

Hybrid Expeditionary Service Learning Model

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***Abstract* - Service learning is an educational model that incorporates instruction, learning, service, and reflection. Many critics have highlighted weaknesses of service learning including its inability to address structural issues, build authentic relationships with communities, assess learning, and meet community goals. Expeditionary learning is a newer learning methodology that includes a focus on social justice, provides more time for building relationships and understanding community goals, and utilizes a portfolio-based assessment approach. Because Expeditionary Learning can address some of the weaknesses of service learning, we present Hybrid Expeditionary Service Learning -- a new service-learning model that employs an expeditionary learning design and embeds both the classes and service within learning expeditions. The paper highlights the rationale, benefits, and mechanics of how the expeditionary learning model reinforces service learning, and also how the service-learning model can reinforce expeditionary learning.**

Index Terms - service-learning, expeditionary learning, learning design, learning theory

INTRODUCTION

Service-learning is a learning approach and strategy that combines learning objectives, instruction, and reflection with service. Ehrlich and Jacoby define it as “a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities for reflection designed to achieve desired learning outcomes”¹.

There have been a number of critiques of service learning across its history. Randy Stoeker argues that service learning does a poor job of helping communities, sometimes causing more harm than good for various reasons². John W. Eby believes this is due to ineffectively addressing the structural needs of communities, highlighting the individualized and poor understandings students gain about social issues and social change³. Numerous proponents and critical supporters have maintained that service learning maintains institutional inequalities of power, failing to redistribute power, create authentic relationships, or meet the social change objectives of communities and community organizations⁴⁻⁶. Butin and Eggar believes it maintains power structures by being too politically left and, Butin adds, devoid of outcomes while being taught mostly to privileged students^{7,8}. Some critics focus on the burden on teachers or the logistical challenges of matching community cultures and need with student interest, cultures, availability, and change-over as well as semester schedules⁹⁻¹⁴. Still other critiques have uncovered cultures of white normativity in service learning programs^{15,16}.

Expeditionary learning is a project-based learning model in which students answer real world questions and problems through interdisciplinary, in-depth studies involving community and field research, expert visits, community trips, and projects. Students work in small, collaborative groups and build cumulative products such as community projects, presentations, performances, and portfolios¹².

The logistical challenges of service learning can be addressed within the service learning model itself^{9,10}. Expeditionary learning or components of expeditionary learning (EL) can be used to address the remaining challenges. Because EL involves more time in the community, embodies a strong social justice ethic, builds upon principles such as diversity, inclusion, and the environment, and includes an outcome-based assessment, EL has the ability to improve service learning programs, addressing earlier criticisms.

We present a learning model that reimagines and conjoins the service learning model and the expeditionary model – the Hybrid Expeditionary Service Learning (HESL) model. In the remainder of this paper, we will briefly explore the theory of this model and show an example of how it can manifest. First, we conduct a historical literature review of hybrid service learning and expeditionary learning models. Next, we present the learning theory including the rationale, mechanics, and benefits of combining the two models. Then, we show a short example of how HESL can alter a service learning or EL program. Finally, we conclude with generalized, potential benefits and future recommendations.

LITERATURE REVIEW

Reviewing the arc of service-learning history, practice, and theory in primary, secondary, and higher education is difficult for two reasons. First, most histories and reviews of service learning work and literature are Anglocentric and Eurocentric implying conception and birth in the United States or Europe, often ignoring the service learning work of minority communities within US history. In an effort to decolonize service-learning practice and history, we must recognize that service-learning at all educational levels was practiced around the world and began before John Dewey crafted his learning theories¹⁸⁻²⁰. The first difficulty is that the history of service learning practice in the global south is not well documented: most researchers start with John Dewey¹⁸. Second, researchers focus on the “learning” part of service learning when reviewing its history causing them to miss service-learning examples more focused on the “service” part². Third, there is no one definition of service learning; therefore, without a definition, it is hard to record its inception and growth around the world. Service learning suffers from a lack of a common definition, theory, methodology, or interpretational framework²¹. Much of this is due to a lack of an academic, disciplinary home in higher education, leading to poor dissemination of research and poor communication between researchers and practitioners.

