

International Service Learning 3.0: Using Technology to Improve Outcomes and Sustainability

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Abstract—Today's International Service Learning practices require an update: modern technologies, fresh educational frameworks, and a new operating system to accountably prosper. This paper describes a model of International Service Learning (ISL), which combines current technological hardware, electronic platforms, and asynchronous communications that are grounded in inclusive pedagogy. This model builds on the work around collaborative field trip learning, extending the reach to international partnerships across continents. Mobile technology, 21st century skills and summit-basecamp modeling intersect to support novel forms of learning that tread lightly on fragile natural ecosystems, affirm local reciprocal partnership in projects, and protect traveling participants from common yet avoidable cultural pitfalls.

Keywords—International Service Learning, ISL, field experiences, mobile technology, 'out there in here', summit basecamp pedagogy.

I. INTRODUCTION

ISL projects on university campuses in North America, Great Britain and Australia have grown over the past two decades. Forecasts for future endeavors predict a continued increase both in the number of individual travelers and in the number of projects [1]. The increase in both participation and visibility of ISL is welcomed by many progressive educators that believe learning is best achieved by doing. Typical ISL projects involve college students traveling abroad to 'construct' homes, 'beautify' local schools, and 'teach' English. Countless variations of the 'work' done exist, yet the majority of interpretations include unskilled-semiskilled participants from the Global North visiting impoverished areas in the Global South.

The educational roots for service learning began with John Dewey [2] in the early 20th century and today have been mainstreamed through 'sustainable education models' and in 'project-based learning'. More recently in North American high schools and universities the rise of ISL is reshaping the conversations around traditional educational outputs, namely community involvement to develop civic identity.

Today, service learning projects are seen by many as a powerful tool to help form citizenry in young adults. However, recent studies [3], [4] have also revealed unintended, yet very real, concerns about the negative effects of ISL on travelers, host participants and natural ecosystems.

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II. ISL CHALLENGES

Travelers, hosts and natural ecosystems are the key constituents involved in ISL projects and thereby are susceptible to both benefits and harm. Relevant ISL concerns for those traveling from the Global North include perpetuating neo-colonialist attitudes and a focus on short-term aid over long-term economic solutions. Host communities and individuals face imbalanced relationships related to decision making, control over educational outcomes, and monetary benefits from partnerships. Damage to the natural environment occurs through long haul flights, the demands of visiting participants that exceed the local infrastructures' capacity, and 'voluntourism' itineraries that sometimes promote vacation activities over service. These concerns, when factored independently or together, can offset the benefits of service programs. ISL, while grounded in educational theory and holding much promise for both senders and recipients, must evolve to address objections in its current design, ethos, and outcomes.

This study requires original research that uncovers the connections between ISL, expeditionary learning (EL) and technology. Ideally this research will inform a model of service which minimizes harm to travelers, hosts, and the planet, while simultaneously updating ISL. A better ISL model, ISL 3.0, may accountably prosper by incorporating new technology and current pedagogy.

III. THEORY

This research will draw mainly on the work of two educational theories, 'experiential learning theory' which hardly needs any introduction, yet it will be provided, and the lesser known theory of 'connectivism'. As is widely accepted, these two theories are themselves products of and influenced by other theories; in a forthcoming literature/scoping review manuscript, the research will touch on other theories including constructivist theory and multimedia learning theory.

John Dewey was a prominent US educational reformer of the 19th and 20th centuries 1859-1952. Professionally Dewey was a psychologist, pragmatic philosopher, educational reformer and a prolific writer. He penned over 700 articles and around 40 books. Of the latter the most influential are *The School and Society* (1899), *Democracy in Education* (1916), and *Experience in Education* (1938). It bears mention that Dewey was also a traveler; he visited China, Japan and South Africa among other countries.

Central to experiential learning is student activity, learning by doing. The student is not a passive recipient, not a vessel to be filled in the Freirean sense, but an agent who engages in

reflexive learning along with other ongoing activities in a larger environmental field [5]. The theory of reflexive learning proposes that human experience is not a disjointed sequence of stops and starts, but an ongoing/developing circuit of activities. It is in this context that students learn by doing, and connect that learning and doing to progressive iterative waves of learning, and these iterations create an experiential ecosystem.

