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DESIGNING FOR EDUCATION

INDEX: calls for faculty, students and recent graduates to participate in the upcoming INDEX: Design Challenge developed in close collaboration with and endorsed by UNICEF. The INDEX: Design Challenge continues the legacy of the INDEX:|AIGA Aspen Design Challenge. This second biennial contest features the theme Designing for Education. The INDEX: Design Challenge asks design and business students, as well as cross-disciplinary student teams, to develop design solutions for better education and education environments in developing regions.

The challenge centers around three sub-themes: Improved Education Facilities; Sanitation and Hygiene; and Gender Parity in Education. As well, the contest features an open challenge. Participants from all design disciplines are invited to enter the challenge.

EDUCATION: A WORLD CHALLENGE

Education is the second of the UN's eight Millennium Development Goals (MDGs) – the target is to ensure that, by 2015, children everywhere, boys and girls alike, are able to complete a full course of primary schooling. Achieving universal primary education means more than just full enrollment. According to the MDG, it also encompasses quality education, meaning that all children who regularly attend school learn basic literacy and numeracy skills and complete primary school on time.

According to UNESCO's 2010 Education for All report (EFA), the number of children out of school has dropped by 33 million worldwide since 1999. South and West Asia more than halved the number of children not in school – a reduction of 21 million. But the latest numbers show that 72 million children are still out of school, and if the trend continues, 56 million children will still be out of school in 2015.

Equally important, besides ensuring more children enroll in school, those children already in school must get a good education.

Literacy remains among the most neglected of all education goals, and millions of children are leaving school before acquiring basic skills. In some countries in Sub-Saharan Africa, young adults with five years of education have a 40% probability of being illiterate. About 759 million adults lack literacy skills today. Two-thirds are women.

The gender disparity in education is another problem in developing countries today. Even though the share of girls out of school has declined from 58% to 54%, and the gender gap in primary education is narrowing in many countries, the difference is still a problem. In Sub-Saharan Africa alone, almost 12 million girls may never enroll. In Yemen, nearly 80% of girls out of school are unlikely ever to enroll, compared with 36% of boys.

CHALLENGE GUIDELINES

Objective:
The objective is first and foremost to encourage students from around the world to apply their design skills to global challenges. An additional objective is to teach students about the various processes needed to bring their designs to markets, since that, of course, is a precondition for the designs to make an actual difference.

Registration:
Design students, teams of students, and educators wanting to enter the design challenge are required to register by e-mail to lvk@indexaward.dk before July 29. The e-mail should contain the name, title, and e-mail address of the contact person, the name and country of the institution and department, and an estimate of how many students will enter.

Teams:
Design students are encouraged to lead cross-disciplinary teams of engineers, artists, ethnographers, anthropologists, and scientists. Students are also urged to consider the social, cultural, and scientific significance of education and education environments.

Media:
The challenges target students from all the design disciplines. There are no restrictions on the type of solutions that students may submit. Print design, Web applications, environment design, physical devices, data presentation tools, and other approaches are all encouraged, as are proposals for the conceptual framework or method of dissemination that may propel these designs into public consciousness.

Timeline:
July 2010
The jury and advisory board are appointed.

November 2010
Submissions for INDEX: Design Challenge 2010 are due
November 26 at 12:00 midnight CET (GMT+1).

December 2010
The jury meets in Copenhagen. The advisory board will be planning the inclusion of business and VC on the basis of the chosen finalists.

February 2011
Workshop for the finalists in Copenhagen, followed by an award ceremony.

COLLABORATORS

INDEX: is collaborating closely with and endorsed by UNICEF on this challenge. In addition, Cumulus (the world organization in design education) has offered to assist in reaching out to educational institutions around the world.

INDEX: is a Danish-based, nonprofit organization established in 2002 that coined the concept "Design to Improve Life." INDEX: works globally to promote and apply both design and design processes with the capacity to improve the lives of people worldwide. INDEX: is widely recognized for its biennial global design award, the INDEX:Award, the largest monetary design prize in the world, worth €500,000 and encompassing the five categories of INDEX:—*Body, Home, Work, Play*, and *Community*.
Read more at www.designtoimprovelife.dk

UNICEF is on the ground in over 150 countries and territories to help children survive and thrive, from early childhood through adolescence. The world's largest provider of vaccines for developing countries, UNICEF supports child health and nutrition, good water and sanitation, quality basic education for all boys and girls, and the protection of children from violence, exploitation, and AIDS. UNICEF is funded entirely by the voluntary contributions of individuals, businesses, foundations and governments. For more information about UNICEF and its work visit: http://www.unicef.org

INDEX: 2011 is under the patronage of HRH the Crown Prince of Denmark.

