



# SHINE A LIGHT

***WHITE PAPER***

**Project InSight**

SCOTT BOLDT

Project InSight 

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### WHITE PAPER on Project InSight



*Inside me there was everything I had believed was outside. There was, in particular, the sun, light, and all colors. There were even the shapes of objects and the distance between objects. Everything was there and movement as well... Light is an element that we carry inside us and which can grow there with as much abundance, variety, and intensity as it can outside of us.*

Jacques Lusseryan, *And There Was Light: The Extraordinary Memoir of a Blind Hero of the French Resistance in World War II*

Jacques Lusseryan is a remarkable character. Living a blissful childhood in Paris, at the age of seven, he tripped and fell into the corner of a desk in school which caused him to become completely blind. When he was 13, Germany invaded Austria in 1938 and Jacques learned German to better understand what he was hearing on the radio. In 1941 after the Nazis had occupied France, he and his friends formed the Volunteers of Liberty, a French resistance group, and Jacques became the leader of 600 comrades. "It is a miracle of the Resistance, this army of young people, commanded by a blind adolescent who kept everything, including fifteen hundred telephone numbers, in his head to avoid having anything incriminating on paper"<sup>1</sup>. Sadly, Lusseryan was betrayed in 1943 and arrested by the Gestapo. Jacques was interrogated 38 times and spent 180 days in a cell before being sent to Buchenwald Concentration Camp. Of the 2,000 French prisoners there, he was one of only 30 who survived when the camp was liberated by American forces in April, 1945.

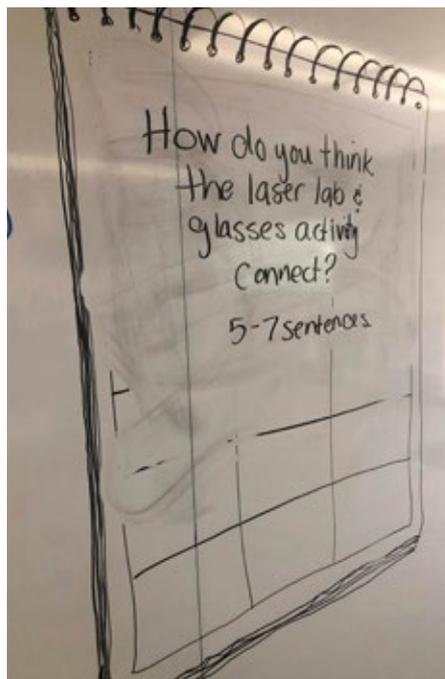
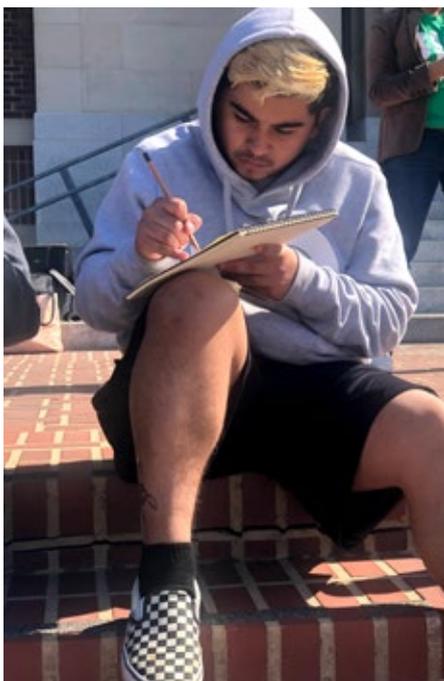
After the war, Lusseryan went on to become a lecturer in French literature and philosophy for 25 years, many of which he spent in the US, including three at Hollins University (Virginia's first women's college) and his last post was at the University of Hawaii. He died in 1971 in a car accident in France having had four children and three wives. There were two things that Lusseryan emphasized that he learned once he became blind that stayed with him throughout his life. The first was that if he looked inward he could 'see', and secondly that his fate was shaped from within himself outward, not determined from the outside.

The work of the Fox Family Foundation is designed to “provide the most vulnerable and under-resourced populations, especially people who are blind or visually impaired with equal opportunity to thrive in their schools, careers and communities”.

Big Picture Learning shares Lusseryan’s view that young people’s lives are significantly shaped by what happens within them in regard to their learning, confidence, world-view and sense of purpose. In a Big Picture school, students drive their learning through a personal curriculum that each student negotiates with others who know them best. Learning is pursued in and outside of school, in the community, on internships, out in the real world with adults, advisors, mentors, and professionals who guide and develop their learning. Big Picture Learning (hereafter, BPL) uses the phrase ‘leaving-to-learn’ to capture the powerful learning that occurs when students leave their school building to expand and deepen their learning, to get exposure to new ideas, people and opportunities, and to learn through their interests in the best places where those interests are happening (e.g. in work-places, studios, laboratories, college campuses, or in forests, up mountains or on farms).

In its newest learning initiative called Project InSight, BPL with the support of the Fox Family Foundation, has created a framework for encouraging young people to engage in exploring vision and eye care. Project InSight offers students the possibility to connect with existing networks of professionals in the world of work relating to vision care, including with physicians, researchers, bio-engineers, technicians, educators, artists, and entrepreneurs whose common pursuit is addressing large, complex and publicly significant problems.

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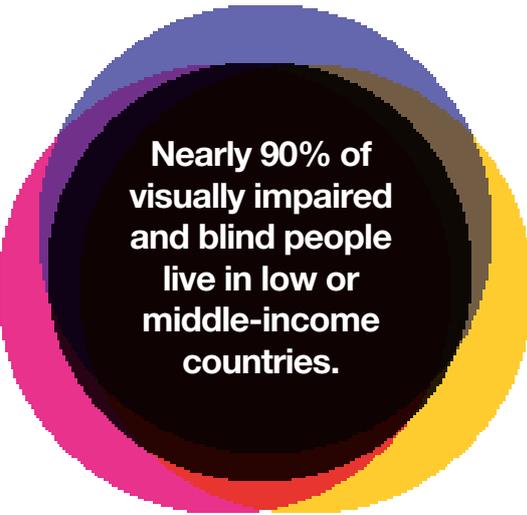
**Like the Fox Family Foundation, Big Picture Learning is focused on vulnerable populations ... they start with each student's interests and wrap a rigorous and relevant program of study around them.**

The Foundation works primarily in California but does cover the United States and it seeks to collaborate with innovative organizations focused on solutions for vulnerable populations because “people with vision-loss and blindness face barriers in access to high quality education, employment, and community connections. As a result, this population is vulnerable and disproportionately affected by poverty”<sup>2</sup>.