Minds, then, are not passively observing the world; rather, they are actively adapting, experimenting, and innovating; ideas and theories are not rational fulcrums to get us beyond culture, but rather function experimentally within culture and are evaluated on situated, pragmatic bases. [6]

It is in this context that one sees natural synergies between Dewey's learning by doing through a reflexive cycle and EL. In one's mind, the expedition, basecamp, the climb and the summit are active experiential learning opportunities. Iterations/adaptations occur at each stage in the journey and at each intersection of culture, action and learning. It is in the reflexive cycle, and its inherent development of circuits that experiential theory and connectivism theory dovetail.

Connectivism is a relatively new learning theory developed in the digital and technology age and predicated on the idea that people process information by forming connections. Connectivism also suggests that people no longer stop learning after formal education ends but continue to gain knowledge from careers/jobs, networking, and in experience and access to information with new tools in technology. Simply stated, learning occurs when a 'learner' connects with or 'feeds' information to a 'learning community'. Siemens states, "A community is the clustering of similar areas of interest that allows for interaction, sharing, dialoguing, and thinking together." [7]. It is important to note that nodes may have various strengths: this depends on the concentration of information passing through them as well as the number of individuals who are connected.

The learning process in connectivism is cyclical. There, learners connect to a network to share and 'upload' new information or to find and 'download' new information, and then modify their beliefs based on the new information. As a result, the network and individual learner are changed by the input/output, and the process begins again. In this way knowledge can be created, as opposed to simply consumed. The network or ecosystem or community can be as small as two nodes (two individuals communicating) or as large as networks found on the world wide web.

Two skills that are fundamental to learning in a digital age are searching and filtering information. Simply put, but far from simple, "The capacity to know is more critical than what is actually known" [8]. Priority is given to researching and leveraging technological tools to both expedite searching and seeking, and the return of the results to the 'network' or community.

Connectivist researchers recognize that 'updates' and learning occur both in a 'systems realm' (i.e. digital and analogue communities) and in the 'individual node' (that is in

us). They also recognize that since information is constantly changing, its validity and accuracy may change over time, and since learning is ongoing, one's understanding and ability to learn about a discipline will also evolve over time.

IV. METHODOLOGY

In this research there will most likely not be a clear cut, delineated, single methodology. Instead it will employ methodologies from ethnography as a whole including aspects of institutional, child study, and 'user experience' as it relates to technology. Also included is an ethnographic Participatory Action Research (PAR) component, as the work will be situated in formal 6th-12th grade educational settings; the research will focus on the explicit goals and outcomes that school has identified, related to EL. All of these various ethnographic methodologies connect around a central premise. The overarching assumption deduces that the people whose 'society' is being studied are the best source to inform an empirically grounded, holistic understanding of that 'society' [9]. Taking a step back from commonalities this research will look more closely at ethnographic methodological components.

Institutional ethnographies are generated from the examination of work-related processes; they typically study how work activities are coordinated and implemented. The point of entry used to look at schools, teachers and students is through the particular lens of students' school life (field trips/ experiences) as it impacts both 'in school' and 'out there' learning. The 'client' groups that will be focused on are students and teachers and the work they engage in as it applies to EL. A single study of a single institution typically can only trace one thread through these processes [8]. In order to make sense of the findings, researchers will need to connect the work of studying school practices, policies and results related to EL, to a shared ontology of patterns that emerge when people learn outside of work and then bring that knowledge back to the workplace. The researchers, in a sense, will be mapping different ways of learning and knowing over existing frameworks albeit with different participants and varied institutions.

Accepting the limitations of a singular study, focused on one phenomenon (EL 3.0) and in a stand - alone institution (schools), it is critical to connect with the existing literature on the impact of learning 'outside of the workplace' both by those that travel and those who stay in. 'Out there' learning happens at conferences, off site training, and through work of off campus related experiences; 'in here' learning can be found in the preparation for those events, the support of colleagues who are 'in the field' or in the transmission of information from travelers in real-time, asynchronously, or in post-experience modes.