When considering the various strains of service learning at all educational levels (volunteerism, advocacy, philanthropy, penalty, civic engagement, communitarian growth, social justice, and more), we find that “service and volunteerism [have] long been honored” as a communal ethic in the early history of indigenous people in the Americas²⁰. In China, elements of service learning were discussed and encouraged by Confucius (551-475 BC), the Sangha (community) aspect of Buddhism, and by Wang Shouren (1472-1529) who connected knowledge and action. In 1884 in East London in the UK, Samuel Barnett opened Toynbee Hall, a settlement

house². A settlement house is a house that brought rich and poor in the community together and provided educational, recreational, and other social services to the community. A few years later in 1886, Jane Adams opened Hull House, a settlement house in Chicago²². This movement spread in the US and the UK and peaked in the 1920s.

In the US, the institutionalization of service learning in higher education was aided by several government laws. Creating the land grant system in the US, the Morrill Act of 1862 and the second Morrill Act of 1890, which created historically Black land grant colleges, focused scholarship on the needs of the community combining work, service, and learning²³. The Hatch Act of 1887 and the Smith-Lever act of 1914 created agricultural experiment stations and initiated agricultural extension service beyond higher education campus boundaries, respectively²³.

Though John Dewey never used the term service-learning nor actually practiced it, in 1903 he developed educational ideas that are often cited as the philosophical inspiration for service-learning²⁴. In higher education, the cooperative education model is documented as starting at the University of Cincinnati in 1906, and the model took the education of students outside of the classroom. Cooperatives grew, stalled during World War II, and resurged after the end of the war^{25,26}. The first community junior college started in Joliet, Illinois also focused on relating learning more closely to the needs of the people²⁷. At the same time, apprenticeships and professional learning embraced a service-learning model especially in social work which has a natural focus on the needs of the community or its members²⁸.

In India, in the first half of the twentieth century, Gandhi promoted education, at all levels, that linked agriculture, work, practical education, and literacy and founded a community for that purpose saying real education lies in service. In Brazil, in the mid-twentieth century, Paolo Freire advocated and practiced a type of critical pedagogy that sought to free students, at all educational levels, to creatively and actively discover how to transform their world from its current reality²⁵.

In the US in the 1930s, the New Deal's programs like the National Youth Administration and the Civilian Conservation Corps tried to combine learning, citizenship, and service²⁷. In 1932, Myles Horton and Don West founded the Highlander Folk School in rural Tennessee. Modeled after Danish schools at the time, the Highlander Folk School linked adult education to the political, racial, and socio-economic problems of the South and Appalachia²⁵. It integrated Black and White students, was involved in the Labor movement in the 1930s and 1940s, and had a big hand in shaping one of the best examples of service learning in the history of the US - the Civil Rights movement.

Prominent civil rights figures passed through the Highlander Folk School -- Martin Luther King, Jr., Ella Baker, and Rosie Parks to name a few. In fact, Rosa Parks was arrested and jailed in December 1955 shortly after attending Highlander Folk School. The planning for the Student Nonviolent Coordinating Committee (SNCC), founded at Shaw University with university student, was conducted at Highlander Folk School². The Congress for Racial Equality and SNCC founded the Mississippi Freedom Summer which included Freedom Schools - sites of alternative adult and youth education including African history, culture, and academic skills as well as activities such as political role-playing and voter registration drives²⁵. In 1964 Mario Savio, a Freedom School summer school teacher, started Free Speech Movement at UC Berkeley in a similar style to Freedom Schools²⁵.