The aims of the Fox Family Foundation dovetail with the values and work of BPL whose vision is that all students live lives of their own design, supported by caring mentors and equitable opportunities to achieve their greatest potential. BPL is a non-profit organization founded in 1995 that helps communities and school districts design and start innovative schools, programs, and initiatives that serve all students, particularly those furthest from opportunity who have not fared well in conventional schools. Like the Fox Family Foundation, BPL is focused on vulnerable populations, and in their schools throughout the US and globally, they start with each student's interests and wrap a rigorous and relevant program of study around them. BPL helps each student to learn and work in those areas of interest and offers opportunities to explore and discover new interests. Project InSight is an initiative of BPL that provides opportunities for high school students to undertake projects and be exposed to fields related to vision care, eye health, and working with visually impaired populations.

This work is motivated by the belief that when students are encouraged and supported in exploring visual impairment and eye care, many will find that they have a deep and enduring interest in this field. For all the students who participate, they will engage in a unique learning experience giving them an insight into what for most will be an unfamiliar landscape of perception and understanding. It is intended that Project InSight will open up new worlds to them based on the learning principles of Big Picture with a focus on interests, practice, relationships, and the benefits of ‘leaving-to-learn’ (i.e. the rich learning that often occurs when students leave school or the familiar to encounter others and have an opportunity to practice and experience new things). Although Lusseryan died nearly 50 years ago, he would no doubt be delighted to learn of this initiative and the possibilities it opens up.





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The way our society is structured means that vision impairments negatively impact personal well-being, usually adversely affect children's social, emotional and educational development, and for adults, often lead to difficulties in their work and family life. Older people with diminished vision or who become blind due to glaucoma, diabetes, cataracts or macular degeneration are left more vulnerable and can suffer from isolation and loneliness. Problems with vision have wider impacts on families and communities not to mention the economy and health sectors.

A comprehensive international study<sup>3</sup> found that in 1990 of the 31 million people across the world who were blind, 68% of them had curable or treatable causes; by 2010 that proportion had decreased to 65% of 32 million people. This 3% improvement means that about 1 million people did not go blind. In 1999, the Global Initiative for the Elimination of Avoidable Blindness was launched – it is also known as Vision 2020: the Right to Sight and is a joint program of the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB). The goal was to eliminate avoidable blindness but this has been revised over the years so that the main goal as of 2013 is now stated as the reduction of 'avoidable visual impairment by 25%'.

Visual impairment affects a much greater number of people as it includes blindness as well as the full range of eye diseases and other factors that cause diminished sight. It was estimated by the WHO and the IAPB that in 2010 there were 285 million visually impaired people in the world, but in 2019 when the WHO included people with 'mild' visual impairment, the estimate skyrocketed to 2.2 billion people<sup>4</sup>. Alarming, it seems that up to 80% of these cases could have been prevented or treated. Unfortunately but not surprisingly, nearly 90% of visually impaired and blind people live in low or middle-income countries.

Over the past 30 years research has found that cataract, glaucoma, macular degeneration, diabetic retinopathy, trachoma, and uncorrected refractive error are the most common causes of blindness and visual impairment and that these are all either preventable or treatable. Furthermore, regardless of the region, more women than men were blind or had moderate to severe visual impairment (MSVI). "Previous research has shown that people with visual impairment are more likely to be malnourished and have reported to have difficulty shopping for, preparing, and eating food. They are also reported to have a poor quality of life".<sup>5</sup> The findings from all the studies that have been done in this area highlight the need for improved eye care and for greater support and education. There is also a demonstrable lack of skilled and qualified ophthalmic health care workers and eye specialists.

**The CDC also estimates that 93 million adults in the United States are at “high risk for serious vision loss”.**

In the United States, according to the CDC (Centers for Disease Control and Prevention), approximately 12 million people aged 40 and over have vision impairment, including 1 million who are blind. The CDC also estimates that 93 million adults in the United States are at “high risk for serious vision loss” and that only half of them have visited an eye doctor in the past year. It is feared that by 2050 nearly 9 million Americans could go blind due to the increasing epidemics of diabetes and other chronic diseases as well as the rapidly aging U.S. population; yet, 90% of blindness caused by diabetes is preventable, and early detection and timely treatment of eye conditions has been found not only to work but also to be cost effective. This is important because the CDC states that, “The annual economic impact of major vision problems among the adult population 40 years and older is more than \$145 billion”<sup>6</sup>.

Ironically, while vision problems are harming the economy and reducing people’s quality of life, the vision care market is booming with the eyewear market in the U.S. increasing every year since 2014<sup>7</sup>. The market for ‘assistive technologies for visual impairment is anticipated to rise at a compound annual growth rate of over 4% to \$140 million by 2024<sup>8</sup>, and the global vision care market will likely reach \$74 billion by 2024<sup>9</sup>. Since 2017, the major demand for assistive technologies has been coming from North America (about 40%) and Europe (35%). With advancements in eye care technology, in terms of both design and manufacturing, the global vision care market is expected to see substantial growth in the coming years.



In the U.S. the majority of the population wear glasses or contact lenses, and as people get older the use of visual aids goes to about 90% of people over 50 and nearly everyone who is over 75 years old. In 2001, 57% of people wore eyewear, in 2012 it was 61% and the Vision Council of America estimates that the figure is now over 70%. The global eyewear market was valued at approximately \$131 billion in 2018, and Luxottica led the optical retailers in the U.S. with \$2.5 billion in sales with their global sales approaching \$9 billion. Walmart and Costco have been cutting into the eyewear market, and in 2018, 20% of 30 to 50 year olds reported buying glasses or contacts from them.

