Learning through Shared Mental Models: Experiential Learning, and Transaction Costs in a Research Institute

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Abstract

In this Report on Practice, we explore both the process and an approach of engaging Undergraduate Students in research using a Research Institute setting. Drawing from our experience we conceive of the learning process as a series of interactions and transactions that face the same impediments as any transaction or interaction The approach, we report on is one rooted in the reduction of the transaction costs that exist in the process of learning for students and for faculty. We develop both our understanding of this reality and report our approach and the programs we developed to engage students in economic research focused on public policy questions.

Keywords: experiential education, undergraduate research, student training

1. Introduction

Ideas matter and the ways that ideas are communicated can produce, common understanding of the world often call shared mental models, or not (Denzau and North, 2014). Our experience with an apprentice form of experiential education suggests that well designed and monitored experiential learning systems can result in students gaining shared mental models and the resultant reduction in the friction that occurs in interactions and make those interactions more difficult, for economists this friction is commonly referred to as transaction costs. We further find that scaling up from a few students to many is difficult, but possible.

We begin by observing this is primarily a paper about pedagogy, although we hope the lessons are somewhat more broadly applicable. As is usual for pedagogical papers about experiential education, we describe the value, approach, and pitfalls. We are firmly convinced that experiential education has the potential to be a significant influence in the education of students and have endeavored to provide our students with opportunities to learn by doing, and, in the process of doing, to fully explore the material and competing explanations of social phenomena.

Our approach and understanding of the process of experiential learning leaves us relatively far afield from those who generally advocate experiential learning in higher education. Rather than immersing a student in some experience and then encouraging the student to draw lessons from the experience that they can then apply to other circumstances (which may well be a valuable experience), we prefer to structure how knowledge and skills are obtained. We focus on particular learning outcomes that are connected to the experience the student is having.

Our approach is fundamentally one rooted in the reduction of the transaction costs that exist in the process of learning for students and for faculty, although we did not necessary conceive of it being explicitly so at the time. As Political Economists it is not surprising that such a view the world would be present in our approach this way even if we are not necessarily cognizant of it explicitly.

We believe that the primary transaction cost is rooted in the status quo bias that nearly every student and teacher enter the classroom or learning experience with, and that any change will result in costs of moving from that status quo. Learning requires both the Student and the Teacher to move from a state of inaction where information is stagnant and unmoving to a state where information is flowing, and where students are actively attempting to learn. We address primarily the Student and assume, perhaps naively, that teachers, particularly good teachers are motivated intrinsically by a desire to teach. Regardless, moving teachers out of the status quo

of no change to approach is an important subject, just not the subject to this paper.

Drawing from our own experience, we conceive of the learning process as a series of interactions and transactions that face the same impediments as any transaction or interaction.

For us the set of interactions that lead to student learning are vulnerable to a variety of transaction costs that can bog down the learning process and ultimately prevent learning from occurring. The status quo bias we discuss above is the most important but like any transaction/interaction others emerge quickly as you observe the teaching and learning interaction. The lack of a common language, common understanding of core principles, different learning styles, mismatched goals and objects, across disciplines are all readily observable in the learning process, and to our mind represent some of the transaction costs of the learning process.

A desire to better facilitate learning makes reducing those transaction costs an important bordering on essential action for any teacher.

1.1 The Challenge: Designing Institutions

Just as ideas matter, so do institutions. Some economists we know are fond of Hayek's (DATE) discussion of institutions that emerge, that are the "unintended consequences of human action." In our work we did exactly the opposite--we designed an institution with the intention of producing a particular set of outcomes. What we designed was a learning approach within a non-profit research organization where we employed students as an integral part of the organization.

Our goal was to involve students in everything we did—research, outreach, development, communications, and operations. We started with six students, and, at our peak, we were managing twenty full-time staff and over 70 students. Our policy research focused on energy, environment, and public lands. We also produced an introduction to American Government online course and a full set of curricular modules for K-12 education on entrepreneurship. What we describe here covered ten years of collaboration and experimentation, and we hope success.

First some history. Our collaborative relationship began in 2007 when we paired as research assistant and faculty member. From that first assignment a complex and eventually large program of training students developed that persisted through the next decade.