INDEX: is supported by the Danish Enterprise and Construction Authority, The Danish Ministry of Economic and Business Affairs, Den Obelske Familiefond, Konsul George Jorck og Hustru Emma Jorck's Fond and Holger Petersens Fond.

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I. THE UNICEF CHILD FRIENDLY SCHOOLS (CFS) MODEL: THE ISSUE OF INADEQUATE AND TOTAL ABSENCE OF SCHOOL STRUCTURES, FACILITIES, AND FURNITURE IN CONFORMANCE WITH THE REQUIREMENTS OF THE CFS MODEL.

INTRODUCTION:

UNICEF has developed a Child Friendly Schools (CFS) model to move schools and education systems progressively toward quality standards by addressing all the elements that influence the wellbeing and rights of the child as a learner and the main beneficiary of teaching, while improving other school functions in the process.

The model operates on the child as the center and demands that education environments are safe, healthy and protective, and have appropriate physical, emotional and social conditions for learning.[i]

Millions of children are not benefiting from the quality standards prescribed by the CFS manual. Two specific problems relating to Child Friendly Schools, namely school infrastructure and school furniture, have been identified as challenges to be submitted to the INDEX: Design Challenge.

Description of the end-user problem

The problem is the lack of adequate quality education infrastructure and facilities, particularly school structures and furniture for students. In many cases, the traditional classroom structures and furniture are either not available or, when they are available, are old and dilapidated. Furniture is in short supply or undersized. Often students use alternative objects—such as their books, bags, pieces of brick, and logs—to sit on or even sit on the bare floor, under trees, or in the open space; and where they are lucky, their classes are held in tents. The conditions are uncomfortable and demeaning to both parents and students.

These conditions do not encourage school retention and completion of school, and they have a negative impact on learning achievement rates.

Current user problem and where it is taking place

This absence or lack of school facilities, including school furniture, is mostly prevalent in low-income communities, areas affected by conflict, and places that are experiencing an emergency, be it long or short term.

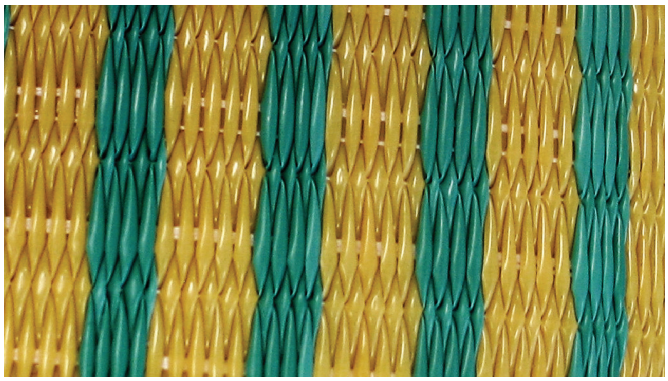
A male teacher helps boys with their lessons at a local primary school in the district of Bait Al Faqueeh in Hodeidah Governorate, Yemen

CHALLENGE NO 1: CREATING SUITABLE AND COMFORTABLE FLOORS FOR USE IN TEMPORARY LEARNING SPACES

During emergencies, UNICEF currently distributes plastic mats for use in tents and open spaces that are demarcated as “safe” temporary spaces for learning. The problem with the mats, however, is that they are quite thin; and when placed on rough surfaces, they do not absorb the discomfort and pain produced by sharp stones and other objects. The school day is long, and continued use of the mats even for a day is debilitating and unsatisfactory.

The challenge is to design a surface made from any material, which results in a product firm enough to sit on and to place other objects on, but at the same time has a soft, comfortable cushion feel. The raw material component would be preferably organic or environmentally friendly, cheap, and easy to produce without sophisticated machinery and processes. The raw materials should have the capability for being infused with safe insect repellent without destroying its properties.