The 1960s were an explosion of non-institutionalized service learning. Students from UCLA and the new Native American Studies program at San Francisco State University helped lead the

occupation of Alcatraz for a year and a half². The Movimiento Estudiantil Chicano de Aztlán was formed by Chicano students in 1969 at UC Santa Barbara². Using teach-ins and mixing classes with activist engagement, students with professors fueled anti-war, anti-poverty, anti-sexism, and anti-racism movements. Using the framework that the goal of service learning is social change and not education, Randy Stoecker finds “they produced the Voting Rights and the Civil Rights Act in the mid-1960s. They helped end a war. They helped amplify women’s voices for control over their own bodies, justice in the workplace, and equality in the polity. They helped transform our thinking about our relationship with the rest of nature”².

At the same time, in the 1960s, many African nations gained their independence and focused on the development of their countries in all areas including education. The first president of Tanzania, Joseph Nyerere, called for a new type of education (at all levels) that gave personal and social responsibility to the students to improve the life of their community and to “equip [them] to make decisions to improve their society”²⁹. Nyerere’s educational philosophy affected many African nations as they were gaining freedom and trying to determine how to improve the education of their people. This includes countries, like South Africa, that won their post-apartheid freedom much later²⁹. Other countries, like Nigeria, created a youth service corps. Nigeria created the National Youth Service Corps in 1973 with the goal of youth service aided in national and community development. In fact, in many low-to-middle income countries, the vast majority of departments at the university incorporates development into its work because of its relevance. Sociologists talk about the sociology of development, anthropologists study people to uncover their needs and desires and to measure the effects of development, economists talk about the costs of development and ways of reducing the price, engineers work on engineering development projects, etc. Engineers without Borders provides an example and a comparison to the US. In the US, most Engineers without Borders groups prepare and implement projects in other countries. In South Africa, most Engineers without Borders groups do projects inside South Africa.

Back in the US, the government followed the explosive service-learning work of various student movements in the 1960s, by establishing the Peace Corps in 1961 and Volunteers in Service to America (VISTA) in 1964. In 1978, the National Center for Public Service Internships and the Society for Field Experience Education, which were both founded in 1971, joined to form The National Society for Experiential Education. Campus Outreach Opportunity League and Campus Connect started in 1984 and 1985, respectively, facilitating service programs at the college and university level. The National Association of Service and Conservation Corps and Youth Serve America were both founded in 1985 opening up service opportunities to youth, while the National Youth Leadership Council, founded in 1982, focused on leadership of youth³⁰.

The resurgence of service learning and the institutionalization of service learning continued into the 1990s. The National and Community Service Act of 1990 supported service learning through grants at the same time that Learn and Serve America was established. In 1993, AmeriCorps and the Corporation for National Service were created under the National and Community Service Trust Act which also united Learn and Serve America, SeniorCorps, VISTA, and AmeriCorps into one independent federal government agency²⁷.

Researchers point to the scholarship of John Dewey as an early theoretical inspiration and framework for service-learning. Dewey connected knowledge to experience through active engagement with the world and reflection on the world³¹. One objection to his ideas is that this type of education leads to indoctrination and loses the neutrality valued by the logical positivism

school of education²⁸. However, Dewey never practiced service-learning with students at any educational level. Service-learning also rests on the research of Kurt Lewin who did practice service-learning in the university context. Lewin introduced the idea of action research and created a triangle to show the interdependence of research, training, and action to produce social justice³². Social justice was infused in his research and all of his teaching and learning as all corners of the triangle affect each other.

Beyond Dewey, the constructivism of Piaget has influenced service-learning as service-learning can be viewed as a constructivist approach to learning. Critics have said that the constructivist approach favors breadth of learning and prevents in-depth learning since it takes a longer time to gain new knowledge and reinforce it through reflection when compared with a passive approach³⁰. Critics have also said that a constructivist approach can cause learners to move further away from reality because they are always creating new knowledge built on previous knowledge in isolation³⁰. In cognitive learning theory, service-learning also rests on the theories of “reflection-in-action” from Donald Schön and the experiential learning model from Ron Fry and David Kolb^{33,34}.

