and neighbors.

Data from a global survey of 30,000 HERhealth participants suggested improvements in knowledge of family planning and HIV transmission, use of health check-ups, condom use (from 54% to 86%), and personal hygiene practices. In addition, 92% of women workers reported sharing what they learned with others. On the business front, factories reported increased compliance with health and safety regulations, decreased absenteeism due to menstrual pains, and improvement in worker-management relationships.

## DISCUSSION

### *Stakeholder Analysis*

The HERproject harnessed collaborative efforts from multiple stakeholders including all the different links in the supply chain, customers, civil society organizations, and public officials at different levels of government.

BSR's mission was to work with business to create a "just and sustainable world . . . within the boundaries of the Earth's natural resources."<sup>23</sup> To accomplish its mission, BSR negotiated and maneuvered to create programs that benefited both employers and employees. As a new organization in China, BSR wished to assert its influence over global member companies, and was keen to establish its profile for businesses operating factories in China. As a result, it had a vested interest in the success of its HERhealth programs and also had a high degree of influence over the content and implementation of the programs.

Factory owners and line managers, whose primary interests were to maximize production while reducing costs, decrease employee turnover and absenteeism, maintain the presentation of factory both in terms of physical space and employee wellbeing, were stakeholders with a great deal of influence over the successful implementation of the program.

The workers themselves were stakeholders whose interests included their own employment, promotion, and well-being. They had relatively little *formal* power compared to their employers, but the success of the program relied on their willingness and ability to learn and act on what they learned.

BSR's member companies, often global brands, were concerned about their brand's profitability, popularity, sustainability, and ability to maintain positive relationships with suppliers as a form of risk management. Their customers were also stakeholders who had an interest in the quality and cost of the product, how the product was made, and how employees were treated in making the product.

Communities and families of the factory workers, especially the men in their lives, were stakeholders who felt indirect effects of the program. Their interests were not only in having the factory workers earn a stable income for the household, but also their own well-being.

Employer and/or industry associations were also stakeholders. They defined and reinforced industry standards and best practices to be enacted in factories. They were also important partners in making sure that BSR's work could be sustainable in the local contexts.

For the program to succeed, BSR had to align the varied interests of the key stakeholders at and across three different levels: the inter-organizational level; the intra-organizational level; and the end recipients. It needed to gain brand and factory cooperation to bring a HERhealth program into a factory. It then had to negotiate with middle- and line-managers to set aside the time and space for both the education of the HAs and the HAs to educate their peers. Finally, it had to engage the HAs and their peers through accessible and interactive health education materials to learn and act on what they learned.

### *Governance Challenges*

**Developing, testing and fine-tuning a theory of change.** There was limited data and opportunity to establish and investigate causal links between inputs, activities, outputs and outcomes. BSR measured impact through pre- and post-surveys, and 10% of the female workers were surveyed. Surveys were supplemented with one-on-one interviews with workers and peer educators in each factory. Due to the nature of worker mobility, migrant workers tended to migrate from region to region, making assessment work difficult.

**Developing and communicating the value proposition.** Typically, brands received the benefits of a "BSR" stamp but the factories did not. Factory owners in "survival mode" may have difficulty recognizing the benefit of added training that took away production time, unless it was required by the BSR member companies with the promise of a more lenient production timeline. To address this, in meetings with member companies, BSR promoted the benefits of HERproject and leveraged its relationship with the companies to encourage their participation in the program. Because of the key roles companies played in convincing factories to participate, BSR adopted a top-down strategy whereby they persuaded the brands first, then the factories, and then the line managers. Production line managers were sometimes unwilling, because they had to juggle production targets and the need to comply with the training request.

**Navigating national, provincial and local government priorities and concerns.** Working in the Chinese context, and the delicate policy context of NGOs and nonprofits defined by the Communist Party, BSR was careful in presenting itself as a provider of consulting services in China. With the realization that most, if not all, member companies had strong backing from the local government, BSR focused on basic knowledge building and skill development but it did not cover rights-based content.

**Institutionalizing the practice and making it sustainable.** BSR recommended that factories institutionalize both peer-to-peer training programs within the HERproject and establish women's committees to create opportunities for skill improvements and personal empowerment. While there was a sustainability plan at the end of the training cycle, there was no follow-up system for BSR to check with factories to see whether they continued the program. However, BSR did try to leverage the fact that the factories maintained contact with BSR member companies. BSR asked the factories to make commitments, and share them with member companies. They could then check with the brands regularly to see how the program was going, rather than interacting directly with the factory. BSR wanted to ensure that the program could "stand on its own" and that "local ownership" was accomplishable without the presence of BSR.