Ethnography, a detailed study of particular groups of people, comes from the Greek words *Ethnos* meaning people and *Graphein* meaning writing. Children or students are recognized as people who can be studied in their own right in the domain of the social sciences. Ethnographic methodology has always permitted children to be research participants and

to be featured in childhood research. Young people are viewed as competent interpreters of the social world and of their place in it. Today children are even seen as contributors to the social world resulting in researchers doing work 'with' rather than 'on' children [9].

Particularly relevant to the work on EL is the focus on understanding how students learn, as opposed to what is learned, in this case through basecamp and summit experience. It is the special culture of learning en route to the summit or in basecamp that is central to the study. Adults have a tendency to mess this up: researchers often focus on the adults' behavior towards the children; it is challenging to see students as social actors in their own right, asking directly for their views and opinions and primarily noting their interactions with adults and others [10].

Child studies many times are multi-sited with more traditional research being conducted at school and at home [10]. Other ethnographers have chosen hospitals, juvenile detention centers and semester abroad experiences as additional locations to home [11]. The intention of the research is to connect inside the school learning to out there experiences, following a student (or small cadre of students) through several EL cycles.

Ethnography, in an egalitarian sense, allows children to be seen as competent informants about and interpreters of their own lives [11]. This recognition is central to the student study: their own accounts will feature centrally within the research analysis. The 'user experience' in this context will analyze technological hardware and software applications by students and teachers. But it is more than that. It is here that the work in digital ethnography, a methodology and methods for representing tangible culture through combining digital media with elements of 'story' [12], will be particularly useful. Twenty-first century anthropologists and ethnographers are increasingly concerned with the intersection of culture and technology; this pivot will show prominently in the research. New media development involves attempting to 'show rather than tell' events as they unfold and seeking to give the audience a taste of the overall experience rather than presenting the factual details [13]. The 'user experience' will include directly observed interactions with technology, the use of technology to create media that represent student learning, and the bi-directional sharing of media between 'out there' and 'in here' teams.

Postmodern culture is distinguished by an almost seamless integration of media screens into everyday life [14]; neither formal education in itself, nor EL specifically, is different. Digging deeper "[p]eople are here and there, in multiple heres and theres, in a relentless combination of places" [14]. As cultures transition to less circumscribed systems, "we need forms of inquiry that recognize hybridity along the permeable and blurred cultural boundaries of space and time." [14] This research promises to be at the intersection of 'here and there' utilizing the very technology required of EL 3.0 and of postmodern ethnography. If ethnography is "the study of people in their own time and space, in their own everyday lives" [15] then those everyday lives of a student in 2020 necessitate a multi-sited analysis, including online. Multi-sited research is not just a comparison of different places/ spaces, but involves tracking a phenomenon to the different places

where it unfolds: in the classroom and in classroom technology, in the field and in field technology.

Incorporating a PAR methodology means actively introducing and facilitating the use of relevant technology and measuring the impact of EL/technology on students, learning and teachers as well as the influence on host communities, travelers' biases, and environmental issues. Researchers will conduct observations in schools that practice, or aspire to begin, EL: stakeholders (students, teachers) will have hopes/ expectations of this work; it must be done with them and be evaluated by them. Drawing on the work of [16] "research should also benefit those who are subjected to it and more specifically that researchers should engage themselves in helping to solve problems of communities without thinking primarily about their own professional gains (the 'ethical' motive)." [16].

PAR requires a shift from the traditional researcher role; and to that end the ethnographic work done around the 'action turn' is most helpful. "Of particular significance for the action research community is a call to social scientists for an 'action turn' towards studying themselves in action and in relation to others." [16]. By taking the action turn, researchers are no longer separate observers of reality, but participants within it; researchers are now in relation to the other actors creating and using knowledge to change something in the world [17].