Service-learning also rests squarely on critical pedagogy and feminist pedagogy which emphasize the social location of the learner, the systems in which they sit, critical reflection, critique of social systems, and transformation and change of those systems³⁵⁻³⁷. In the spirit of critical and feminist pedagogy, the use of participatory and community-based or community-led methods in service-learning have grown at all educational levels³⁸⁻⁴¹. Kathleen Flecky cites recent developments in service-learning theory include the pedagogy of engagement, the transformation model, and service-learning as post-modern pedagogy²⁶.

Robert Sigmon⁴² describes four categories of service-learning across educational levels.

- SERVICE-learning where the service goals are primary,
- service-LEARNING where the learning goals are primary,
- service learning where the goals are separate,
- service-learning where the service and learning goals are equal, relate, and reinforce each other.

Across all educational levels, there are three dominant models of service-learning today²⁸. The philanthropy model has been critiqued for reinforcing hierarchy, privilege, and inequality²⁸. The model of service-learning as civic engagement aligns with the view that the goal of education is to raise the next generation of civic-minded leaders. This civic model has been critiqued for a simplistic integration of service and learning²⁸. The third model is the communitarian model which posits that learners are social beings who seek community. The communitarian model has been critiqued for being very theoretical and not very applicable²⁸.

In higher education, service learning in engineering is seen as a way to bring socio-constructivism into engineering education. Due to dualist understandings of teaching and learning, service learning in engineering has become a way to align teaching methods to the learning styles of engineering students. In 2006, this alignment led to the founding of the *International Journal of Service Learning in Engineering, Humanitarian Engineering, and Social Entrepreneurship* (IJSLE) which is still active⁴³. Today, Engineering for Change includes a global educational page listing 50 different higher education institutions with engineering programs containing a service-learning and activist element⁴⁴. Engineers Without Borders-USA, founded in 2001, employs a

service learning model, incorporating teachers into service projects and bridging the gap between the classroom and the real world by giving students real experience building engineering projects in low-to-middle income countries⁴⁵⁻⁴⁷. The gender equality that exists within higher education, engineering programs, even in upper-income countries, suggest a possible area of social action that can be addressed by service learning in engineering^{48,49}.

Expeditionary learning is a project-based learning model, at all educational levels, where students conduct in-depth, multi-week studies in the world. Expeditionary Learning (EL) has a shorter history than service-learning. Grown out of Gordonstoun, a secondary school in Scotland, Outward Bound, the first expeditionary learning program, was founded in England in 1941 by Kurt Hahn^{50,51}. In 1962, Charles Froelicher and Joshua Miner brought Outward Bound to the United States⁵⁰. In 1991, Outward Bound partnered with the Harvard School of Education to write a winning proposal, receiving start-up funding from New American Schools for the EL school model^{51,52}. With renewed funding from New American Schools in 1993, Outward Bound launched the EL model in 10 pilot schools in Denver, Boston, Portland (ME), Dubuque, and New York City.^{52,53} Today, after many more funding awards, books, open-sourced EL curriculum, and positive evaluation studies of the EL model at various schools, there are 152 schools implementing the EL model involving 60,000 students in 35 states^{53,54}.

It is difficult to find any work on the use of EL in engineering, especially in higher education where students practice engineering more explicitly. MacLeod encourages educators at all educational levels to engage in EL in engineering education, without showing examples⁵⁵. Other engineering education researchers borrow elements of EL to use in problem-based learning, but do not actually implement EL in engineering education⁵⁶⁻⁵⁷. One university center employed EL for the professional development of faculty, doctoral students, and post-doctoral researchers as educators, not as students⁵⁸⁻⁵⁹. In the study, many different learning methodologies were used, and only 5 of 60 doctoral students and 2 of 37 post-doctoral researchers participated in EL for professional development⁵⁸.