### *Operational Challenges*

**Finding space and time.** Connecting with target groups in their contexts was sometimes challenging. For example, in the factories, there was a specific need for time coordination given the cultural context: if the program started after the Chinese new year and finished before, there was a greater chance of retaining workers, but if the program started before the new year, many peer educators went home for the new year, and did not return to the factories. Because the HAs themselves were trained over a limited period of time, they often needed time and resources to seek out new information to help answer questions from their coworkers, and factories needed to make such opportunities and resources available to active HAs in order to help them grow.

One of our interviewees stated:

China is at a turning point, and factories need to adjust their strategies in response to higher material costs and labor costs, so they need to become more efficient in the age of automation. They need to see the need to equip the workers with soft skills and critical thinking skills and other technical skills to make them more competitive.<sup>24</sup>

**Retaining employees for peer education.** Despite the many advantages of HAs, factories still saw a fair amount of HA dropout. Over the course of the program, the factory turnover rate was about 30%. Often, factories would go back to BSR to ask for more training for the new peer educators, or factories would have the existing peer educators train the new peer educators. This presented a challenge to both BSR and the factories: if employee retention was a goal of the program, how could they explain and address the loss of HAs who were active participants?

**Creating trust, urgency, and incentives.** From our interviews, we learned that factory owners differed in their strategies regarding factory production and employee retention. The factories in “survival mode” did not have time—or were less willing to allocate time—for any form of training; their sole objective was to meet and surpass production goals. On the other hand, proactive factories, such as Foxcon and Jbill, were already thinking about providing more training to build worker capacities.<sup>25</sup> BSR had to think creatively about how to change the mindset of factories in survival mode to a more proactive mindset. They also created a new program to train peer educators in social skills (i.e., communication, presentation, and negotiation) that would help them build trusting rapport with their coworkers, making the training process run more smoothly.

**Negotiation with middle management.** This was a delicate process to manage. BSR leveraged its connection with the brands first to get the commitment from senior management in factories. The senior management team in the factories had to then create support down the line. Unless there were clear warning signs (e.g., no reports from factories, factories not engaged, not enough people showing up to the training, stalling, or otherwise wasting the brands' money), and everything has been tried, trainers tried to limit their use of senior leadership leverage and influence. BSR trainers engaged

primarily with middle management (line supervisors, HR, and welfare officers, etc.) to make sure that they fully understood that while BSR's ultimate goal was to achieve healthier, happier workplaces that would yield benefits to them in the long run in terms of productivity, BSR was going to respect the factory's need to meet production targets. Reflecting on such negotiations, trainers expressed the need to perhaps "sacrifice some of the potential impacts that one could have had," adding, "there needs to be a balance in terms of expectations and realistic management." For example, while it was perhaps more comfortable for workers to have a closed-door training without the managers, it was not possible to do so because of the involvement of middle management. "I mean, it is their factory."<sup>26</sup>

## APPENDIX

### *Method*

Our study uses a multiple-case replication design, within which we investigate our topic of interest through in-depth research and analysis of multiple cases. Robert Yin notes that the “distinctive need for case study research arises out of the desire to understand complex social phenomena.”<sup>27</sup> Embedded education is a complex phenomenon that includes multiple actors whose activities and frames of reference are shaped by both highly formal organizational systems and informal community norms. As such, we decided to use the case study method to ensure that we captured the rich complexity of the phenomenon. This is especially important because though there are many examples of embedded education from around the world, the research work we conducted was one of the first, if not the first, to explicitly focus on it as a phenomenon worthy of study in its own right.

We chose to study multiple cases to enable us to gather as much information about the phenomenon as possible. Using a literal replication strategy, we selected two cases in China, one in the U.S.A., and one in the Netherlands that we believed were exemplars of embedded education in that the programs were clearly embedded in an existing system and were explicitly focused on educating a group of learners.<sup>28</sup> For the Chinese cases, two researchers—both fluent in Mandarin and English—first identified a pool of 18 cases that fit the working definition of embedded education. Subsequently, a subset of the research team developed a coding framework to operationalize the variables of *embeddedness* and *educational* according to our theoretical understanding of those concepts, and for the evaluation of the existing 18 cases. Using this coding framework and after intensive discussions the team created a list of exemplary cases, from which contacts were made by the bilingual team members to verify the existence of the programs and the accuracy of the descriptions in the secondary literature on which the team had relied for its coding. Based on these contacts we were able to confirm two cases based in China that would serve as the “extreme” cases to further our inquiry.