**In 2018, the median annual wage for optometrists in the U.S. was \$112,000 and optometry is experiencing the fastest rate of growth of any occupation.**

Everything related to eye health, vision care and assistance for visual impairment and blindness has been on the rise. Artificial Intelligence is involved now in both the diagnosis of eye diseases as well as in recommending treatments, and there has been a huge increase in ultra-wide-field imaging for retinal health and pulsed light technologies for dry eyes. The recruitment of clinical specialists for eye care, including ophthalmic photographers and technicians has also risen sharply. In 2018, the median annual wage for optometrists in the U.S. was \$112,000 and the employment of optometrists alone is expected to grow by 10% from 2018 to 2028; *this is a faster rate of growth than any other occupation*. Since eye health deteriorates more frequently as people get older and because people are living longer, this trend is likely to continue for some time with wide skill shortages across the sector of eye care.

In view of all this growth, there is a clear need for ophthalmic medical personnel, especially because few individuals know about the profession or are aware of the requirements necessary to become certified. The U.S. Department of Labor projects a 17% increase in the number of ophthalmic medical personnel positions by 2026, with California having the second highest employment in the nation. This is a result of the expansion of the health industry due not only to a growing and aging population but also the large numbers of health care workers nearing retirement, the need to be cost effective, and a lack of investment in training programs to keep pace with these trends. Studies also point to the need for increased diversity in the allied health workforce to realize a culturally competent health care system. It is expected to be difficult to fill all of these allied health positions, including certified ophthalmic assistants (COA) and technicians (COT), since many people are not aware of the profession and there are a limited number of educational and training programs nationally providing for these positions.

It is within this context and with this knowledge that BPL has initiated Project InSight, believing that if students were encouraged and supported in exploring vision and eye care, many would discover a deep and fulfilling interest in this field. There are many well-paying jobs at all levels in this wide field that are available to youth. Given such opportunities, Project InSight has been implemented so students in schools can learn about and become connected to the world of work focused on vision loss and eye care.



Project InSight is the brainchild of Elliot Washor, the co-founder of BPL who also started a related endeavour in BPL called the Harbor Freight Fellowship Initiative that is now in its fourth year. The Harbor Freight Fellows Initiative (HFFI) is a movement for educational change that connects with young people who have an active curiosity and a developing aptitude in a skilled trade, offering them support through their school to develop and pursue their interest in the trades in a real world setting. The HFFI ([harborfreightfellows.org](http://harborfreightfellows.org)) provides young people with a \$1,250 scholarship to engage in a 120 hour apprenticeship within a community of practice to provide connected and sustaining relationships with expert mentors in the area of their passion.



Project InSight has just been rolled out since the beginning of 2020 and is on the verge of welcoming its first InSight Fellows. It is intended that it will model closely the design and workings of HFFI; however it has some distinctive features that mean that it has commenced in its own fashion. Project InSight differs from HFFI in that Harbor Freight Fellows are identified as having both an interest and an active involvement in a skilled trade. This may be, for example, a student who has developed some skills in carpentry and has already set out to build some structures or a student who spends her weekends helping her father in his welding business. Project InSight, on the other hand, is provoking interest in and supporting the growth of student opportunity in fields related to eye health, vision care, and working with vision impaired populations where most students are unlikely to be familiar with these fields at all and therefore not to have a pre-existing interest in them.



Andrea Purcell is a BPL School Design Coach who now manages and directs Project InSight and has spearheaded its development. At the time of writing, the Project InSight website had recently gone live ([projectinsightfellows.org](http://projectinsightfellows.org)) and there has been considerable work undertaken for involvement in the BPL national conference which, due to Covid-19 will be happening online over three weeks in July 2020. The conference is called Summer Fest and will feature the official launch of Project InSight as an initiative of BPL, announcements about the opportunities for InSight Fellows, and the official launch of its website.

Project InSight has also teamed up with the Southern California Eye Institute and prepared a series of short videos entitled 'Tools of the Trade'. Each video features a professional from the Institute who introduces a gadget or tool that helps them in their work. These videos will not only provide interesting insights into the wider realm of eye care but also they are designed to promote Project InSight and help it expand across the USA.



Lastly, as part of Summer Fest, Project InSight in partnership with Wayfinder Family Services has set a design challenge for 10 teams of 3-4 students from BPL schools across the States. Wayfinder, known formerly as Junior Blind, was set up in California back in 1953 with the idea that young people who are blind should share the same recreational and social opportunities as sighted children. The design challenge for 2020 is on how to make recreational facilities accessible to blind adolescents. This is a real-world challenge so the winners will be supported by a stipend from Wayfinder to implement their design in making recreational spaces more accessible.



In addition to all the activities connected to BPL Summer Fest, Project InSight has also partnered with Ophthalmic Technician Education Program (OTEP), through its partnership with the Southern California Eye Institute (SCEI), to offer 10 high school students a pilot summer course. This course is normally only available to high school graduates but it is being run over 6 weeks, 4 days per week for 2 hours each day. It is hoped that the course will qualify for accreditation and serve as a model for other high school students in the Los Angeles Unified School District who want to pursue a career in ophthalmology. All the students on the course will be shown how to do home health screenings and learn how to assess family members' eye health.

This year for Project InSight has been seen as its design and prototype year. The idea is that models will be developed in an open-source way for expanding this work into an ever-widening range of high schools not only in California but across the USA, and not only in BPL schools but in any school. From September, it is hoped that the first Fellows will be nominated and recruited following the same format that HFFI uses; this involves the identification of a teacher or advisor and an external mentor who will oversee the learning of a student through a 120 hour apprenticeship experience in a field related to eye health, vision care, or working with vision impaired populations. If the student completes the apprenticeship, they receive \$1,000 and the mentor and school receive \$500 each. Andrea has already been making connections with national partners hoping to instigate support from relevant businesses, foundations and other schools and school districts around the country.

As with HFFI, Project InSight hopes and intends to expand far beyond BPL schools and also to have an influence on high school students by open sourcing materials to teachers, sharing its success at educational and scientific conferences, and disseminating its learning in print and online. In the space of four short years, HFFI has grown from a pilot with three students to having 300 applicants from 64 schools across 16 states. A remarkable fact is that of these 64 schools, 85% are not BPL schools and 37 of them are Comprehensive High Schools with CTE programs. This year over 120 Fellows were placed with industry mentors, and 90% have completed their Fellowships despite the disruption to schools and businesses caused by Covid-19.