Critical to the implementation of PAR is the understanding that it will alter the very process that creates the conditions for change, "facts are made and the facts we interpret are made and remade" [18]. Pursuing research in the context of PAR changes a project's methodological approach, most often in non-linear and unexpected ways [19]. What is observed and then acted on is never fixed but always open to possibilities. This is both comforting and terrifying, yet in the context of EL appropriate. The frequentative nature of experience, reflection, and progress is not a straight line but a switchback route with footpaths and dead ends. Fold in the technology saturated postmodern culture, the 'multiple heres and theres' of our participants and a perpetual combination of spaces/places, and the researchers will be turning their necks and the trail maps in every direction looking for a bearing. Thankfully the methodology provides orientation, "[t]here was no ethnographic knowledge being discovered or collected; instead, knowledge and ethnography with it were being reconceptualized." [19].

V. RELATED WORK

In order to situate the research, to the wider field, school based historical context that connects EL and ISL are necessary. Outward Bound was the first documented modern educational institution to adopt EL as its pedagogical core. 'Outward Bound' refers to the nautical term describing "a ship leaving the safety of its harbor to head for the open seas [19]. Today's EL is, in part, based on the Outward Bound organization founded by progressive German educator Kurt Hahn in 1941. At his school, Hahn refined EL philosophies into a pragmatic curriculum that focused on body kinesthetics as well as living outdoors/survival skills practiced through an

expedition (a hobby or project) in addition to scholastic achievements in the classroom. [20]

After some years in Germany, Hahn relocated the school to Wales, joining the British merchant-maritime industry and reframing his purpose to a specific focus on teaching young British sailors the vital survival skills necessary during World War II era. [19] The maritime training program was based mainly on Hahn's belief that character development was just as important as academic achievement. When young people were put in adventurous, challenging, outdoor situations, Hahn remarked on their increased confidence, a positive shift in their perceptions in personal beliefs, and an increase in camaraderie with their peers. From that foundation Outward Bound schools today adhere closely to the experiential learning theory/tradition. OB schools' popularity grew in the post-war period; today OB schools can be found on six continents and in 60 countries.

Related work that focuses on the use of technology is integral to connecting the history of EL/ISL to today's learning reality. One of the earlier papers that introduced technologies and interactional trajectories was written in 2009 by Benford et al. "From Interaction to Trajectories: Designing Coherent Journeys Through User Experiences" developed a conceptual framework in which user experiences extend over time and space as journeys through virtual, augmented and actual realities [21].

Wearables or 'personal telemetry' in the context of amusement parks provide a tangible example of these 'interactional trajectories' and user experiences. Fairground: Thrill Laboratory (2006), by artist Brendan Walker attempted to bridge the thrills experienced by riders of high intensity roller coasters to connect with spectators. Amusement parks are designed for experience over spectating, yet countless parents, young children, the disabled, or those prone to motion sickness are relegated to the 'bleachers'. Offering opportunities for all stakeholders to participate in the fun required rethinking a 'riders only' experience. Thrill Laboratory "extended this by developing a wearable personal telemetry system that captured close-up videos of riders' faces and audio recordings of their talk (and screams), along with acceleration and heart rate data that might potentially indicate their levels of arousal, gathered from wearable sensors." The data were broadcasted on display boards for all spectators to enjoy as well as creating data souvenirs for riders that overlaid sensor outputs with video/photos from the ride itself. These data souvenirs find their way on social media, as emails to distant friends and family, and as a way for both riders and spectators to relive the relatively short experience, possibly even while waiting in line to ride again.

A further study of the Fairground: Thrill Laboratory uncovered how the technology recreated the relationships between the participants' different roles [22]. Riders became active performers who would commentate on their experience (as today athletes are sometimes miked/wired for a game). Spectators are offered an opportunity to engage in the event through up close video footage, live data streams and an audio 'play by play'. Ride operators now 'direct' the experience,

from managing the performances to interpreting data as well as most importantly operating the rides. In these new roles, spectators, riders and operators experience an 'old school' amusement park, in the sense that they are more closely connected, a phenomenon common in traditional fairground rides [22].