To explore how innovations happen in service delivery, our design encompasses multiple units of analysis, including service encounters, individual participants,



communities, organizations, and inter-organizational relationships. For service *encounters*, we are concerned with the important variables to consider in designing a meaningful educational encounter as well as the challenges in doing so. For individual *participants*, we seek to identify evidence to show changes in knowledge, behavior, and overall wellbeing amongst the participants, with special attention paid to whether the design is concerned with the acquisition of critical thinking skills and personal empowerment. In a similar way, our focus on *communities* calls for attention to whether there is any demonstrated impact on the communities in which the participants live and work, and how effects are transmitted from individual to community. Our focus on *organizations* looks at their motivations for getting involved in the projects, and whether there is any evidence that embedded education has a positive impact on the operations of the host organization(s). Finally, our focus on inter-organizational relationships begins with an understanding that embedded education demands the (disruptive) integration of the intervention/program into the existing operations of a host organization. With this in mind, our focus is on the challenges of making such integration work, especially given that there are normally multiple organizations involved. More generally, we expect the research to yield insights into cross-sector collaboration and identify whether embedded education creates the opportunity for the integration of other social interventions into the operations of existing delivery systems.

Our data collection relies heavily on information from individual interviewees at the organizations, but it also taps into a number of other data sources including public records, published reports, media materials, internal reports, and standardized curriculums for triangulation.

### ***Data Sources***

This paper draws from two sets of sources. The primary sources were interviews with key personnel in BSR offices in China and New York. The secondary sources were reports and other publications and materials we collected in the field from research participants and online.

### *Training Activity Example*

From the session “Preventing STIs” (BSR Curriculum)

#### **1. Prepare for the training**

Familiarize yourself with the agenda of the training. The one-hour training agenda below provides guidance about how much time you should spend on each section of the training.

#### **2. Understand the key messages**

Before starting the training, it is important to understand the key lessons to be emphasized during the training.

Gather materials. The materials listed below will be used during the preventing STIs training:

1. Optional: print the preventing STIs storytelling activity.
2. Translate the “Steps for proper condom use” handout into the local language, and print enough copies to give one to each participant.

#### **3. Give a general background introduction to the topics**

#### **4. Training activities**

- Storytelling activity: set up the activity in small and large groups.
- Proper condom use: during this activity, participants will become familiar with the proper way to use a condom. It is important that participants feel comfortable touching and trying the condom.

(This activity is also included in the Serious Illnesses: HIV/AIDS module. If the participants have already completed the exercise, the trainer can review with them the six steps of proper condom use.)

- Water balloon activity

Introduction: “Now that we have learned about Aditi’s story, it is important to learn how we can protect ourselves. Today we are going to learn how to use a condom. To start learning about condoms, we are going to first see how strong and stretchy condoms are.”

Take a condom and fill it with water. Show that the condom does not break.

Discuss how well the condom holds the water. Explain to participants that just as the condom holds water, the condom can hold sperm and protect against the transmission of fluids from one person to another during sex. Explain that the condom will stretch to fit the size of any penis.

- Help participants become comfortable with condoms. Ensure that all participants have two condoms in front of them. Begin by encouraging participants to familiarize themselves with the condom.

Introduction: "If this is the first time that you have seen a condom, you may be a little shy touching it. Let's start by learning how to check the condom packaging to make sure the condom is safe to use. Check the expiration date on the condom package, and look for signs of wear such as discolored, torn, or brittle wrappers. Do not use condoms that have passed the expiration date or seem old. Tear the package carefully along one side. It is better not to use teeth or fingernails to avoid damaging the condom."

Ask: "Before learning how to use the condom properly, we are first just going to sensitize ourselves to it. Touch the condom. What does it feel like? Why do you think it feels like this? How could this be helpful during intercourse?"

Stretch out the condom. Give participants five minutes to simply play with the condom. This will help participants to become comfortable with them.

- Demonstrate and practice how to use a condom. Ensure that all participants have one unopened condom in front of them. Also ensure that participants have a cucumber or banana in front of them that they can practice putting a condom on. Introduction: "Now we will practice how to use a condom. I will show you, and we will all try together."