Preferably the surface can be produced from globally and locally available material components, such as the soil or plants, and can be produced close to the learning spaces. Alternatively, if the material is made out of synthetic materials removed from the point of use, the end result is light weight, easily transportable, and low cost.



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Specifications of the current plastic mats

The specifications of the mats currently used by UNICEF are as follows: plastic, 1.8 m long x 0.9 m wide, weight 810 grams. The mat material is made from 100% synthetic yarns, tightly woven, with a monofilament warp and flat tape welt. The horizontal and vertical edges are secured to prevent fraying of the mat. The length-wise edges are mechanically secured, and the width-wise edges are secured by binding tape with stitches through the fabric of the mat. The mat material is water-proof, tear-proof, and trim-finished, with durable weaving and binding. The material, weaving, and binding is strong, appropriate for extended use in a school environment by young children. The mat is resistant to warping and deterioration from humidity and wetting and drying cycles. The mat is also suitable for extended use in hot, dry, dusty climates as well as in cold, moist, high altitude environments.

CHALLENGE 2: ENVIRONMENTALLY FRIENDLY, LOW COST SCHOOL FURNITURE (USING WASTE MATERIAL)

The second challenge is the design of *a process* for creating a material and/or *an actual component material* using discarded materials, either of which can be compacted into various furniture forms. Potential materials are sawdust, wood chippings, fabrics, paper, card boxes, etc.

The material will work on the principle of papier-mâché.[1] The key to the design is the sealant or hardening process. An additional feature of the material is its reusability.[2]

Another important feature is "waste"—that is, using discarded materials that can be found everywhere across the globe. The process will preferably be simple, easy to replicate, and able to be used as an income-generating activity for adults or even as a recreational or vocational activity for adolescents.

The material will have a minimum shelf life of one school year.

Explain how solving this problem will improve life and for whom.

The most obvious and immediate effect of the two challenges would be the increased comfort of the children who use the new floor and furniture. Other qualitative benefits are the fact that going to school would become an enjoyable experience with the resultant dignity, student pride, and improved attention span that would be elicited by the mere reduction in physical discomfort.

1 French for 'chewed-up paper', due to its appearance, and commonly called paper-mâché, this is a construction material that consists of pieces of paper, sometimes reinforced with textiles, stuck together using a wet paste (e.g., glue, starch, or wallpaper adhesive). The crafted object becomes solid when the paste dries. http://en.wikipedia.org/wiki/Papier-m%C3%A2ch%C3%A9#cite_note-0
Carton-pierre (French for 'stone cardboard') is papier-mâché that has been decorated to resemble wood, stone, or metal, and is used as decoration. http://en.wikipedia.org/wiki/Papier-m%C3%A2ch%C3%A9#cite_note-1

2 Similar products have been produced and exist. What is required is a publicly owned, low cost, non-commercial product.

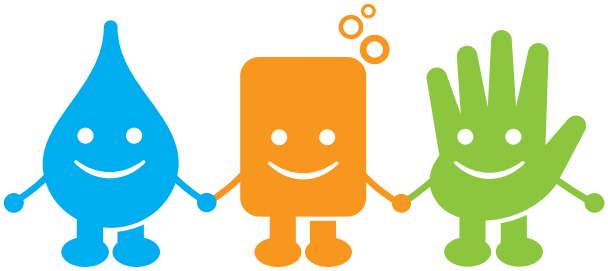
In the medium term, the facilities will also help countries find lower cost and interim alternatives for providing new structures or for rebuilding the institutions and systems that have been destroyed by natural disasters, conflict, or mismanagement.

In combination with other factors, such as the quality of the teacher, the long term benefits are increased school retention rates and learning achievements.

Developing and providing such materials will enable UNICEF and other partners to contribute towards the objectives of the Child Friendly School Model, which focuses on a human rights approach to education and multiple quality dimensions, such as safe, healthy, inclusive, and gender sensitive school environments; relevant curricula; and child-centered teaching and learning practices.

Are there any possible drawbacks or considerations to take into account?
A possible drawback is that if the projects are successful, governments might not take ownership of the processes, and implementation might remain donor and or project related.