Project InSight started in 2020 with Andrea devising and designing ways to provoke student interest in the whole area of eye health and care, and visual impairments. With two instructors, one in art and one in science, a four-session workshop was creatively designed for students in BPL schools. The first workshop involved 17 students from three schools and the second workshop series had 12 students from one school.



**You can see personal growth. There was a real healthy overlap and synthesis between the art and science. We planted the seeds for an interest in a vocation.**

The workshops worked extremely well and this was reflected in the feedback from students and from the art and science instructors. Students were introduced to the anatomy of the eye and spent time in detailed observation of visible anterior eye anatomy via drawing. For another session, the science instructor devised Harry Potter-like glasses which emulated different eye diseases or conditions. Students wore the glasses and attempted to make drawings while viewing the world in a very different way. All the students were provided with journals and sketch pads and were encouraged to reflect on their experiences. Each workshop series had one visit to the California Science Center where students got to dissect a cow's eye and learn from Science Centre staff. For many this was a memorable highlight.

In interviews with the art and science instructors, it was clear that both valued their collaboration and were genuinely excited about the work that had been done with students. In the past, the science instructor had often introduced art or music into her science lessons so working with an artist was familiar territory; for the artist, it was the first time working with a science instructor and the first time working with adolescents. Their comments reveal their shared approach, the delight they experienced in working with the students and some of the key factors that made the workshops successful.



**We had to get the kids moving around, get them outside drawing. It's always great to draw from life, it exercises your brain. The cow eye dissection was great when we went to the California Science Centre.**



**Scientist:** In the workshops, we maximised the resources and got them as active as possible. You can see personal growth. There was a real healthy overlap and synthesis between the art and science. We planted the seeds for an interest in a vocation.

**Artist:** We were constantly saying to them to play – to experiment and give it a go. The journals were key. The kids wanted them back to show off their work. We gave them good quality paper and journals and this was important. It expressed to them that they and the program are valued and valuable. It opened up their sensibilities and they felt entitled to have good stuff.

**Scientist:** We recruited just through class announcements, talking it up and saying there were limited places. We have kids who did it who said they'd do it again and loads of students who are asking when they can do it. We gave students good supplies and resources and made it fun, and it was seen as valuable.

**Artist:** The eye malady glasses, (the Harry Potter type glasses made by the science instructor that replicated various eye disorders) were great and everybody, everybody loved them and wanted to put them on. They had to draw still life through those lenses. It was interesting. Their eyes adapted or they worked around it. It gave them an appreciation of what it might be like to have visual issues.

**Scientist:** The workshops do have a career focus but there is a lot of room to introduce new ideas and we all felt free. As a student, you didn't have to commit to anything after it. Going off campus was a treat; it's a structured adventure. Workshops are even better for kids when you get to go off campus and meet new schools. It still works in just one school but it's better when you combine them, although the consistency of having one location is important to deliver the workshops, especially for the tech. In the first one (workshop involving 3 schools), the relationships with kids from the different schools was great and having different adults.

**Artist:** We had to get the kids moving around, get them outside drawing. It's always great to draw from life, it exercises your brain. The cow eye dissection was great when we went to the California Science Center; it was a day out, an adventure. I loved working with it (Project InSight) and learned so much. The whole process was very collaborative. We were due to do 1 or 2 more (workshops) before the summer but Corona hit. Science and Art should be best friends; they can be applied to loads of professions and trades.



As mentioned in the preceding quote, two more workshop series that had been planned had to be postponed due to the Corona virus; however, this has not meant that Project InSight has been on pause. In fact, during lockdown Elliot and Andrea have been establishing strong links with businesses in other states working in vision care, eye health and with visually impaired populations. There have also been all the preparations to contribute to the BPL Summer Fest virtual conference including the design challenge with Wayfinder. The six week summer course with OTEP has already begun to be delivered to 10 Project InSight students online.

**Covid-19 involves a combination of work online, at home, in school, at worksites and even 'outta-site'.**

Project InSight is well placed to respond to the uncertainties and alternative arrangements necessitated by Covid-19. A flexible response has been devised to stay connected with students to become InSight Fellows and/or to get certifications in eye care. This involves a combination of work online, at home, in school, at worksites and even 'outta-site'. Outta-site refers to the important work that students do when they take their own initiative to find out more about something they are interested in.

Outta-site work was happening even before the lockdown when, for example, a student was so inspired by the prospects of working with visual impairment that she made contact with the Braille Institute of Los Angeles herself and subsequently was able to arrange an internship there. Outta-site highlights the effects of being captivated by an interest where students do their own research and seek out people and information to further their learning and get answers to their questions. Students may connect to people and physical places not online or they may go on a journey not known to their teacher where they are engaged in their own exploration.



Project InSight has also made use of online direct instruction for students. Moreover, its relationship with the California Eye Institute has generated a wealth of video materials that can be used to introduce students to visual impairment, eye health and vision care. It is obvious that Covid-19 and its impact on schooling are not going to get in the way of the progress of Project InSight. Ironically, if responded to well, Covid conditions can actually support learning through the attention and focus that would not have been available before because of the time demands of school.

The interviews with the instructors illuminated the Project InSight process. Project InSight is a carefully planned program based on a well-developed theory of learning. A growing body of research and best practice provides robust evidence that student interest, serious and deep practice, and long-term adult relationships lead to high levels of learning (Bloom, 1985; Blustein, 2011; Coyle, 2009; Deci et. al., 1991; Kenny, 2013; Lave and Wenger, 1991; Washor and Mojkowski, 2011, 2013).

Project InSight is best understood in relation to the principles and distinguishers of BPL, specifically an emphasis on ‘one-student-at-a-time’, and following up on interests through real-world engagement and opportunities for relationships with mentors and professionals. Since at least the time of John Dewey, it has been clear that students ‘learn-by-doing’ and that there is an ‘educative force’ that is the consequence of relationships. From birth, people learn habits, skills, language, concepts, behaviors and their identity through relationships. This insight is found in Vygotsky’s socio-cultural theory which suggests that learning is inherently a social process, that it is woven and indistinguishable from the relationships in people’s lives. According to Vygotsky, learning is, “embedded within social events and occurring as a child interacts within people, objects and events in the environment”<sup>10</sup>. The insight that learning happens through relationships is also the basis for the practice of collaborative learning where interaction constitutes the learning process.