Another relevant study is the Personal Inquiry project [23]. That study explored how mobile technologies can be activated to support evidence-based inquiry learning in schools. One of the keys to the project was creating combined software for mobile and desktop use. Technology enhanced learning focused on individual, small group, and class interactions. Digital menus were provided as a framework and to guide students' learning inquiry processes; menus are also served for data collection and analysis that balance structure with space for students to perform work themselves. [10] The project results pointed to a conclusion that by "providing the freedom for personally-meaningful learning activities to be developed using the system, students are more motivated in their learning activities." [23]

The Out There and In Here Project [24] introduces a novel hybrid learning experience that is supported by a combination of new technologies. Simply stated, the project aims to link students in a field experience with other students located indoors; these two locations and the subsequent interactions support a diverse set of learning activities. Through intentional interactions/collaborations between both parties, students located indoors can 'participate' in field activities and students in the field can be supported and their work is extended by the indoor colleagues. The 2010 nomenclature of "out there and in here" has been updated today to include summit-basecamp education models, expedition-basecamp learning and hub and spoke learning. Regardless of the name, Coughlan et al. proposed that students working together in this way gave rise to new opportunities that synchronously combined field studies and research (analysis, extension and reflection) [24]. The real time synergy of 'explorers and researchers' allowed for more inquiry for both teams; field based students had quick access to data analysis, many times without leaving the investigation site. Students in the lab or classroom had 'access' to the field while also having the rich resources of basecamp. This combination of 'out and in' should provide both student groups with experiences that might otherwise be missed or previously unattainable. Some locations, due to logistics or safety concerns, would be out of reach or off limits to student groups. The 'out there in here model' allows for guided students to go further afield and with the assistance of basecamp to quickly dig deeper.

Coughlan et al. envisioned a student partnership built on the backbone of tabletop and mobile technologies in which the zone of proximal learning fuses technology and the two teams. "This project seeks to bring these abilities and experiences closer together, rather than segregating students' experiences to each side of the activity." [24].

VI. REDUCING TRAVEL - INCREASING PARTICIPATION

Using the summit-basecamp educational methodology, ISL

3.0 achieves the goal of reducing the number of students traveling. Summit-basecamp pedagogy simply refers to learning experiences that exist in the field for some students and in the classroom for other students: both groups communicate through and are supported by robust yet simple technologies. This pedagogy, while initially envisioned for 'field trip' excursions, as described in "Out There and In Here", can - with minimal augmentations - be applied to ISL projects, resulting in projected benefits for sending institutions, travelers, host communities, and the environment.

A pared down summit team can be supported by a robust basecamp (majority of students who stay behind). Non-traditional students, students with disabilities, and income restricted students historically travel less than their traditional, able bodied, economically endowed peers; but now through technology and organization into camps, 'in here' participants can have a leading role in basecamp operations and experience the full range of learning activities including those 'in-country'. Furthermore, participants from beyond the 'immediate class/course' may join for an appropriate window of action during the project, thus expanding basecamp beyond the original academic group. This inclusion enriches the talent pool at basecamp as well as the supports for field explorers. By opening up participation in base camp the reach of the proposed project extends, and the benefit to the host communities amplifies. By reducing the number of travelers, the strain placed on host communities for lodging and on the environment is lessened (both in transit and in country). It is worth noting that many of the locations that ISL projects typically visit are under environmental stress. Land degradation, deforestation and urban development put pressures on indigenous groups, wildlife and resources. ISL projects must take steps to reverse their historical roles in this dispossession.

VII. LEVERAGING TECHNOLOGY FOR TRAVELING & RECEIVING PARTICIPANTS

ISL 3.0's second goal leverages current technology to increase the project's impact on sending and receiving constituents. On-site, mobile technology allows for unfiltered photographs, voice recordings and videos from the summit team to basecamp. With relatively simple digital tools (smart phone, 360 camera, external microphone) summit participants can capture and send quality data to a shared platform. Platforms may be as simple as a common email address or scaled up to a Google Site where pages and tabs represent tasks, initiatives, or a parking lot for data. Basecamp members can then access and use those data as well as return research to support the team in the field. The summit team is responsible for capturing live data while the basecamp disseminates researches and creates action steps using the raw data from the summit team. This division of labor has real-time summit-basecamp benefits as well as post project outcomes.