The mechanics of our approach changed and, we believe, improved over the course of the decade (largely through trial and error). We believed that traditional university education lacked the intense focus that comes from being deeply immersed in research and the other activities of a vibrant research organization.

Our perspective is that we could provide students an opportunity to develop understanding and knowledge and to meaningful apply that knowledge outside of the classroom with guidance and support. Our intuition although unexpressed at the time was one where students faced large transaction costs that were preventing them from applying knowledge in the real world, and those costs were exacerbated by the institutional approach of the university.

We detail the institution that we developed through a system of trial and error and constant evaluation in a later section. But we first explain how our approach fits and does not fit with the kinds of experiential education conducted in most universities. The single starkest difference in our approach from more traditional approaches was a focus on integrating the learning objectives (although we never called them that) throughout all parts of the experience, largely through reducing the cost of arriving at the desired learning.

2. Understanding Experiential Education

Since John Dewey's *Education and Experience* (Dewey, 1938), experiential learning theory has exploded throughout pedagogical research. While all learning is experiential in some sense (in that learners incorporate knowledge according to their own experience), experiential learning theory explores learning outside traditional and abstract methods of teaching—lectures, textbooks, etc. Instead, experiential learning generally occurs through hands-on, real world experiences. Joplin (1981) lays out eight characteristics that define experiential learning: it is student rather than teacher based, personal, oriented towards process, self-evaluated, focused on holistic understanding, organized around experience, perception rather than theory based, and individual.

Although experiential learning has been viewed as occurring outside of contexts in which a student interfaces with teachers, experiential education does not necessarily require the absence of some limited teacher mediation (Moon, 2004, pp. 76-77). In fact, experiential education is now prolific throughout undergraduate curricula (Katula & Threnhauser, 1999) (Kolb 2014). We are most interested in the two most common approaches--undergraduate research and internships or work experience programs.

2.1 Undergraduate Research

As experiential education in general has proliferated, undergraduate research has followed. Some universities still focus research opportunities exclusively on high performing students while others have built undergraduate research directly into the curriculum and institutional culture (Merkel, 2003). Even some two-year colleges have embraced undergraduate research (Perez, 2003). Most resources put towards undergraduate research are focused on the sciences, mathematics, and engineering, with substantially less available to the social sciences and humanities (Seymour, Hunter, Laursen, & Deantoni, 2004). Our initial interest in a program of undergraduate research was developed in light of this stark contrast and the potential value we saw.

The potential value of undergraduate research to social science students has been well documented. Craney et al. (2011), for example, asked undergraduates who had participated in social science research to rate the potential benefits of undergraduate research from one to five, depending on how strongly they agree that undergraduate research gave them that particular benefit (five being the best). Of the benefits, the following received an average rating over four: develop communication skills, formulate research questions, contribute new knowledge to society, strengthen interest in advanced study, and improve chances of admission to advanced study. The remaining benefits all rated over a 3.5: develop problem-solving skills, earn prestige, provide an opportunity to publish, provide a realistic career option, and improve employability after college. Craney et al. (2011) provide evidence that mentor-protégé relationships are critical to the undergraduate research experience that confirms previous work on the subject. These results are largely replicated in a survey reported by Lopatto (2010).

2.2 Internships and Work Experience

Work-based and experiential learning research have not always been explicitly linked, but their connection is clear (Chisholm, Harris, Northwood, & Johrendt, 2009). The value of linking academic knowledge to workplace activity is multifaceted (Lester & Costley, 2010). Problems and experiences encountered on the job allow students to apply and contextualize previously abstract concepts. Students learn new skills through work and may develop novel solutions to common work problems using their formal education background. That knowledge generation may even leach back to academia via research interests based on workplace experiences.

Much of the work-based learning literature focuses on partnerships between corporations and universities to provide ongoing training (or accreditation and advice for existing trainings) for employees. Many of the same principles, however, apply to internships within undergraduate curriculum. Good internships encourage students to take the critical thinking skills developed in their classes and begin to use them outside the context of the classroom (McCormick, 1993). Internships that allow students to work with some autonomy offer better post-graduate employment opportunities, reduce the "reality shock" associated with entering the workforce, and help young professionals to conceptualize their own workforce identity (Taylor, 1988). Empirical work has confirmed that students who do internships during their undergraduate degrees are both better prepared for post-graduation jobs and enjoy those jobs more (Gault, Redington, & Schlager, 2000).