**Project InSight recognizes that students learn best by doing and through relationships.**

Project InSight recognizes that students learn best by doing and through relationships. These principles are in evidence in the design of the workshops, in the collaborative process that is needed to pursue the ‘design challenges’, and in the priority that is given to creating interactions between the instructors and the students, and providing opportunities for relationships with professionals working in eye care or in support of people with visual impairments. A key component for Project InSight going forward will be involving young people as Fellows in these professional communities where relationships are formed, interests are pursued and practice is real; therefore, learning is active and future prospects are enhanced.

*I consider it especially important that the blind and the seeing compare what they see. They should get together before they pass judgment, before they establish an order of rank for inner and outer seeing; they should compare their experiences, become aware of their mutual wealth of experience. And they should, one as well as the other, accept their limitations. I am convinced that this comparison would accomplish valuable work. I am convinced that after such an exchange of thoughts, the limits of both kinds of perception, limits that should be known, will stand out in new clarity. Let us hope that this dialogue will be candidly carried out someday!*

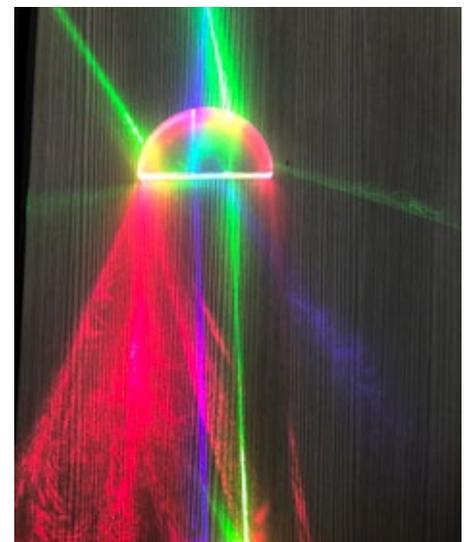
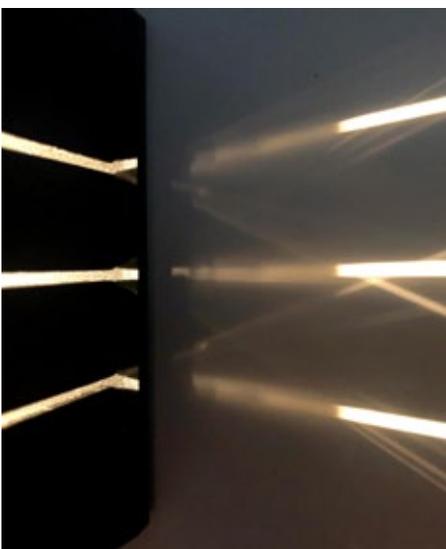
Jacques Lusseryan, "The Blind in Society" in *Against the Pollution of the I*.

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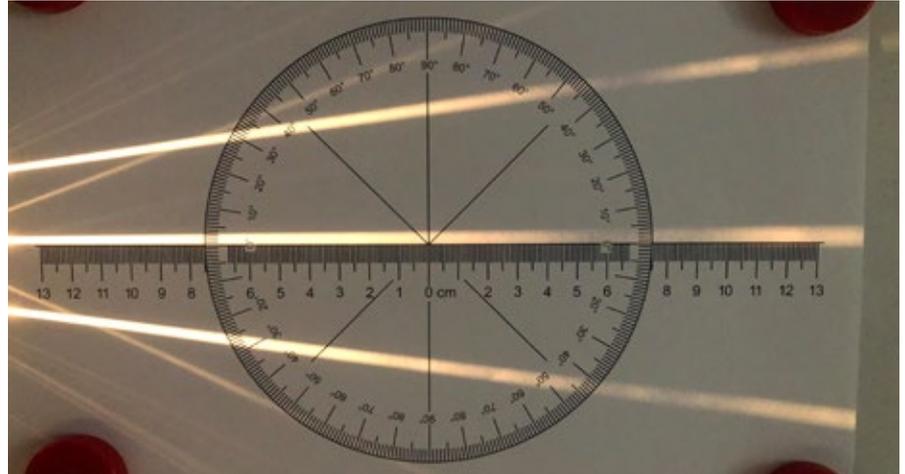
**The workshops were aimed at provoking student interest in the fields related to eye care or in careers connected with helping people with visual impairments.**

Students in 9th and 10th grade in Odyssey Stem Academy in Paramount, CA, a BPL school, were offered some design challenges and projects focused on the eye and other senses in their Idea Studio Lab. These projects served as introductions to the field of vision and eye care occupations. For 9th graders, they were tasked with developing a museum-type experience to explore the senses; 10th graders had to create a sensory garden. These are creative ways that schools can expose students to these experiences and opportunities and they build on what Lusseryan was advocating.

The workshops were also aimed at provoking student interest in the fields related to eye care or in careers connected with helping people with visual impairments. Furthermore, they challenged student perceptions through the various art and science activities that they engaged in. The powerful lessons that the two instructors gained from their experience were also experienced and captured in the student comments.



I find it valuable to learn how people see different. It would also be interesting to see how it affects them. I would love to have an internship about the eyes.



**E** - What I found valuable about this experience is that our eyes are interesting. Let me elaborate. I had always thought that the eye was soft, but the dissection showed me that that's not true, so I guess I can say the dissection was the most important part of this whole experience. The whole experience was fun.

**I** - Something I found valuable about this experience is that I learned every part of the eye. Detailed images and hands on experience brought me to learning the anatomy and how and which order the parts work in. I also learned how to use more detail in my drawings by using more space. As for the internship, I think the anatomy of the eye isn't for me, however, I love science.

**J** - What I found valuable about these sessions is the fact that we had the opportunity to learn about the eye, to learn crazy facts about a human eye. I learned that eyes are like a projector. I also found painting very valuable in these lessons. Being able to look through different eye conditions was very interesting. It was cool to see someone else's perspective. I do believe an internship about the eye to receive more information would be great, also because my vision is horrible.