Asynchronous technologies allow the interaction between teams irrespective of time zone changes and are not dependent on field site internet connectivity. Summit and basecamp teams can work independently of one another; furthermore

sub-groups within each camp can operate autonomously for their specific duration of the project. This feature is particularly useful if multiple courses/subjects are incorporated intermittently in the project's timeline. Asynchronous technologies may not allow for real time experience exchange, as illustrated in the amusement park wearables example but they do provide a robust and reliable platform when vast distances or complex challenges arise.

Pre, during and post project results include building 21st century skills (21st C): teamwork, communication and the compartmentalization required to integrate complex tasks. 21st C skills as defined by the Harvard Graduate School of Education (HGSE) include collaboration, teamwork and cooperation, trust, leadership and assertive communication [25]. These 'benchmarks' are core components in the ISL 3.0 model. Projects are designed to blend learning perspectives beyond summit and basecamp constituents; additional stakeholders include host participants/communities and the natural environment. These complex and multifaceted interactions mirror the requirements of corporations and employability of students beyond university.

The host communities' local context, knowledge and vision of the project, and the desire for a successful outcome mix with the perspective and ideas brought by the summit-basecamp students. This interaction between groups is intentional and provides needed parity for host members. Far from 'sherpas' that carry the load and know the way without GPS, host members communicate needs, plans and outcomes in the preparation stages, during the in-country field work and after the summit team returns home. As co-owners in the project, host individuals have access to the hardware, software, platform and raw data to use in their own disseminations, to evaluate the partnership and to prepare for a potential next iteration of partnership.

The ubiquity of quality cell phone cameras, relative ease and negligible costs of video editing software and inexpensive access to high speed data networks level the field for summit teams, basecamp operations, and local participants enabling broad, inclusive participation.

VIII. FINDING BALANCE

ISL 3.0 addresses the foundational imbalances found in today's service projects. A small, growth minded and agile summit team is supported by a larger, diverse basecamp with burgeoning expertise beyond what a single class can provide. Digital technology and communication facilitate authentic information flows (synchronous or asynchronous) that can be retrieved from a cloud platform actioned and returned to the cloud. Host partners benefit from each of the improvements; from planning to project reflections host partners are integral to the process and in collaborative ownership of the hardware, data, and platform. Despite all of this, the proposed ISL 3.0 model is incomplete. Additional components are envisioned to address other structural imbalances. A future improvement addresses 'intermediaries' roles. These intermediaries act as brokers between traveling and host participants and control the in-country itineraries. Those itineraries sometimes promote

'voluntourism' activities (zip-lining, rafting) and impose unrealistic standards from the Global North on host communities. Adventure activities and unrealistic expectations reinforce a neocolonial 'us vs them' mentality. Technology again will play a role in this transformation, possibly through low cost live translation applications or in the continued evolution of the sharing economy (housing, transportation and expertise). Other imbalances warrant consideration: at present ISL supports one direction travel, from the Global North to the Global South. Western institutions must prioritize parity and reciprocity that are embedded in project designs. A more complex future challenge requires ISL to pivot from providers of free unskilled labor and temporary aid to one that taps the real potential of western students and focuses on long term systemic change. For all its shortcomings ISL has secured its place on university campuses; technology, mobile learning and 'out there, in here' organization provides a 'people first' model, with a conservative fiscal and an ethical ecological response to these challenges.

IX. CONCLUSION

As ISL projects continue to grow in popularity across the Global North and as they are used to form citizenry in young adults, an ISL 3.0 model offers functional improvements by incorporating new technology with current pedagogy, technologies that benefit travelers, hosts, and the environment.

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