2.3 Exploring Experiential Education

Most of the discussions of experiential education, undergraduate research, and most internships and work experience programs lack specific learning outcomes and often the experience itself is viewed as the outcome [reference?]

We are sympathetic to the potential value of encouraging students to have these sorts of experiences. Indeed, our initial thinking was largely in line with these approaches as one of us managed the government internship program at his institution for more than twenty years, but experience with students, and substantially more reflection left us with a nagging set of concerns about whether the return on investment, for both students and institutions was worth the time invested in the internship. Especially when the hands-off experiential approach was allowed to dominate.

The question of whether these programs, including our own early efforts, were actually educating students, was and became increasingly concerning, especially as the number of students we worked with grew over time. Our concern over this issue developed as we were moving from small group training and co-working to substantially larger groups of students. What seemed to naturally flow with a group of six or eight students began to break down with fifteen or more without strong, purposeful action. In short once the number grew the transaction costs of identifying the needed learning and working with students individually to achieve that learning outpaced our abilities. As we recognized this problem and began to see how the impediments (transaction costs) were stymying our attempt to ensure that every student we engaged with received the sort of learning experience our first students had, we began to think about how to improve our approach, and our first instinct as it so often is

with political economists was to reduce transaction costs, even without articulating our goals as such.

Thus, we hope our experience developing what we call the Institute of Political Economy approach to student development illustrates the power of engaging in experiential education, based on the development of shared mental models, rather than the ill-defined notion of simply allowing students to "experience" something, to reduce the transaction costs that quickly develop in the teaching learning experience and lead to better outcomes.

This focus on building shared understanding allows teacher and student to collaboratively work through the experience, and costs, of experiential education is what predominately differentiates our approach in this area, and what we believe lent a substantial increase to the return on the investment in experiential education for students, our funders, and ourselves in the process. It is our belief that from this process our students have become better policy analysts, are better prepared to enter the workplace, and have a shared mental model for implementing and evaluating public policy.

3. Developing a Pedagogical Model

One of the chief goals of the pedagogical model we detail below was to develop for students a common understanding and way of approaching the world that might generally be called political economy or more specifically in our case, public choice economics. Our model is not one that we simply created from the whole cloth of an academic understanding, rather it is the result our experience in working closely with students over nearly a decade collaboratively, and our best understanding of what students needed to learn and how they might best learn it.

We have often described this model as being most similar to the apprenticeship model, where deep immersion into an occupation molds the apprentice by providing a common language, understanding, skill set, and ultimately metric for success. These models, which are well understood in many applied and technical fields, have been largely ignored in the social sciences.

One of the first lessons we gleaned from our experience, and one that would be relearned over and over again as the program grew, was that maintaining the shared language, approach, and understanding, was essential to student success. This lesson was one of our primary lessons in working hard to reduce the transaction costs of the learning experience, a common language and understanding of approach and basic principles meant that energy that might have to be expended in every learning interaction on these sorts of definitional and approach discussions was eliminated and students themselves became the single best teachers and guardians of the shared language and approach which greatly reduced the transaction costs in this area. This lesson was especially true as the program increased in complexity, and as others were brought in to help support the students, and transaction costs grew.

We applied a particular filter in our selection of students to work closely with in the apprenticeship program we were developing. Rather than screening for agreement with our world view, approach, or filtering on a specific area of knowledge, we instead asked key questions about each student we interviewed. We first asked were they smart, and by this we didn't necessarily mean, what was their GPA. We were interested in working closely with students that had a native curiosity about how society functions and had the intellectual firepower to use the scientific method to conduct high quality research.

The second question was to ask if they were interesting. We wanted students that had something that made them unique, interesting to converse with, and with whom we would enjoy spending many hours each week.

Applying our standard rule of every student needing to be smart and interesting led us to work with a diverse set of students, many of whom had almost no background in economics, public policy, and many who had divergent views on a wide variety of issues. It is against this background of smart, motivated, curious, and, we believed, natively interesting students that our approach to experiential education developed. Here again our approach was one that sought to reduce the transaction costs, our belief was that natively smart and interesting students would require less motivation to leave the status quo no action and make the learning we desired more likely to occur. And as will become clear below our understanding of developing shared mental models emerged from working closely with these students, who were less stuck as the no action status quo than our experience suggests other students often are.