In EL for all educational levels, the multi-week, in-depth studies are called expeditions. The expeditions involve rigorous content, active learning, community field research, guest expert visits, community field trips, guest speakers, and fieldwork that culminate in authentic student products, portfolios, presentations, and performances. Expeditionary learning builds upon constructivist and socio-culturalist theory (socio-constructivism) which posits that students construct knowledge and skills and that human activity, mental functioning, and learning emerge as people come in contact with particular places and spaces, respectively⁶⁰⁻⁶². Therefore the environment affects and impacts the learning outcomes⁵². Knowledge and skills are dynamically co-constructed by teacher and fellow students in learner-centered spaces that positively impact the learning; learning becomes a social process⁶². Students construct knowledge and skills in the context of the real-world use of those skills through participatory projects, apprenticeships, working with experts, and field work. Expeditionary learning is “defined by a strong commitment to social and environmental justice”⁵¹. The expeditionary model is founded upon ten learning design principles: the primacy of self discovery, having wonderful ideas, the responsibility for learning, empathy and caring, success and failure, collaboration and competition, diversity and inclusion, the natural world, solitude and reflection, and service and compassion.

The research literature does not contain examples of any hybrid service-learning and expeditionary learning approach. The only examples of combining the two approaches exist at the

institution level. There are many EL schools that have service-learning programs or courses inside the school because service, learning, and reflection are all components of expeditionary learning^{52,63}. We found no project-level or course-level service-learning that integrates expeditionary learning at the same time.

HYBRID EXPEDITIONARY SERVICE LEARNING

All the components of service learning – learning, service, and reflection – can be found in the EL model. Reflection (and solitude) and service (and compassion) are two of the ten principles of EL. The third component of service learning, the non-service “learning,” usually happens in the classroom. In the EL model, learning can happen in the classroom, but more often happens outside the classroom, in context, in the world. This added contextual learning with the community allows more time for students to build authentic relationships, truly understand the social structures and dynamics communities inhabit, create community projects which can be assessed as part of a portfolio, and listen and learn about community needs, objectives, racial and social trauma, assets, and culture.

Because of the overlap of learning, service, and reflection, service learning is contained fully inside of EL. This interpretation matches with the observation that many EL schools have service-learning programs within them. The opposite is not true; EL is not contained fully inside of service-learning because EL is more comprehensive than service-learning. The overlap between service-learning and EL naturally allows the creation of a hybrid model which can use the best parts of each model in various ways.

The Hybrid Expeditionary Service Learning (HESL) model combines the two models in order to strengthen the constructivist experiential learning inside the service-learning model through socio-constructivist expeditionary learning. In this paper, we introduce four variations of the HESL model that provide enhanced learning beyond the service-learning model alone (Table 1).

TABLE 1
HESL MODEL VARIATIONS AND COMPONENTS

HESL	Expeditionary & Service Elements			
Type	Lecture→Expeditionary Learning	Course Structure→ Expeditions	Reflections→ Expeditionary Co-reflections	Expositions→ Service-based Expositions
HESL-1	X			
HESL-2	X	X		
HESL-3	X	X	X	
HESL-4				X

In the HESL-1 model, expeditionary learning enhances service-learning by transforming classroom learning times into expeditionary learning trips out into the known world. These pre-service expeditionary learning trips serve two purposes. First, following a socio-constructivist approach, the pre-service expeditionary learning trips reinforce the learning and build new connections by embedding the learning in context. Imagine, a community or expert demonstration and skills-based tutorial in the field or community, where students have the opportunity to try and fail before course service projects ever begin. Second, when it is time to engage in the service project, the students should be further along skills-wise and confidence-wise due to the expeditionary learning in context, before the service project or service work begins. This allows students to be more productive, confident, and persevering in the service project; moreover, the prior experience may increase the chances that service goals are achieved.

