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Professional Socialization and Mode 2 Knowledge in the Neo-liberal University*

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Preface

Consistent with recommended practice, I envisioned refereed journal articles when I commenced work on this analysis. Formal publication in some form remains a possibility.

This analysis reflects considerable learning as I explored new frontiers. As my awareness of important issues grew, and the page numbers and word count increased, I made a consequential decision regarding this analysis' aims, primary audiences, dissemination mechanisms, and use-values.

Publications in refereed journals are not a priority at this time. Instead I offer this analysis as act of disciplinary stewardship. Stewardship, as I understand and strive to practice it, is an ethical obligation, and it is founded on moral imperatives to seek the greatest good for as many people as possible.

Stewardship, in this view, also is a non-stop journey facilitated and perhaps redirected by diverse colleagues who share the same altruistic commitments. Ideally, we form and advance scholarly communities who study, learn, perform, and improve together.

If this paper is useful, share it via your social networks. If it moves you to write and publish alternative analyses, proceed with mine as a comparative foil. If you are inclined to provide feedback, including penetrating criticism, I'll welcome and appreciate your effort. And if by chance you wish to advance some of these ideas via collaborative projects, I'll welcome the opportunity to explore the possibilities.

Professional Socialization and Mode 2 Knowledge in the Neo-liberal University

Abstract

The conference theme—Leading Beyond the Campus: Driving Change as Experts—announces a bold, timely agenda. It is timely because it responds to public policy demands and bold because it poses challenges the dominant model for an arts and sciences-like discipline. Inherited Kinesiology, splintered by sub-disciplinary specializations, structures professional education and safeguards faculty members' academic freedom in "Ivory Tower Universities". The Neo-liberal university prototype challenges these inheritances, while offering opportunities for innovations in, and diversification among, higher education institutions. Innovation catalysts start with public policy changes, especially mandates to demonstrate Kinesiology's value-added impacts. Other potential catalysts include growing student diversity; digital age opportunities for professional socialization/education; and both funding incentives and evaluative criteria for production and uses of knowledge. Leadership beyond the campus requires Mode 2 knowledge facilitated by outreach/engagement partnerships and social networks. These collective action formations facilitate professional education, fuel knowledge generation/sharing/use, promise policy supports with new resources, and announce a helping discipline which serves society and its' members.

Keywords: Professional socialization, professional education, research and development, university partnerships, outreach and engagement scholarship, design research

The shift from an industrial society to a global one continues to impact every social institution as well as inter-institutional relationships. Planning must be adaptive and proactive, requiring disciplinary stewards to assess strengths, weaknesses, opportunities and threats (SWOT) in their respective internal and external environments (Block & Estes, 2011; Lawson, 2016a). Pluralistic thinking is essential (Block, et al., 2015), and so are balanced evaluations of Kinesiology's specialized "bunkers and silos" (Kretchmar, 2008).

A generative question provided by Peter Drucker (2009) provides a launch for assessment. *If we hadn't inherited it, would we do it this way?* This question expressed Drucker's belief that progress toward a desirable future depended on "planned abandonment". Because the conference theme—Leading Beyond the Walls…—signals a new pathway toward the future, disciplinary stewards also must decide what to stop prioritizing (Lawson, 2016a).

The Neo-liberal university prototype facilitates futures-oriented planning. It presents challenges alongside opportunities, such as growing demands for public institutions to demonstrate their value-added impacts. Two impact categories are salient: (1) Degree programs' effects on students, extending to demonstrable benefits students lend to real world practice and policy; and (2) Research and development impacts. Two keywords in my title signal these two priorities: Professional socialization and Mode 2 knowledge. Both gain importance as the Neo-liberal university prototype is subjected to a multi-faceted examination.

My analysis begins with a selective, SWOT-like assessment of Kinesiology—and with due recognition of aliases such as Sport Science and Exercise Science. Drawing on a previous analysis of 20th Century social determinants (Lawson & Kretchmar, 2017), I offer three claims. First: The academic discipline of Kinesiology was developed to conform with the dominant, prestige-oriented prototype for a university developed for a disappearing industrial society.