3.1 The Institute

Our collaboration which began 2007 started within a long run institute located within an academic department and public policy focused research projects. This Institute, which has been funded by private donations, government grants, and research contracts, has a long history of hiring master's students to help conduct the public policy research. In 2008-09, there were few available students in the Master of Political Science degree,

so we began to hire a few exceptional undergraduates to work on some research projects. It is not coincidental that this time period also represents the beginning of our collaborative relationship, first as mentor and student, and then as colleagues.

This early period was one of intense activity and an exceptional group of students helped cement our belief that through conducting real world policy work within the context of a shared mental model, not only were the students able to learn more effectively, but they could also conduct high quality research work, and on reflection because of our size and the students we worked with was one of relatively low although not zero transaction costs. Over time another academic institution, would be added, and eventually an off campus, independent, and new non-profit would be established that became the vehicle for implementing this model, both of which greatly increased the transaction costs, and led to innovation in our approach in an attempt to battle the increased costs. (When we speak of the approach, we are referring to this group of institutions collectively)

One of the Institutes core objectives was to engage students during their undergraduate years, a time when students are still shaping their worldview and understanding of core guiding principles. Our approach attempted lay the groundwork for a mentoring, close relationship or "high-touch" program that exposes undergraduate students to the ideas that undergird western civilization and the American Experience in particular, best practices in social science research, along with the patterns of behavior that lead to a successful professional career. In short, we were seeking to use a shared mental model that would reduce the transaction costs of learning, and result in an increased ability to collaborate, provide better student development outcomes, and ultimately lead to better public policy research as well as students well trained in the other facets in a research organization.

Our experience observing and working with a large number of students has led us to conclude that a pipeline of students well trained both in the ideas that undergird western civilization and in the technical skills necessary to directly engage in public policy analysis is underdeveloped or just lacking in most undergraduate research programs. That pipeline reduces the search costs and provides a ready group of potential students that have some demonstrated interest further reducing the costs of our learning approach in time and motivation. Further we are convinced that too little focus has been placed on the hands-on experience of social science undergraduates, and as a result the status quo of no action dominates at most institutions

Despite the core importance of public policy and the direct link often found between the training students receive and their skill and success in engaging in public policy work, few programs focus on creating a pipeline of talent that, upon graduation, is ready to directly engage in government agencies, think tanks, private sector firms, or to continue on to graduate work focused on public policy. By taking purposeful action to ensure students were well trained in both the ideas that are foundational to western civilization and prosperity and in the substantive knowledge necessary to complete high quality public policy research, we believe we produced a unique pipeline of talent, better prepared students, and ultimately improved public policy outcomes.

Not all of the students we found smart and interesting were good at or even interested in research. We found them positions compatible with their interests and abilities such as operations, accounting, and fundraising. These students went through the same experiences in developing a shared understanding as did the researchers, and as we improved our ability to identify the interests of the students, we worked with the costs of misplacement were greatly reduced.

Our approach is unique in the social sciences because it focuses so intensely on undergraduate students, providing them with the mentorship and project-based learning more commonly provided in late-stage doctoral programs. It couples that deep mentoring with specific learning outcomes. We emphasize both mentoring in real world research experience (research focused training) and student development activities focused on both impacting ideas and behavior (idea's focused training). The mental model for this is one of progressing from recruitment to training in the ideas of a free and prosperous society and then to the application of those ideas in the narrower research areas. This development model culminates in the intense student-mentoring model that has become our hallmark.

4. The Model of Student Development

Our approach to student development is a holistic one running from initial recruitment through career placement and training. Figure One lays out the logic of progression of our student development model, but the implementation in practice and in design is one where once a student enters the "wheel" in the figure they are experiencing the activities simultaneously. Figures like the one we include necessarily eliminate complexity to illustrate the core parts of a process, and ours is no exception. The reality of our approach is one that would resemble the drunken man's walk where students wander through the different available activities, but over time experience each of the different parts and round out the learning we hoped would occur. Despite the individual

students "drunken" walk through the "process" the logic of a simple model helps illustrate the areas we believed were important, and similarly below we present linearly a model that for the student participants was most often not a linear experience, and that nonlinearity mean that the costs of participating were quite low as students could enter at any time, and the learning experiences were varied in approach and topic for them, we believe leading to better outcomes.