In the HESL-2 model, while service projects are in motion, expeditionary learning enhances service-learning by structuring the classroom learning through expeditions - multi-week deep dives into a skills focus or subtopic area that include community or field visits, expert visits, tutorials, community workshops, community or field research. This works best for year-long service-learning courses; however, it is possible to divide a semester service-learning course into two expeditions. In addition to the benefits of HESL-1, HESL-2 provides a mastery-based scaffolding for the learning of the skills needed for the service projects. It allows students the time to focus on one area or skill, learn it, retain it, imbibe it, before diving into the next component of the service project. It does require more work from the professor. The benefit is the helpful structure provided to students new to service-learning, the particular type of service, or the topic of learning.

In the HESL-3 model, the reflections of service-learning are conducted in context in the field, out in the world, in community. Contextual reflections have the added benefit of immediately accessible memory because students are recording their reflections in the immediate aftermath of service work. Immediate reflection allows students the benefit of visibly reviewing the work they did, and receiving the visual, tactile, auditory, and olfactory reminders of the service work that was done that day, how they felt, what they thought, and their interpretations of success or failure. They can also immediately theorize what they might do differently while examining the fruits of their service work. Immediate, in-context reflection does not preclude further reflection elsewhere after more processing. Further reflection can always still occur.

HESL-3 goes beyond contextual reflections to mutual learning through co-reflections. Because students are reflecting in community, in the field, and out in the world, they are reflecting with and alongside the community. This creates space not just for reflection and sharing between students, but also between the entire group of community members and students. Mutual learning occurs, giving community members increased time to understand the skills and experiences the students bring while the students have more time to understand the community perspectives, traumas, needs, assets, systems, goals, barriers, and culture. Mutual learning has many benefits. Mutual learning increases the likelihood of expeditionary work that addresses community needs. Mutual learning also decenters the student through bidirectional learning: everyone is both learning and sharing. Mutual learning, thus, works to balance power or move closer towards equitable power sharing.

In the HESL-4 model, the direction of enhancement is reversed. Expeditionary learning is enhanced by service-learning when the artifacts of student expeditions and expeditionary learning are transformed into service projects and service outcomes themselves. At the end of every

expedition, students have developed presentations, performances, projects, portfolios of work, or products. These projects and products can be co-created service projects or outcomes that are displayed for the community to see at the exposition of an expedition. There is nothing in the EL model that prevents the end-of-expedition products and projects from being service projects, so this can naturally happen. HESL-4 explicitly guarantees that they are co-created service outcomes and projects, transforming pure demonstrations of student learning to demonstrations of community and student co-service and co-learning, or service-learning. The value is that the equal benefit of service and learning in service-learning is carried all throughout the EL model, not just earlier in an expedition, but all the way through to the end of an expedition to artifact creation and demonstration at the expositions. The community then experiences (and creates) the benefit because student EL projects also serve the community.

When looking at the various HESL models, one may ask, why do we not call HESL-1, HESL-2, or HESL-3 EL, especially if we use all three in a program or project? Remember that EL is more comprehensive. Expeditionary learning has an explicit social or environmental justice component whereas service-learning does not. Expeditionary learning has ten principles that undergird its design and implementation. Also EL involves the creation of student artifacts which demonstrate learning - products, portfolios, presentations, performances, etc. Neither HESL-1, HESL-2, nor HESL-3 require those artifacts, the following of all ten principles, or a focus on social or environmental justice. The HESL-1, HESL-2, and HESL-3 models are ways of introducing components of EL into service-learning without fully converting it into an EL program. The HESL-4 model is different because it can be called EL. It is an EL model in which the student artifacts are explicitly made into service projects strengthening and reinforcing the service principle of EL and benefiting the community.

VISUALIZATION OF HESL MODELS

Any service learning course or program can be strengthened by incorporating more of the social or environmental justice components of EL, the ten EL principles, or the student artifact creations from EL without greatly affecting the logistics of class sessions. Therefore we will not focus on visualizing the effects of embedding justice, EL principles, or artifacts in service learning. We will focus on the HESL-1, HESL-2, and HESL-3 models.