Second: This dominant model is at odds with vocationally-oriented students' professional socialization and education. It also fails to respond completely to Neo-liberal university mandates.

Third: For faculty and students to "lead beyond the walls and drive change as experts", innovative models for professional socialization and professional education are needed. These models depend in part on an expanded epistemology facilitated by outreach and engagement partnerships and innovative social networks.

Inherited research-to-practice models, code-named "Mode 1 knowledge systems" remain important, but they are insufficient (Nowotny, et al., 2003). Mode 2 knowledge, generated in and derived from practice, facilitates leadership beyond the university's walls, in part because it is generated, tested, used, and disseminated in external settings. This second kind of knowledge is facilitated by outreach and engagement partnerships and innovation-oriented, social networks, which lend structure to apprenticeships and other forms of experiential learning.[1] Incentivized by 21st Century federal science policy in tandem with the prototype for the neo-liberal university, Mode 2 knowledge systems pose challenges and present opportunities for innovation for Kinesiology as well as their host universities and colleges.

Inherited Kinesiology in the Industrial Age American University

Kinesiology, the arts and sciences-like discipline with several aliases and multiple language systems (Knudson, 2019), was developed in accordance with the missions, organizational structures, research and development imperatives, and educational mechanisms for the 20th Century American university. In this model, academic discipline and home department usually had the same name, and disciplinary stewards patrolled departmental boundaries and disciplinary jurisdictions. These boundaries and jurisdictions were associated

with an industrial age system for solving societal problems and meeting human needs, analyzing public policies, and determining organizations' missions and configurations.

When leaders for established academic disciplines did not claim jurisdiction over important phenomena of interest, advocates for new disciplines were able to capitalize on a timely opportunity. The 20th Century American university's benign neglect of sport, physical activity, exercise, play, dance, and physical culture provided a case in point. Kinesiology's pioneers were able to claim that this new discipline's phenomena of interest, missions, disciplinary jurisdictions, and departmental boundaries filled a gap in the system of academic disciplines, while responding to societal needs. Once this idea took hold in top-tier research universities in California, it quickly spread in America's prestige-driven higher education system as other universities emulated the forerunners (Lawson & Kretchmar, 2017).

Meanwhile, 20th Century federal science policy influenced universities and their academic disciplines and influenced their standardization and homogenization. This policy favored a research and development model borrowed from the private sector, and it promoted a special epistemology. Code-named Mode 1 knowledge (Nowotny, et al., 2003), this model's features are evident in Kinesiology.

In a Mode 1 knowledge framework, basic or "pure" research in the disciplines, completed inside the university's walls and supported by external funding, was the top priority, and it was reinforced by ideals for faculty members' academic freedom. Basic research paved the way for two kinds of applied research. Efficacy trials under controlled laboratory conditions later facilitated effectiveness trials in real world settings. Professors' specializations were configured accordingly, constituting a university-based division of labor for faculty members.

Valid, reliable knowledge generated and disseminated in this way was assumed to be generalizable and useful. What worked in Seattle also would be effective in Houston, Los Angeles, and Boston. When discrepancies occurred, implementation fidelity was the culprit.

Doctoral programs structured to prepare future faculty members/researchers followed suit. Graduate students specialized in basic or pure research, applied research, or perhaps research dissemination and utilization. In Kinesiology, they also acquired sub-disciplinary identities and specializations. National/international professional associations and scholarly journals reinforced faculty members' sub-disciplinary identities and specializations.

Like doctoral students in other academic disciplines, few 20th Century Kinesiology students received formal preparation in pedagogy, the art and science of teaching and learning.[2] Fewer received preparation for consequential gatekeeping responsibilities and knowledge-related functions accompanying disciplinary-based, professional socialization and education. Characteristically, these practical matters were assigned to faculty members who specialized in "applied research and development", physical education's teacher educators, and clinical faculty who supervised field experiences structured to provide students with basic practice competence.