Our model of recruitment, introduction to the ideas of a free society, in-depth training in those ideas , training in public policy, intense mentoring and research training, placement and career planning provides students with the skills and knowledge necessary to create a both a well-rounded graduate, and a graduate that is in high demand in the wider job market. For each part of the model, we have identified both outputs and the outcomes that we believed represented success in each stage of the model.
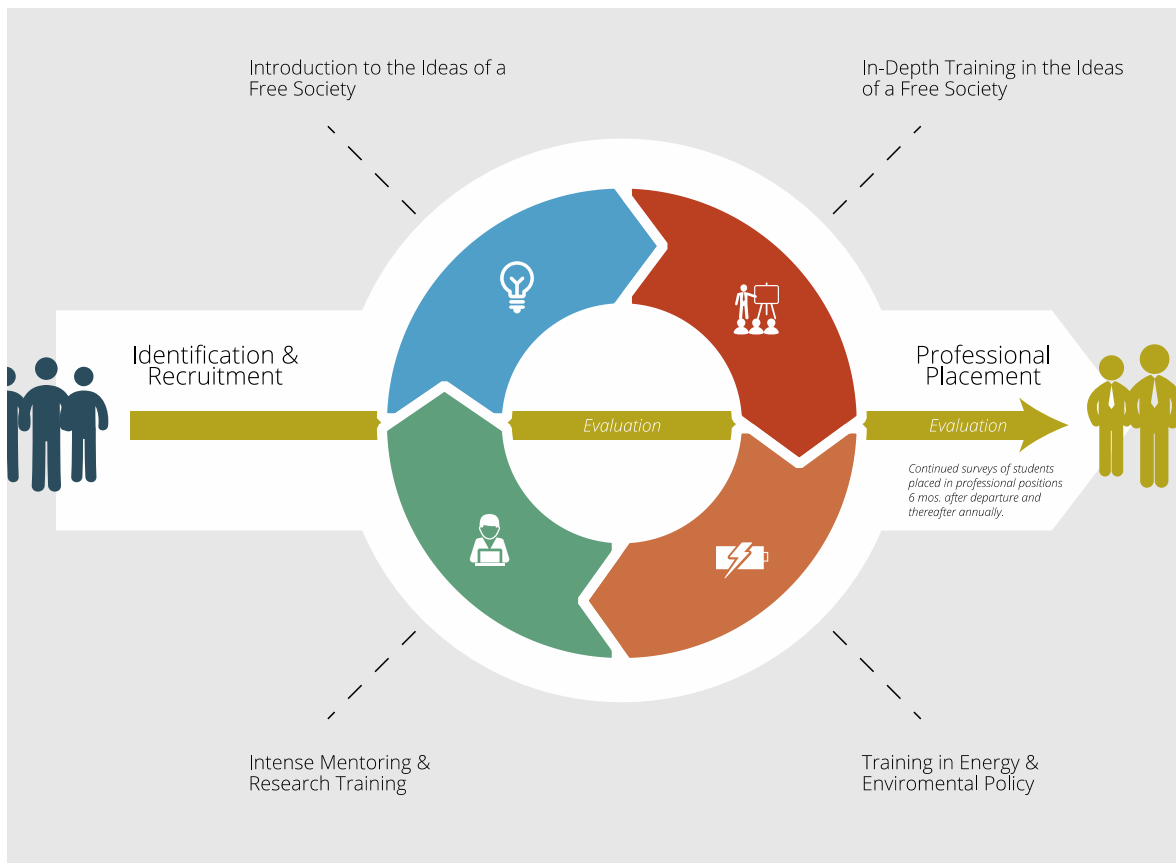

Figure 1. A Student Development Model

4.1 Recruitment

Our model begins with identifying "smart and interesting" students. It is focused on programs and activities designed to aid in the screening of potential students that are interested in how to develop a free and prosperous society and how public policy impacts that desire. These activities are generally low cost and low-touch for the total number of students impacted. They have included identifying students in our courses and in establishing particular programs that help identify students and provide the opportunity to find students outside our usual campus networks. These activities have included networking happy hours, campus outreach events, and other events that were the initial first touch with a student. While these events represented an important source of initial first touch with students, many of those who attended these events were invited and ultimately referred to our program by students who were currently participating. This recruitment approach of relying heavily on current students, and then having the opportunity to have low stakes interaction with a wide group of students allowed us to recruit from the width and breadth of campus and resulted in a diverse set of "smart and interesting" students that greatly enriched our programming and provided fertile ground for discussions and, sometimes, debates within the group of students.