**K** - That no matter the quality of the drawing, everyone sees and draws the same thing but different which shows the creativeness of every individual.

**B** - I find it valuable to learn how people see different. It would also be interesting to see how it affects them. I would love to have an internship about the eyes. It would better explain and help me learn about why I have glasses. I also just like learning.

**H** - I think this class was definitely valuable because of how informative it was. It can come in handy when I get a job or apply for a position. I would consider doing this as an internship if it was a paid internship.

**M** - I can draw an eye better. I can also determine what is wrong with a defective human eye. I value the knowledge I have gained from this. I would not want a job/internship involving eyes. Finally, I didn't prefer this class over sleep.

Being able to look through different eye conditions was very interesting. It was cool to see someone else's perspective.

The following comments refer to the experience of wearing the eye malady (Harry Potter) glasses that emulated different eye diseases or conditions. It is interesting to see how impactful this experience was and it connects well with what Jacques Lusseyran was suggesting; that is, the benefit of comparing another's perspective, experiencing its limitations and appreciating differences.



**M** - What most surprised me about this dissection was that cows' eyes are very similar to human eyes. The lens are different, they are like a small marble. I thought they would have been thinner and smaller. I was also surprised how much fat it has.

**E** - I learned that humans can't see in the dark because we don't have the tapetum lucidum. But also that the lens is not a shell. I found out that the eye has a semi-complex anatomy. I learned that we have irises that control the dilation of our pupils.

**J** - What surprised me about this dissection is the beautiful coral color in back of the eye (sclera). Something I learned about my eye is having similar eyes to a cow besides having a red sclera. Another thing would be how we all have blue eyes underneath our brown eyes.



**T** - I wasn't expecting the lens to be a ball, more of like a thin layer of paper like material. I also wasn't expecting a lot of jelly like goop in the eyeball. I thought the eye was more like a layered thing. I learned that blue eyes are not actually colored. They just lack pigment.

**B** - Well I've never done anything like this before. It wasn't my type of thing but I was able to learn many things about the eye. The parts it takes to make an eye function is interesting because it is so complex to understand it at first. I also learned that if you have brown eyes it means I have more pigment.

**I** - Something that surprised me about dissecting the cow eye is that the cornea was completely foggy. Usually I know that when something dies it develops cataracts but I didn't know to what extent. Also, I didn't know that when you see red eyes, it is the internal glare of the retina. Something that surprised me about my own eye is that the tapetum lucidum varies per person and per species. It really is crazy how animals see different colors. Maybe even some we don't.



**L** - What surprised me was how hard it was to cut. Also how iridescent the tapetum lucidum is. I learned that I kind of have a cow's eye. It really surprised me how jelly-like the vitreous humor was. I really loved pulling and cutting apart the eye.

**The scholarship money adds a strong incentive, creating exclusive opportunities to have students involved in a community of practice in a workplace.**

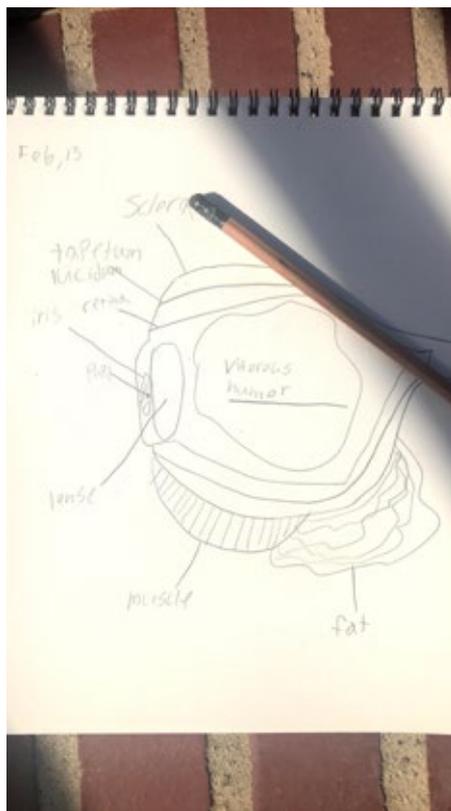
The purpose of the work of Project InSight thus far has been to prototype ways for schools to elicit the interest of students in the prospects of pursuing an internship or apprenticeship related to careers in eye care. The way BPL schools are structured is ideal for this project. Every student in grades 9-12 develops interest-based internships. BPL's internships situate student learning in authentic contexts and settings, focus attention on important work-based academic as well as non-cognitive competencies, and help students develop social capital in their quest for career opportunities. Internships are the lifeblood of the BPL student experience and the major vehicle for motivating and engaging young people in learning from and within their interests and persisting through to graduation and entrance to postsecondary learning and the workforce.

The HFFI work, upon which Project InSight is built, indicates that internships and new forms of apprenticing connected to students' interests and their development of adult relationships in the workplace matter a great deal for future success in the job market. Through their internships in high school, students build technical and soft skills, a professional network, and social capital that help them secure employment in a field of interest. HFFI understands that students apprenticing while in high school offers a way of both keeping them connected and in school and maintaining and building their interest in a skilled trade. The scholarship money adds a strong incentive, creating exclusive opportunities to have students involved in a community of practice in a workplace.

- Learning through relationships
- Learning through interests
- Learning by practicing skills

Most apprenticeship programs start after high school as first, introductory courses. The problem is that the predominance of classroom based learning disengages many students from their schools, frequently causing the loss of students who would have otherwise been retained if they were afforded apprenticing experiences in high school out in workplaces and in trades in which they are interested and for which they have an aptitude. HFFI is providing high school students with mentors in real world settings to develop the skills and relationships that will carry them forward into deeper learning, careers and relevant further learning.

There are three interwoven strands to HFFI. These are learning through relationships, learning through interests and learning by practicing skills. When students are afforded these opportunities, they flourish, become active and engaged learners and develop the competencies that educators, parents, employers and communities want for all graduates. The crucial aspect of HFFI (and for Project InSight) is that it gets students out, into their communities, into worksites, into their interests, deep into their practices, and into relationships with a community of practitioners with the skills, open-ness and resources to transform their learning and lives.