Kinesiology in top tier research universities thus trended toward a special kind of arts and sciences discipline focused on the science of human movement (Kretchmar, 2019). In these universities, the rapid ascension of Kinesiological sciences featured scientific analysis in classrooms and scientific laboratories. So-called "activity classes" structured to improve undergraduate students' personal movement performance slowly disappeared.[3]

Three powerful forces facilitated this implicit model's development, dissemination, and implementation in other kinds of universities and colleges: (1) Social institutional imitation in search of prestige and the resources (e.g., faculty lines, grants and contracts); (2) Employment of

doctoral students—graduates of top-tier Kinesiology programs—who steadily transformed curricula in accordance with their sub-disciplinary specializations and pedagogical preferences; and (3) The standardizing influence of national scholarly and professional associations, particularly two newly-named entities: The American Kinesiology Academy and The National Association of Kinesiology in Higher Education.[4]

A Reproductive System

These several 20th Century features formed a pattern. Today's commonalities and similarities among Kinesiology departments, faculty, and programs can traced back to this system's related components. Doctoral faculty members' career identities and research programs, doctoral students' career plans and identities, the structure of many doctoral programs, faculty roles and responsibilities in Kinesiology departments, the core curriculum and other features of Kinesiology's undergraduate and graduate programs, the priorities and operations of host universities, conspicuous program imitation facilitated by the American university prestige system, and scholarly-professional associations comprised an invisible system (Lawson, 2019a). All have been instrumental in the social reproduction of Kinesiology and, more broadly, its' alignment with, and contributions to, the prototype for the host 20th Century university.

Outliers and The Potential for Positive Deviance

Notwithstanding homogenizing forces in service of standardization,[5] variability among colleges and universities remains, extending to constituent departments, degree programs, and preferred faculty identities. Alternative names for departments and programs—e.g., Exercise and Sport Science; Sport Science; Physical Activity Sciences—signal social institutional divergence. Possible causes include mandates from the host college or university; and faculty leaders' dissent with the dominant Kinesiology system.

These alternatives' explicit missions for career preparation, their contrasting professional education programs, and divergent faculty orientations may nominate them as "positive deviants" or "outliers" (Sternin & Sternin, 2010). In today's turbulent societal and public policy environments, they merit special investigation in service of two different outcomes.[6] Selective replication and extension is the first, while the other entails better strategies aimed standardization in pursuit of improved quality assurance.[7]

Taking Stock of Strengths, Weaknesses, Opportunities, and Threats

At the beginning of the second decade of the 21st Century, it is timely to analyze the dominant 20th Century Kinesiology system. For example, is arts and sciences-oriented Kinesiology fit for purpose in the 21st Century university? In all manner of universities and four-year colleges? How much variability in Kinesiology programs is permissible and justifiable in the fast-changing contexts for American higher education?

What boundaries and jurisdictional claims are warranted and defensible? To what extent are they flexible and context-dependent? Is the industrial age research and development model the best way to configure departments, organize undergraduate and graduate programs, and structure doctoral programs to prepare future faculty members? How much variability is justifiable, and what quality assurance standards are needed? Who is in charge of developing and reinforcing said standards? What are the roles of professional/scholarly associations?

Turning to the conference theme: Are faculty members prepared to lead beyond the university's walls? What policy incentives, rewards, and disincentives are in play? What are the value-added effects of their research and scholarship?

In the same vein: Are new and recent graduates prepared to lead beyond the walls? For example, are they prepared for program leadership and policy innovation? If so, what are the

value-added effects of undergraduate and graduate education? If not, what gaps need to be addressed? Does this work entail modest reforms or more complicated systems change? Who will provide overall leadership?

These questions implicate others. They signal a grand adaptive problem without easy answers (Heifetz, et al., 2009). Perhaps it is comforting to know that these questions are being entertained in many academic disciplines—and not merely in the United States.

In many nations the Neo-liberal prototype for higher education provides a powerful stimulus for framing and addressing these questions as well as a planning framework. It refers broadly to the growing intrusion of state/provincial and national politics into higher education's missions, governance, degree programs, research/development functions, and resource systems.