An important consideration is building the capacity of local, small-scale artisans to enable them to incorporate the designs into their everyday commercial activities.



Global Handwashing Day
October 15

II. ENSURING SUSTAINED HANDWASHING IN SCHOOLS

INTRODUCTION

It has been reported that poor environmental conditions in the classroom can make both teaching and learning very difficult[ii] and that children's ability to learn may be affected by inadequate water, sanitation, and hygiene conditions in several ways. Statistics show that diarrhoeal diseases, intestinal worms, and other debilitating parasites affect appalling numbers of schoolchildren—about 40% of an estimated 578 million school-age children are infested with worms ... [iii]

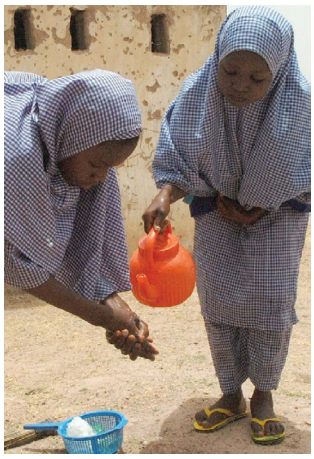
Schools are described as places with intense levels of person-to-person contact, as high-risk environments for children and staff, and as likely to exacerbate children's particular susceptibility to environmental health hazards. The simple practice of washing one's hands with soap is among the most effective and inexpensive ways to prevent diarrhoeal diseases and pneumonia, which together account for 3.5 million child deaths annually.

UNICEF is working around the world with private sector partners in recognition of the key role they play in making soap. The importance of handwashing with soap culminated in the first-ever Global Handwashing Day, launched on 15 October 2008.

This multi-partner, global, awareness-raising initiative was celebrated in 85 countries, with large and small events that often involved the participation of children. The focus of Global Handwashing Day was schools and school children. Many countries used it as an opportunity to raise awareness and to launch year-round programs in schools. Global Handwashing Day is now set to become an annual event to take place on October 15th each year.

Description of the end-user problem

The problem is the loss of soap distributed to schools through wastage, displacement, melting, and theft. Many new and improved fixed soap dispensing products are on the market, such as wall-mounted soap dispensers, which in many places have replaced bar soap in an attempt to secure the soap and to ensure a continued supply. These dispensers have features that make re-filling easy, but it is this feature that also allows the liquid soap to be drained from the dispensers and taken away from the premises; so in effect, soap for handwashing remains in short supply.



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CHALLENGE NO 3: THE IRREMOVABLE SOAP

The challenge is, therefore, to find a way to present the soap so that it cannot be easily taken away.

One wild idea that has been floated is to have a "soap wall": that is, soap as part of a wall[3] on which users would simply swipe their hands. An idea, design, or process for this or a similar solution is sought.

Current user problem and where it is taking place.
The problem occurs in school facilities in low-income countries where soap has been distributed as part of the water, sanitation, and hygiene program.

Explain how solving this problem will improve life and for whom.
Handwashing is recognized by the Centers for Disease Control and Prevention (CDC) as one of the most important means of preventing germs from spreading. The economic benefits of handwashing with soap have been described as follows:

- Total payback of US $7.40 per year for each US $1 per year invested
- 320 million productive days gained each year due to improved health
- Time savings of 20 billion working days per year from more convenient waste supply and sanitation services
- More healthy days for children; 272 million school-attendance days gained each year due to improved health

Other benefits of promoting handwashing in schools are helping children to make a life-long habit of washing their hands and having them carry the message about handwashing home to their parents and siblings.

Are there any possible drawbacks or considerations to take into account?
The challenges consist of getting the supply of soap integrated into the budget of schools, maintaining a continuous supply, sustaining the educational programs, and ensuring that soap remains affordable in the communities that need it most.

3 *Source unknown*

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III. CHILD FRIENDLY SCHOOLS: MENSTRUAL HYGIENE AND MANAGEMENT OF CONSUMABLES AS AN IMPORTANT ELEMENT TO REDUCING THE DROP-OUT RATE OF ADOLESCENT GIRLS FROM SCHOOLS

INTRODUCTION

Adolescent girls, who are navigating the second decade of their lives, are the cornerstone of society. This assertion has gained considerable momentum in the past year. The United Nations Interagency Task Force on Adolescent Girls, CARE International, Plan International, and the UN Foundation and Nike's Coalition for Adolescent Girls are some of the international organizations and partnerships that have launched campaigns to promote investment in girls and help them to fulfil their rights.