We viewed success in this part of the model based first on the outputs, the total number of students engaged in low touch activities that first connect them to our programs and opportunities. We then evaluated of the outcome we desired from these interactions, namely moving these first touches to the next step in the student development model.

4.2 Introduction to the Ideas

Students who moved from our initial low cost, low touch interactions of the recruitment phase entered the initial process of developing a shared mental model focused on the ideas that underpin western civilization and are the basis of a free and prosperous society. We began with activities focused on a shared understanding in this area to provide a common language for understanding the goals of public policy. Our model in this stage focused on activities that provide a basic understanding that through voluntary exchange, personal and economic freedom, and the emergence of a spontaneous order, individual and societal well-being are maximized and human beings flourish. These activities provided the second set of touches that served to engage students. Activities that we conducted in this area included student clubs and groups, student information sessions, and a speaker series.

These events were generally low/medium cost and medium touch with students directly interacting with the ideas in a basic way. We again viewed the success of events in this area by first focusing on total participation, and then turning to the outcome focused evaluation of the learning and understanding of the of the ideas of western civilization and of a free society, and finally the number and ratio of students moving into the third step of our model.

4.3 In-Depth Training

We provided in-depth training for students who were interested. Our focus was the further cultivation and deepening of the shared mental model of the foundations of western civilization and a free and prosperous society.

Our activities in this area were focused on solidifying an understanding of these ideas, and helping them engage in discussion, debate, and application of these ideas to public policy. Students who were engaged in the overall model were likely to engage in these activities throughout the course of their time working with us, with more senior students beginning to take the lead in many discussions and providing mentoring and understanding to students with less experience. As students continued with us, they also became an important part of both the recruitment and introductory parts of the model, thus greatly expanding the potential reach of the program.

Immersing students in the philosophical underpinnings of the American Political Development and Government was more costly than introductory activities. Generally, by this phase, students had become employees and 3/5 of their weekly hours were dedicated to their work. The other 2/5 were spent in development activities, which included student reading groups, speaker and discussion series events, as well as student training that connected the philosophical ideas to public policy. These activities sought to foster a deeper understanding of these ideas and the shared mental model.

While all stages of the model are necessary to our model of student development, much of the intellectual groundwork for the shared mental model we were seeking to develop occurred at this stage of the model. It was here that the deeper intellectual discussions, disagreements, and competing narratives were directly and thoroughly engaged by the students under the direction of the faculty and other leaders. Each of the activities were developed with particular learning outcomes that sought to cultivate the shared mental model and better aid the students in employing that shared understanding in the public policy work.

Again, we viewed success as a two-stage evaluation. First, we were interested in the total number of students who participated in the various events. We were again, however, interested in the outcomes of our activities, and worked to evaluate whether a measurable increase in knowledge and understanding of the shared mental model had occurred, if they had learned how to apply that shared model to public policy questions.

4.4 Training in Public Policy

Concurrently with helping students gain a strong grounding in philosophical foundations, we provided technical training in public policy research. We consistently found that an understanding of the ideas of a free and prosperous society is a necessary but not sufficient prerequisite to doing high quality work in the public policy arena. Students must also be well trained in the technical understanding of public policy and incorporate best practices into their mental model of public policy. It is here that we began the process of creating social scientists rather than ideologues in our development of a shared mental model. We sought to ensure that every student had incorporated the skills necessary to engage in the practice of public policy directly into their mental model. Our activities included research methods training, public policy training, public policy focused student groups and

clubs, events in the speaker series, policy site visits, and student training in specific public policy issues.

We again considered the outputs, or the number of students training along with the larger outcome focused goals of measurable increase in technical knowledge and public policy understanding and skills, and the preparedness of students as they enter the fifth part of the model.