The Neo-liberal University Prototype

Neo-liberalism is an economic doctrine associated with capitalism. It emphasizes minimal governmental intrusion into economic markets. Sometimes hailed as privatization and corporatization, Neo-liberalism might be summarized as in the following slogan. "The market rules according to the market's rules". Like businesses and corporations, public sector programs and services rise and fall, succeed and fail, in free market competitions.

In other words, the public sector—including state and federal governments and public sector organizations such as colleges, universities, schools, and community health and social service agencies—no longer is insulated and protected from free market economics as ideals regarding the benefits associated with free market competition and entrepreneurialism invade the public sector.[8] For example, cost-benefit and cost-effectiveness analyses gain importance.

Meanwhile, out-sourcing and sub-contracting become normative because they allegedly save money. Cost-saving begins with the fixed costs associated with public employees' salaries and benefits.

Out-sourcing and sub-contracting practices also enable "right-sizing" (aka "down-sizing") of public sector organizations—governments, schools, colleges and universities, and others. All are to be organized and conducted as businesses—with special attention to "fiscal the bottom line". The driving question is: What organizational arrangements provide the most benefits at the lowest cost?[9]

Inside higher education, the logic of corporate, centralized management competes with and erodes inherited ideals for decentralized decision-making by tenure-track faculty acting as stewards for their respective disciplines and the host university. Clearly, each university's revenue generation is a priority, but so is cost-cutting.

Tensions and conflicts are inevitable. Predictably, salient categories of numbers and dollars compete with public service ideals and altruistic goals. Job security no longer is guaranteed, perhaps prompting public sector employees to question their decisions to trade higher salaries in the private sector for job security.

These trends and others help to explain why some higher education scholars describe the Neo-liberal prototype as "academic capitalism" (e.g., Cantwell & Kauppin, 2014; Slaughter & Rhoades, 2004). Some scholars also pay special attention to adverse effects on academic work and faculty careers (e.g., Malcolm & Zukas, 2009).

Rigorous Accountability Mechanisms

Other major changes are associated with the steady invasion of Neo-liberal economics. Performance-based (aka "outcomes-based") accountability systems become higher education

centerpieces, and they usher in several consequential questions. For what outcomes and results are Kinesiology's leaders prepared to be held accountable? How much variability is permissible? Who will take charge of performance monitoring and continuous improvement mechanisms? Where will the resources come from? Do the benefits justify the costs?

Top-level officials in the Neo-liberal prototype, like their counterparts in other public sector organizations, are prone to emphasize the fiscal bottom line. In an "audit culture", they routinely examine how many students are recruited and retained in a degree program as well as course enrollment because these "body counts" translate to revenue generation.

Revenue matters for two reasons. Public colleges and universities nearly everywhere struggle to keep pace with inflationary costs and spiraling staff benefit costs. At the same time, all are expected to respond to and anticipate state-wide, regional, and national needs for social and economic development. The reminder here is that new missions and programs require additional resources, and the bulk of these resources must be gained via internal reallocation.

It follows that department chairs and directors are expected and required to assume a new leadership role. They must develop and implement resource generation plans (Ransdell, 2017) as they provide oversight for program innovations, reductions, and perhaps terminations.

This new managerial role fits an organizational context in which each department is expected to pay for and take on duties once performed by all-university structures. Examples include secretarial and clerical supports, development (e.g., paying for a specialized development officer; courting donors), and purchases associated with photocopiers, phones, and supplies.

Incentive-based budgeting schemes follow suit. In some colleges and universities, burgeoning student enrollments translate to enriched funding for Kinesiology, while other disciplines (e.g., the Humanities, Social Sciences) struggle to make economic ends meet because

their enrollments are shrinking. External revenue generation via grants and contracts also are priorities in the research-intensive universities.[10]

Consequential decisions regarding resource allocations and program continuation made by presidents, provosts, and deans also are driven in part by economic indicators and data. For example, external revenue generation, enrollment data, and both cost-benefit and cost-effectiveness analyses are instrumental in decisions regarding program, departmental, and disciplinary "right-sizing"—alternatively presented as "strategic down-sizing". The increasing reliance on part-time faculty who typically are not eligible for employee benefits fits this pattern, and so does the practice of hiring full-time faculty on term-limited appointments.