Table 2 depicts the first six sessions of a generic service learning class – two lectures, a workshop, lab, service project, and an exam. Because the specific components are not important, it is best to focus on how this example might change using the HESL model. Table 2 also depicts HESL-1 applied to the same program. Now the lectures are field trips and community visits where students hear from community experts; the classroom activities become community workshops; the service project turns into a community service project (not just a student service project done in a community); and the knowledge-based exam converts to a skills-based field assessment or assessment in the community. The HESL-1 Example Program demonstrates how any session of a service-learning program can be improved by contextualization in the community or field and doing the work alongside the community building better relationships, connection, and understanding.

TABLE 2
Comparison of Components of a Traditional SL Class and a HESL-1 Class

Traditional SL class	Lecture 1	Lecture 2	Workshop Activity	Lab	Service Project	Exam
HESL-1	Field Trip 1: Community Expert	Field Trip 2: Community Visit	Community Workshop	Community or Field Research	Community Service Project	Skills-based Assessment in Community or in the Field

Table 3 depicts an example short course in ergonomic design.⁶⁴ Focusing on how HESL-2 transforms this example course, we observe that the course can be reorganized into two 6-week expeditions or deep dives—ergonomics of the workplace and ergonomics for seniors (Table 4). The HESL-2 example syllabus creates separate artifacts and service projects for each focus – the first focus on the workplace and the second focus on seniors. The benefit is that the knowledge gained from each expedition or focus can still be used in the succeeding foci or expeditions. So the information from the Americans with Disabilities Act (ADA) expert and the Occupational Safety and Health Administration (OSHA) expert provide information that can still be applied to ergonomic design for seniors in the workplace or seniors with disabilities. The 6-week foci provide more opportunities for deeper learning, specialization, and connections. Additionally, the HESL-2 example syllabus (Table 4) utilizes HESL-1 components to enrich the service learning through EL components such as community research, field trips, expert visits, and community workshops. The students and communities work on the community service projects throughout each 6-week period, presenting the outcomes at the end of the 6-week focus.

TABLE 3
SYLLABUS FROM EXAMPLE SHORT COURSE IN ERGONOMICS

Week	Topic
1	Anthropometry
2	Upper Extremity Cumulative Trauma Disorders and Seated Workplace Design
3	Manual Material Handling
4	NIOSH Work Practices Guide
5	Metabolic Load and Heat Stress
6	Ergonomics and the Senior Population

7	Vibration and Noise, Hearing
8	Controls and Displays, Lighting
9	The Americans with Disabilities Act
10	OSHA involvement in Ergonomics, Final Project Presentations
11	Final Project Presentations
12	Final Exam

TABLE 4
EXAMPLE HESL-2 SYLLABUS FOR SHORT COURSE IN ERGONOMICS

Week	Expedition	Topic
1	Workplace Ergonomics	Anthropometry, Americans with Disabilities Act Expert Visit
2		Upper Extremity Cumulative Trauma Disorders and Seated Workplace Design, Trauma-responsive Field Research
3		Manual Material Handling, OSHA Ergonomics Expert Visit
4		NIOSH Work Practices Guide, Ergonomics of Lifting Field Trip
5		Metabolic Load and Heat Stress, Community Workshop
6		Project Presentations and Student Artifacts
7	Ergonomics for Seniors	Ergonomics and the Senior Population, Community Hospital Trip & Research
8		Household Ergonomics for Seniors, Nursing Home Visit
9		Vibration and Noise, Senior Hearing, Auditory Expert Visit
10		Controls and Displays, Lighting for Seniors, Community Research
11		Ergonomics of Senior Automobile Access, Community Workshop
12		Project Presentations and Student Artifacts

Lastly, Table 5 shows an example service learning program where a reflection occurs outside class after a service project session. Table 5 also shows an example program where reflection or reflection sharing is done in class. HESL-3 converts the in-class reflection to a co-reflection in the field with community members. HESL-3 also transforms reflection outside of class to co-reflection in the field with community members after all expeditionary sessions. Notice the HESL-1 elements incorporated into HESL-3 so that each class session is now in the community with an opportunity for post-session co-reflection. Thus, HESL-3 actually increases the amount of reflection students and community members experience and thereby increases mutual learning and better understanding of social structures and dynamics as well as community culture, needs, and goals.