It has to be noted that the work of HFFI and of Project InSight goes far beyond connecting students with avenues to explore worthwhile careers through engaging learning activities. Many BPL students are from backgrounds where a higher proportion of people suffer from treatable and preventable visual diseases and disorders. Project InSight is serving to provide greater awareness of eye health in students' families and communities.

Many students have come to BPL schools because they have had negative experiences of mainstream schooling, and they have limited social capital and relationships that would expose them to wider career opportunities. Project InSight is enabling many high school students to encounter experiences and professions that would otherwise be unavailable or unknown to them. Moreover, by engaging students in dynamic workshops, out of school visits and offering the possibility of a paid apprenticeship in a burgeoning field, Project InSight is maintaining their interest in education and providing unique opportunities to discover meaningful and rewarding careers.

Participation in Project InSight is open to all students, and no academic qualifications are required, only an interest in becoming involved. Selected schools have an opportunity to participate in designing and prototyping materials and processes, and they receive materials, training and support. For students who discover an interest in the fields of eye care or assisting people with visual impairments, a teacher/advisor fills in a nomination form and the student indicates what they are interested in. Prospective Fellows complete an application form and are then interviewed to assess the depth of their interest.

For students who become Project InSight Fellows, they will be able to learn practical skills gained through an apprenticeship experience in the places where the work is happening. Many if not most of the skills that will be acquired by Fellows cannot be achieved in a classroom or learned from books; they come from learning from mentors and skilled professionals sharing their experiences, insights and techniques.

The mentor together with a teacher/advisor will assist the student in designing an apprenticing experience that emphasizes deep immersion in the field. These opportunities will allow students to 'go deep' into areas of specific interest, and participate in focused communities of practice. These field-based experiences will include attention to relevant discipline-based knowledge, skills, and dispositions, and to essential social-emotional and workplace competencies.





Project InSight through BPL will advance the Fox Family Foundation's mission and goals by providing these innovative learning opportunities for students who wish to pursue learning, work, and careers in the broad area of vision care. The focus is three-fold.

1. Allow students to explore their interests in the many opportunities to work in the fields of visual impairment and vision care.
2. Develop a Fellows program that allows students who are making a commitment to a career in vision care to engage in an apprenticing opportunity where they develop the knowledge, skills, and dispositions to be competent and productive in their work and lives.
3. Develop and promote career paths at the high school level that lead to work and postsecondary opportunities for those students with a serious interest in pursuing employment and post-secondary opportunities in eye care.



I am conscious in writing this report on Project InSight that, even though it will be read by only a few people, it is most likely that none of them will be blind or have a serious visual impairment. So much of what is composed and printed is left unavailable to people with visual difficulties. Today, the technology exists to make writings more widely accessible but even so the cost for doing this means that most of what is written is not converted because as a minority, the blind and visually impaired are largely undervalued so, many of their insights and gifts therefore go unrepresented.

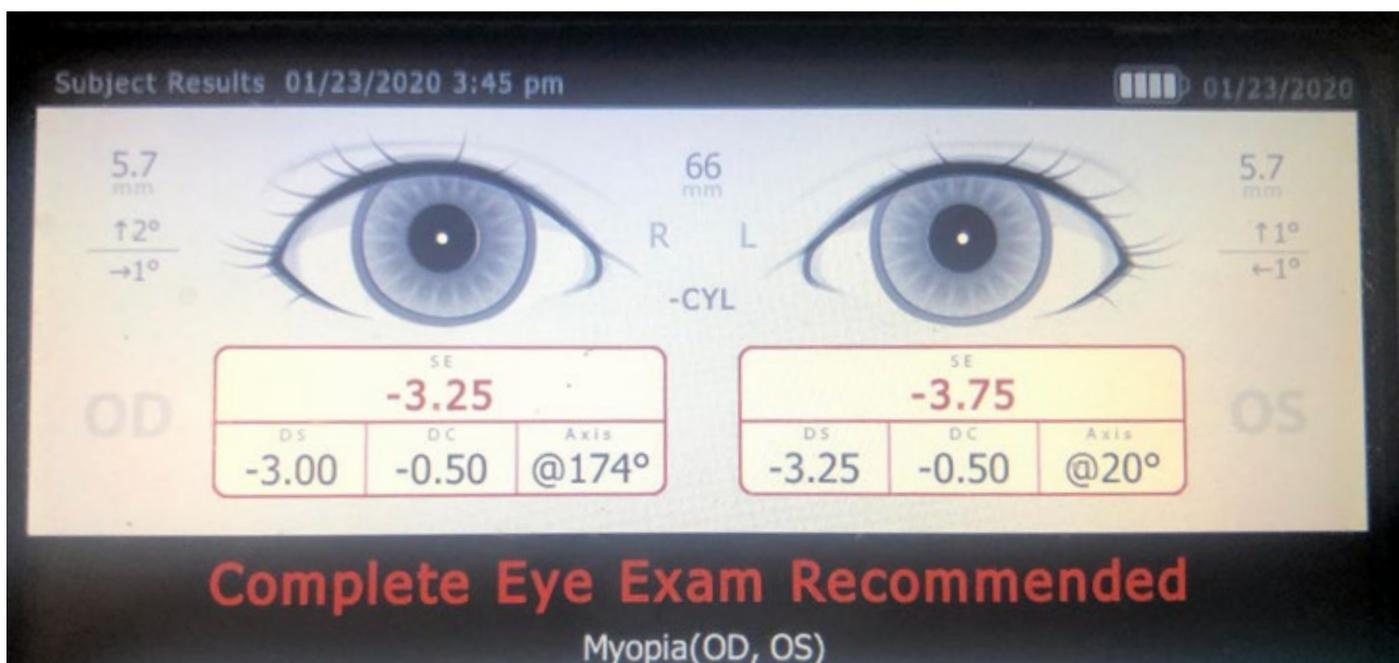
*Let us never forget that the fate of the blind community is the fate of all minorities. It is of no importance whether these minorities are of national, religious, or physical origin. At the very best they are tolerated. They are almost never understood. If blindness is regarded as privation, it becomes privation. If we think of blindness as a deficiency that must be compensated for at any price, a path may open; but it will not lead far. If, however, we regard blindness as another state of perception, another realm of experience, everything becomes possible.*