Post-decision justifications offered by Presidents, Vice-presidents, and Deans in this business-like higher education environment typically include patterned phrases. Examples include "contributions to the university's strategic plan" and "centrality to the university's missions".[11] No wonder: The Neo-liberal university prototype incorporates corporate management models.

Governmental Intrusions

Governmental influences and mandates are another key feature of the Neo-liberal university prototype. The 20th Century ideal of the ivory tower university protects academic freedom, enables the free intelligence that is foundational for faculty members' tenure status, and aims to enrich students' learning via liberal education. With the ascension of the Neo-liberal prototype, this ideal is being challenged and may be in decline.[12]

The relationship between publicly-assisted higher education and state governments is of special import. Four examples are timely and important because of their relevance to

Kinesiology, its professional socialization and education mechanism, and its research and development priorities.

Shifting educational policy. The first example originates with a shift in public policy assumptions regarding the roles and responsibilities of public universities and colleges in a state's economic and social development. The 20th Century model in states such as New York, Florida, and California might be capsulized as follows. Higher education degree completion is a public good more than a private benefit, so keeping costs down and making it affordable, thanks to significant state money, is an investment in our state's social and economic development.

In contrast, in the 21st Century Neo-liberal prototype education is a private benefit for students, so they should bear a larger share of the costs. Predictably tuition and fees rise as states' fiscal supports for public higher education declines, and departmental leaders feel compelled to pass along the costs of laboratories and clinical field experiences to students.

Public sector university and college language systems mirror this consequential shift. Higher education institutions once known as "public universities" now refer to themselves as "publicly-assisted". "Consumer" substitutes for "student". In the same vein, degree programs include a new priority for undergraduate and graduate students to promote their particular "brand" in the employment marketplace (e.g., Lee & Wallace-McRee, 2018).

Student indebtedness. The second example is grounded in the significant national problem of student indebtedness. It has grown as students have been required to pay substantially more because state fiscal supports have declined. Three Neo-liberal criteria rise to prominence: (1) Time toward degree completion, oftentimes linked to some kind of educational essentialism and credentialism; (2) Performance-based accountability systems, particularly the

extent to which university officials are able to demonstrate the value-added effects of undergraduate and graduate education; and (3) Students' returns on their economic investment.[13]

Predictably, these three criteria reinforce vocationalism in undergraduate and graduate degree programs, and they are associated with advocacy for competency-based education as well as renewed interest in professional education-related certification and program accreditation mechanisms. In this new context, a liberal education for undergraduate students is at risk of being viewed as a luxury—and with implications for the arts and sciences disciplines which have been charged with responsibilities for delivering courses and programs.[14]

Challenges to professional boundaries and standards. The third example is on the immediate horizon, and it has four keynote features. All have immediate import for disciplines engaged in professional education, with programs structured by national program accreditation mechanisms and state certification and licensing mechanisms.

(1) A new initiative known as "credential transparency" takes aim at formal higher education requirements which take time and money because they provide a hidden monopoly for higher education coursework. Credential transparency shifts the focus to workforce competencies and digital age opportunities for "anytime, anywhere, anyone learning". It assumes that all kinds of learning should count, regardless of where they have occurred (e.g., Howard, 2019; Zanville, 2019). A likely outcome is the development of digital portfolios, which feature students' external experiences, showcase their competencies, and are indexed against more flexible professional certification competencies and program accreditation requirements.

(2) Labor market analyses, conducted in service of a state's or a region's social and economic development, are employed to determine degree program status—size, configuration, resources, program location in particular colleges and universities, and evaluative mechanisms.

To wit: the state's needs for teachers influence and may determine the number of "seats" in teacher education, and teacher education programs are restricted to the colleges and universities able to prepare the most at the least cost.