4.5 Intense Mentoring and Research Training

The step in our student development model that best represents the implementation of the shared mental model students have developed is what we call intense mentoring and research training. In this stage students engage directly in the practice of research under the mentorship of academic scholars and public policy researchers both in common projects and independent research. This intense mentoring the is the apprenticeship stage of the model. It provides direct, hands-on experience in the practical skills, experience, and knowledge to conduct research that is directly applicable to public policy question. This mentoring, which placed students directly into the research process, is only possible when the mental model we seek to develop is, in fact, shared, or the transaction costs are simply too high.

A shared mental model both of the ideas of a free and prosperous society and the research model that allows for high quality research and policy work is what takes our version of experiential education from the self-directed and largely ethereal approaches we discussed above, and places it squarely within a pedagogical framework that has both structure and desired outcomes. Throughout our student development process, we carefully considered and provided students a variety of opportunities to engage both the philosophical understanding and the practical approaches to public policy as they developed a mental model. The one-on-one mentoring that occurs in this stage of the model is largely possible because of the shared model that has developed.

We share much with the goals of graduate school, primarily doctoral programs, where students first start with a large number of courses to develop a common understanding so that they can engage with faculty in collaborative and independent research projects with greatly reduced transaction costs. We found that our approach prepares undergraduates to engage in research in ways that closely resemble the best graduate experiences and prepares students for continued study or employment.

By their very nature, activities in this area are high-touch and high-cost and represent the final stage of preparation for a student post-graduation to be employed in the public policy sector or move on to further study. These activities are most often individually focused on students and activities in this area include one-on-one mentoring, independent research projects, academic conference participation, as well as editorial and other writing for a general audience.

At this stage we primarily focused on a set of outcomes rather than outputs that measure the number of students. First, we were interested in consistent measurable increases in the ability to synthesize the ideas of a free and prosperous society and public policy. Second, we measured increases in the ability to conduct policy-relevant research with increasing levels of independence. Third, we identified whether they were being adequately prepared for post-graduation employment or study.

4.6 Placement

The final stage of our model and the ultimate goal was placing students into jobs in government, public policy, industry, or elsewhere that use the skills and abilities gained through their training, or into graduate programs that will create the next generation of scholars that interested in public policy. We are agnostic in our view of which is most appropriate, and it often differs by individual student and as such it is a highly individualized process that relies on personal networks and close relationships to facilitate each student's placement. We generally focused on general activities that were applicable across students and were designed to aid the transition from being a student to joining the professional world and included interview and professionalism training, resume workshops, mock interviews, providing information about potential employment and internship activities. We also provided individualized activities that were most often focused on the active cultivation of a placement for each student that aligns with their goals.

We were interested in understanding the outputs of the total number of students trained and placed, but our primary measure of success was placing students in positions that drew directly on the shared mental model and skills the students had developed while working with us.

5. Our Programmatic Approach

Our implementation of the Model outlined above requires a programmatic approach that supports the each of the Model's steps. These programs represent a substantial investment, and our desired outcomes were in large part

premised on the link that our programmatic activities had with the mental models we are seeking to develop and our model of student development, and each served to provide programmatic approaches to the reduction of transaction costs.

In what follows we explore a few of our programmatic activities. We also identify what parts of our model we believe they best supported.

5.1 Networking Events

One of our activities each month was to host a local monthly networking events were open to all members of the community, and invitations were specifically targeted towards students on our campus. Drinks and discussion topics were provided on current events and various public policies. Additionally, a short presentation was provided at each event that focused on the underpinnings of a free and prosperous society, or public policy.

Our goal in sponsoring these events was to help those who attend the monthly Liberty on the Rocks events be able to articulate the foundations of a free society and apply those ideas to public policy, a core part of our shared mental model we worked to develop. Further these events also develop a network of professionals and students in the local area with interest in what we were doing, providing a local networking opportunity that provided students with the chance to practice networking skills and develop local connections.

In general, we primarily view this program as being one of recruitment, as it represented an opportunity for students that had potential interest in working with us to get to know who we and our students were and some of the basic ideas we were most interested in, without requiring a large time commitment and providing a clear benefit in the form of food and drink. A large number of our eventual student researchers attended one or more events prior to their participation in our more intense mentoring and educational programs. In one year, we identified approximately 200 unique individuals that attended one or more of these events.