Jacques Lusseryan, "The Blind in Society" in *Against the Pollution of the I*

**Disability is not something we overcome. It's a part of human diversity. ... You have the power to influence your future. Keep learning, keep developing new ways to engage with the world, and keep believing that you have talents to share with the world.**

In the Introduction to Lusseryan's book *The Pollution of the I: On the Gifts of Blindness, the Power of Poetry, and the Urgency of Awareness*, Christopher Bamford relates a story of a Dutch girl who was born deaf but whose parents never related to her as if she could not hear. They spoke and read to her, sang songs and played music. She grew up speaking clearly, and if she is able to lip-read, no one would know she is deaf. As an adult she works with parents of deaf children, and she still loves music and goes to concerts, which means that she hears but not with her ears. In a similar way, Lusseryan saw but not with his eyes. In both cases, each child was brought up in a loving family who did not relate to them as having a disability which it seems led them both simply to expand and deepen their abilities.

Haben Girma is deaf-blind and became Harvard University's first person with this unique ability to graduate from their law school. Her mother was a refugee from Eritrea who met her Ethiopian husband (Haben's father) in California where Haben was born. Most articles about Girma mention that her older brother who is also deaf-blind was not provided adequate support and services in Eritrea, and they go on to highlight the opportunities the USA afforded Haben through the Americans with Disabilities Act in being able to go to a main-stream school in Oakland and benefit from accessible technologies. While this is all true, less attention is given to the courage of her mother and how Haben was raised. At the age of 15, for example, her parents let her travel to Mali in Africa to work as a volunteer helping to build schools there. As Haben says herself, "Disability is not something we overcome. It's a part of human diversity. ... You have the power to influence your future. Keep learning, keep developing new ways to engage with the world, and keep believing that you have talents to share with the world."<sup>11</sup>





Commenting on Lusseryan, Bamford remarks that the poet Robert Bly once said that ‘your greatest wound is the source of your greatest gift’. He states that Lusseryan found that because of his blindness he had to develop a forgotten and neglected faculty, the faculty of attention. Through his blindness, he became more attentive to himself, to others and to the world around him. “This was something entirely new, you understand, all the more so since it contradicted everything that those who have eyes believe. The source of light is not in the outer world. We believe that it is only because of a common delusion. The light dwells where life also dwells: within ourselves. ... Because of my blindness, I had developed a new faculty. Strictly speaking, all (people) have it, but almost all forget to use it. That faculty is attention. In order to live without eyes it is necessary to be very attentive, to remain hour after hour in a state of wakefulness, of receptiveness and activity”.<sup>12</sup>

**Pay attention  
to who is in  
front of you.**

Lusseryan challenges us to pay attention. Elliot Washor of BPL was once asked to summarize the values and principles of Big Picture Learning in one sentence; he replied, “Pay attention to who is in front of you”. Project InSight seeks to pay attention to the needs and interests of the students, to pay attention to opportunities for learning about careers associated with eye care and assisting people with visual impairments, and to be attentive to how best to engage students in learning-by-doing in collaborative relationships that will bring them in contact with skilled mentors and unique opportunities in these emerging, rewarding and important fields.

### About the Author

Dr. Scott Boldt specializes in Curriculum Development and Learning Theory. His books and articles have covered topics ranging from educational disadvantage and alternative education to school leadership and national curriculum reform. Based in Ireland, Scott has his M.Ed. from Trinity College, Dublin and his Ph.D. from the University of Jyväskylä in Finland; he brings a fresh and international perspective to understanding Project InSight and Big Picture Learning along with years of practical engagement with learners.

## ADDITIONAL REFERENCES

Dewey, J. (1902) *The Child and the Curriculum and The School and Society*. Chicago: University of Chicago Press.

Houghton, R. and Lapan, M. (2003) *Questions from Beyond: Educational Queries for a New Millennium*. New York: Nova Science Publishers.

Lin, L. (2015) *Exploring Collaborative Learning: Theoretical and Conceptual Perspectives*. London: Sage.

Washor, E. and Mojkowski, C. (2013) *Leaving to Learn: How out-of-school learning increases student engagement and reduces dropout rates*. Portsmouth, NH: Heinemann.

1. Lusseryan, J. (2006) *Against the Pollution of the I: The Gift of Blindness, the Power of Poetry and the Urgency of Awareness*. Introduction by Christopher Bamford. Novato, CA: New World Library.

2. Fox Family Foundation website: <https://www.foxgiving.org/>

3. Bourne, R., Stevens, G., White, R. et al. (2013) Causes of vision loss worldwide, 1990–2010: a systematic analysis. *The Lancet: Global Health* Vol. 1 (6) pp. 339-349.

4. World Health Organization (October, 2019) “Blindness and vision impairment”, website: <https://www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment>

5. Jones, N., Bartlett, H.E. and Cooke, R. (2019) “An analysis of the impact of visual impairment on activities of daily living and vision-related quality of life in a visually impaired adult population”, *British Journal of Visual Impairment*. Vol. 37, (1) pp. 50-63.

6. Centers for Disease Control and Prevention website: <https://www.cdc.gov/visionhealth/index.htm>

7. O’Connell, L. (2020) U.S. Eyewear Industry – Statistics & Facts.

8. Global Industry Research Update, Future Scope, Size Estimation, Revenue, Pricing Trends, Growth Opportunity, Regional Outlook and Forecast to 2024. (October, 2019) The Expresswire: Global Assistive Technologies for Visual Impairment – Market Research Report 2019.

9. Vision Care Market – Global Outlook and Forecast 2019-2024. (March, 2019) website: <https://www.researchandmarkets.com/categories/optical>

10. Vygotsky, L. (1986) *The Mind and Society*. Boston: MIT Press.

11. Girma, H. (2019) *Haben: The Deafblind Woman Who Conquered Harvard Law*. New York: Twelve.

12. Lusseryan, J. (2006) “The Blind in Society” in *Against the Pollution of the I: The Gift of Blindness, the Power of Poetry and the Urgency of Awareness*. Novato, CA: New World Library.



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