The trainer places the rolled-up condom on the top of the banana or cucumber and pinches the tip of the condom (to leave space for the semen to collect). Then explain:

"Place the condom on the end of the penis, and unroll the condom down the length of the penis by pushing down on the round rim of the condom. If this is difficult, the condom is probably inside out. You should not turn the condom

the other way around since some semen could already be on it. You should open another condom and unroll it correctly over the penis. When the rim of the condom is at the base of the penis (near the pubic hair), penetration can begin. After intercourse and ejaculation, hold the rim of the condom and pull the penis out before it gets soft. Remove the condom and tie it in a knot, sealing in the semen. Dispose of the condom in a safe place. Use a new condom each time you have penetrative sex.”

Have the participants practice, and provide instruction to participants as they do so. Provide encouragement whenever possible.

- Close the training: ask the group a series of questions to help them summarize and reflect on the knowledge they have learned. Provide participants with information on where they can get services. Ask participants a series of questions to review their knowledge. Questions can include, but are not limited to: What are some of the symptoms of STIs? Who can get an STI?

## NOTES

1. <http://data.worldbank.org/indicator/SL.TLF.TOTL.IN?end=2014&start=2012>.
2. Total health spending was 5.4 percent of total GDP in 2012, meaning that China spent about \$770 per person on health on a purchasing power parity basis. In comparison, health spending in the European Union countries was 10.1 percent of GDP, equivalent to about \$3,800 per person on health on a purchasing power parity basis. Only fifty-six percent of health spending in China was funded by public sources in 2012 (OECD health statistics, 2014).
3. Ye Li, Qunhong Wu, Ling Xu, David Legge, Yanhua Hao, Lijun Gao, Ning Ning, and Gang Wan, “Factors Affecting Catastrophic Health Expenditure and Impoverishment from Medical Expenses in China: Policy Implications of Universal Health Insurance,” 2012, <http://www.who.int/bulletin/volumes/90/9/12-102178/en/>.
4. The Central People’s Government of the People’s Republic of China, Special Provisions on Labor Protections for Female Employees. May 7, 2012. [http://www.gov.cn/zwgk/2012-05/07/content\\_2131567.htm](http://www.gov.cn/zwgk/2012-05/07/content_2131567.htm).

5. Charles J. Ogletree and Rangita de Silva-de Alwis (2002) "When Gender Differences Become a Trap: The Impact of China's Labor Law on Women," *Yale Journal of Law & Feminism*: Vol. 14: Iss. 1, Article 3. Available at: <http://digitalcommons.law.yale.edu/yjlf/vol14/iss1/3>.
6. BSR. "Women's General and Reproductive Health in Global Supply Chains." <https://www.bsr.org/en/our-insights/report-view/womens-general-and-reproductive-health-in-global-supply-chains>. Accessed August 23, 2016.
7. According to the All-China Federation of Trade Unions (ACFTU), there are nearly 63% more female workers in China today than there were in 1988. According to a CNBC report (2014), women account for 56.7% of China's workers, the second highest percentage in Asia.
8. National Bureau of Statistics of China: Present Workers Monitor and Survey Report 2009 (2009 data).
9. Interview with respondent 1, 10/2015.
10. Interview with respondent 2, 07/2016.
11. Interview with respondent 2, 07/2016.
12. The final HERproject Curriculum contains a collection of one-hour training modules and materials on different health topics that are designed for the setting. More information under "Embedded Education Practice" below.
13. <http://herproject.org/our-theory-of-change>.
14. Interview with respondent 1, 10/2015; Interview with respondent 3, 02/2016.
15. Interview with respondents 4 & 5, 10/2015.
16. BSR looks for partners with the following experience: training of trainers training experience; worked with the private sector; worked with international donors; has a focus on low-income adults.
17. During the pilot phase, BSR relied more on high-touch partnership to navigate the challenges of workplace-based training. For example, BSR staff were very closely involved with every training in China, not as trainers, but as relationship managers with the factories.
18. Interview with respondent 3, 02/2016.
19. Nevertheless, BSR hired a local contractor with expertise in labor rights, women's rights, and women's health, to provide this training to its employees.
20. <http://herproject.org/our-theory-of-change>, accessed August 22, 2016.
21. Interview with respondents 4 & 5, 10/2015.
22. Interview with respondent 1, 10/2015.
23. <https://www.bsr.org/en/about>.
24. Interview with respondent 1, 10/2015.

25. Interview with respondent 1, 10/2015.
26. Interview with respondent 3, 02/2016.
27. Robert K. Yin, *Case Study Research: Designs and Methods*, 5th ed. (Thousand Oaks, CA: Sage, 2014).
28. A literal replication strategy is one that presumes the cases selected will yield similar results thus serving to confirm each other, according to Yin (p. 57).



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