5.2 Speaker and Workshop Series:

To ensure that students are well-trained and prepared, we hosted a speaker series for our students and the wider community. These sessions were designed to explore the impacts of various public policies, the philosophical roots of free and prosperous societies, and to expose students to a wide range of ideas.

These events were also used to recruit new students to explore opportunities in our research center. Many students were invited by our student researchers or respond to our outreach on social media. Over the course of the speaker series during one year we identified 800 unique individuals who attended our sponsored or co-sponsored events.

We viewed the opportunity to explore a variety of perspectives and professional backgrounds through the speaker series as being an important part of our model. We exposed students to topics that helped to foster their understanding of policy processes. We believe students' research products were improved both in depth and breadth from attending the speaker series. Further, providing close interaction with experts, political figures, and thinkers offered opportunities for students to gain experience in professional interactions as well as provided ideas about future plans.

5.3 Student Clubs and Groups

As part of our campus outreach and student development we helped organize several student organizations that explore the ideas of a free society, and how public policy intersected with those ideas. These groups, which were student led, run, and organized implement a variety of public events. These events focused on the philosophical underpinnings of public policy in free societies as well as particular policy issues, such as free speech on campus.

These groups provided one of the best access points for identifying and cultivating students. They fed students into our more focused programs and were particularly successful in identifying diverse students who were interested but were unlikely to be readily identified by other means.

Student leadership of these groups provided a unique venue for applying the shared understanding. Rather than the weekly content being focused on what faculty members believed was most interesting or important, the students themselves identified the content and the outcomes they wanted to achieve. One example helps illustrate: one of the student groups identified individual rights when dealing with the police as something they were most interested in exploring, they then identified what their learning goals were, identified a speaker and necessary media tools, and held the event. This event was one of best attended and filled a moderately sized classroom (150 seats) with a variety of students.

Our goal in helping to facilitate these groups was to help students become familiar with the philosophical

underpinnings of American Political Development and free and prosperous societies and how those ideas intersect with public policy. In the process of developing these groups students themselves built a community on campus interested in public policy and a free society and helped it become a more robust campus voice. Over the course of the final year of our collaboration, approximately 300 unique students participated in these groups and their events.

6. But did it Work?

Our collaboration over the last ten years has provided what believe to be strong anecdotal evidence for the success of the model, and for some of the programs we developed. Together, we have collaboratively worked with the final student development model as described above for about half of our time together, and we continue to use the pieces of the model in our current, albeit separate endeavors. As is the case with most pedagogical approaches, we found that the underlying model, which was the result of a long-term collaboration and implementation, represents a sound approach. Our focus on reducing the transaction costs of learning made the model particularly powerful and a large proportion of our students who fully embraced their time with us have moved on to further study, public sector employment, or into the private sector. Our discussions with them as they have departed, and then as the years have passed has further convinced us that the shared mental models, we worked to develop remain active long after they have graduated and moved on to new opportunities.

Our focus on reduction of the transaction costs to learning, rather than focusing solely on the technical skills necessary to do the research work we were conducting made our students something more than just research assistants, they became colleagues with a strong foundation in the ideas and the tools necessary to do so. This is what we believe embodies the goals experiential education.

Even where our former students have departed from our preferred policy outcomes, and many of them have, we are pleased to see the foundational understanding remains at the root of the way in which they understand public policy and how they think about these important issues. Even more importantly than our pleasure in seeing our teaching "stick", is the reality that developed in parts of public policy where our former students are particularly active, that the shared understanding and the learning it resulted in has become an important part of the public policy process and

Here we return to our introduction, this is primarily a pedagogical paper. One can read this paper primarily as report on practice that explores an application of experiential education, particularly one that is heavily focused on ensuring that experiential education can speak clearly to the learning outcomes that have occurred. We hope that this exploration has provided some insights into that pedagogical discussion

For us reducing the transaction costs to learning provided the glue and grease for our approach to student development. Early on in our collaboration we found that bringing together students who were "smart and interesting" posed some important problems, chief among them was divergent understanding of the world around them, the goals of public policy, and the lack of a common language, large transaction costs indeed.

We quickly identified that overcoming these issues was necessary and what in the beginning was small group discussion with a small number of students and later became a more programmatic approach, had as their chief goal the creation of an understanding and language that provided the mechanism to overcome the disparate understandings that our students arrived

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