In the developing world, many adolescents are pushed into adult roles before they are ready: working, getting married, parenting either younger siblings or their own children, heading households, and even soldiering. While some of these roles may be taken on by boys or girls, the transition into adulthood differs greatly based on gender. Girls enter adolescence earlier and mature faster than boys, but their entrance into adulthood is a retreat into the domestic sphere. They take on more family roles and their public mobility is often restricted.

Description of the end-user problem

Girls miss school because they must spend hours a day fetching water for their families. With the onset of puberty, they face the embarrassment of menstruation in schools where toilets are unclean, have no doors, and are shared with the boys in their class. Parents also do not want to send girls to school during menstruation, sometimes for cultural and religious reasons, but often because of the lack of running water, safe sanitation, and consumables, such as sanitary pads. In Uganda 94% of girls reported problems at school during menstruation, and 61% reported staying away from school during menstruation. Children, particularly girls, are losing out on their education because they do not have the means and access to hygiene products that will enable them be comfortable and decent enough to attend school.

Current user problem and where it is taking place

The absence of appropriate facilities to enable privacy, dignity, safety, and hygiene management during menstruation results in the drop-out or absence of girls from schools. In countries where menstrual hygiene is a taboo, girls in puberty are typically absent for 20 percent of the school year. Menstrual hygiene in schools requires a way for girls to change and dispose of pads or wash, dry, and change cloths without adversely confronting the social norms associate with this often stigmatized subject, allowing them to attend school comfortably while menstruating.

CHALLENGE NO 4: MENSTRUAL HYGIENE AND MANAGEMENT OF CONSUMABLES

For this challenge we assume that infrastructural facilities—such as bathrooms, separate toilets for boys and girls, and handwashing facilities—have been provided in the schools. Hence we will concentrate here on the consumables and supplies.

What innovative ideas and designs could be developed for sanitary pads so they meet the following criteria: low cost, biodegradable from plain material, easily manufactured, locally manufactured, easily available, safe and hygienic, washable, reusable?

Ideas for disposing sanitary pads without choking drains; a facility within the school's toilet facility that only the girls can use without breaking the taboo of not being seen by the male? Ideas for creating an advocacy campaign – "sanitary pads as stationery"— and a process for this?

Explain how solving this problem will improve life and for whom.
Sufficient low-cost sanitary items will improve girls' hygiene, comfort, and dignity and will reduce the number of days spent hiding in the house and increase the number of days spent in school.

Are there any possible drawbacks or considerations to take into account?
The safety of the end product is of the utmost importance. This will be a challenge when we consider the fact that the product is supposed to be low cost.

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IV. INNOVATIVE IDEAS FOR THE EDUCATION SECTOR

INTRODUCTION

The issue of shortages of equipment, supplies, and inadequate facilities in low income communities and emergency affected areas has been described above.

CHALLENGE NO 5: OPEN

The fifth challenge is open to ideas for product and process designs for any solution that will benefit the users and that will fit into the conditions described above.

REFERENCES

[i] Child Friendly Schools (CFS) Manual, UNICEF

[ii] Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings, Editors: John Adams, Jamie Bartram, Yves Chartier, Jackie Sims 1

[iii] Water, Sanitation and Hygiene Education for Schools, Roundtable Meeting, Oxford, UK, 24-26 January 2005

CHILD FRIENDLY SCHOOLS

http://www.youtube.com/watch?v=6ksFagtQEK4
http://www.youtube.com/watch?v=JMEueYuMadU&feature=channel
http://www.youtube.com/watch?v=UFRlJXKLmD8&feature=related
http://www.unicef.org/lifeskills/index_7260.html
http://www.youtube.com/watch?v=PGc70ufIuHU

SCHOOL FURNITURE

http://www.youtube.com/watch?v=cOa1kHEiIpg

HAND WASHING

http://www.youtube.com/watch?v=U8cDr0xh_SA&feature=related
http://www.youtube.com/watch?v=825gGELjB98