TABLE 5
Comparison of Components of a Traditional SL Class and a HESL-3 Class

Traditional SL class	Lecture 1	Lecture 2	Workshop Activity	Lab	Service Project (Reflection outside of class)	Exam
Traditional SL class with reflection in class	Lecture 1	Lecture 2	Workshop Activity	Lab	Service Project	Reflection and Sharing
HESL-3 with co-reflection session	Lecture 1	Lecture 2	Workshop Activity	Lab	Service Project	Community Visit: Co-reflection
HESL-3 with embedded co-reflection	Field Trip 1: Community Visit + Co-reflection	Field Trip 2: Community Visit + Co-reflection	Community Workshop + Co-reflection	Community Research + Co-reflection	Community Service Project, Co-reflection	Skills-based Field Assessment, Co-reflection

CONCLUSION

In this work, we briefly reviewed service learning, its history, and its theory as an educational model that includes learning, service, and reflection. We also discussed the weaknesses of many service learning experiences including lack of assessment, focus on the student over the community, white normativity, logistical burdens on teachers, the maintaining of power inequalities, and an inability to address structural issues while meeting community members' goals.

We also reviewed the relatively newer history of expeditionary learning (EL), a project-based educational model in which students learn through expeditions – multi-week, deep, focused studies

on a particular topic. Expeditionary learning is built upon ten learning design principles and has a focus on diversity, inclusion, justice, and nature. Expeditionary learning also uses portfolio based assessments in which students develop artifacts such as products, presentations, performances, or projects by the end of every expedition.

Because EL naturally addresses some of the weaknesses of service learning, we proposed strengthening service-learning through the addition of expeditionary learning elements in a methodology called Hybrid Expeditionary Service Learning (HESL). Expeditionary learning naturally encompasses service-learning but also adds a social justice focus, a focus on the environment, multi-week thematic deep dives into an area of study, and in-context learning in place of the usual classroom learning, like field trips, community trips, community expert visits, community or field research, field experimentation, etc. In the HESL-1 model, the classroom learning portion of service-learning courses is transformed into expeditionary learning trips. The HESL-2 model goes further by structuring the service-learning experience in multiple expeditions – multi-week deep dives into particular foci or themes which include expeditionary trips and expert visits. In the HESL-3 model, the reflections of service-learning are conducted in the community or field, in the context of the service in the real world. The HESL-4 model reverses the interaction, strengthening expeditionary learning by necessarily transforming the artifacts (presentations, projects, performances, portfolios, products) at the end of each expedition into service projects.

The HESL model is a theoretical model, and practical questions still remain. Can expeditionary learning consistently strengthen service learning (as proposed in the HESL-1, HESL-2, and HESL-3 models)? And can service-learning consistently strengthen expeditionary learning (as proposed in the HESL-4 model)?

We believe the answer to the first question is yes. Because of the socio-constructivist design of EL, the learning is better embedded thanks to its social contextualization. We believe the answer to the second question is also yes, as service project assessments provide a two-way feedback system, learning not only from a professor's assessment but also from the community who will use or benefit from the project.

Further work remains to answer these questions in practice. The remaining questions are questions of efficacy (does the model work, is learning achieved using the model), effectiveness (how well does it work, how much learning occurs through the HESL model), and comparison (does it work better than service learning alone or, in the case of HESL-4, does it work better than EL alone). Further work must include learning efficacy studies of the model in practice, learning effectiveness studies, and comparative evaluation studies. We have already begun the work of applying the HESL model to an actual learning-design project and plan to report the results to the wider service learning community⁶⁵.

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