(3) Increasing population diversity is instrumental the development of state mandates for graduates' cultural competence. In New Mexico, for example, a new state mandate stipulates that university teacher programs must prepare new teachers who are "culturally and linguistically responsive" (Gaudreault, 2019). Beyond ideals for educational equity are priorities for teacher education programs and P-12 schools to contribute to human capital development (aka workforce preparation) in the global economy. Neo-liberalism is an implicit, powerful influence.

(4) State-wide higher education coordinating boards and councils promise to become more prominent. Future decision-making is destined to take into account how many Kinesiology programs (by whatever name) need to be supported in a state-wide higher education system; and which campuses are positioned to offer the best access, at the most affordable cost, and with the most appropriate outcomes for students and the host state.[15] In this context, Kinesiology departments' homogenization and standardization present policy risks.

Salient international developments. The fourth example has four parts. It draws attention to Neo-liberalism's impacts on higher education systems in other nations, and it is founded on a reminder. In a global society, it's dangerous to assume that developments in other parts of the world "can't happen here".

Part 1: In Ontario (Canada), a new plan stipulates that 60 percent of a university's total operating funds (i.e., governmental allocations) will be tied to performance on ten metrics, four of which prioritize economic development and community impact (Spooner, 2019). Examples include a skills and competencies metric and proportion of graduates who are employed.

Part 2: Post-tenure performance reviews with employment security consequences are being instituted, particularly in research-oriented universities. Faculty who have not been productive receive a formal evaluation and typically are provided with short-term professional development resources. If they remain unproductive, their tenure and employment may end, perhaps providing a back door to subsequent program down-sizing and elimination.

Part 3: In research-intensive universities in some nations (e.g., Scotland), full professors are "graded", classified, and paid based on their research productivity and external revenue generation (Kirk, 2019). This incentive system is a transplant from the private sector.

Part 4: In England, government inspectors to visit university-delivered teacher education classes to ensure implementation fidelity with national standards for content coverage, instructional delivery, and competency development. Teacher educators also must complete professional development aligned with performance standards. An underlying assumption is transportable to the USA: Where professional education is concerned, academic freedom is risky, and faculty members cannot be trusted. Faculty performance, particularly faithful implementation of governmental mandates, must be monitored and evaluated. Meanwhile, some teacher education programs are removed from higher education and instituted in school systems.

These examples are not exhaustive of governmental, neo-liberal intrusions. Others include research and development "parks" developed with business and industry on university campuses (known as "the triple helix"); and new procedures and regulations for research-produced innovations with product patents, including who gets what share of the profits.[16]

All of the above-named governmental intrusions have import for Kinesiology's SWOT analyses, whether in response to Neo-liberal accountability measures or in anticipation of new ones. In this new context, growing requirements to document the value-added effects of all

higher education degree programs merit special attention. Improvements in the relationship between professional socialization and professional education offer a solid strategy for addressing requirements for outcomes-based accountability systems.

Professional Socialization, Professional Education, and the Credentialing System

The American system of occupations refers to all manner of paid employees, ranging from front-line workers to top-level executives. The system of professions is a sub-category (e.g., Abbott, 1988). The professional workforce, broadly defined, consists of people who have completed four-year higher education degrees (e.g., engineers, teachers, physical activity leaders), graduate professional degrees (e.g., medicine, law, physical therapy), or both.

While specialization sometimes reflects and reinforcements employment market monopolies, inter-professional competition is normative. Each profession's advocates make claims regarding whose front-line professionals and their knowledge base are best prepared and positioned to meet human needs and address societal priorities. National professional/scholarly associations play key roles in all such market competition. Leaders and their lobbyists strive to gain employment monopolies for their members via policy negotiations with governments.[17]

Overall, the professions enjoy higher status and have greater earning power than occupations without requirements for post-secondary education degrees because the professions claim to rely on theory and research as they discharge non-routine duties. All offer higher education program accreditation mechanisms and practitioner certifications as quality control indicators.

These mechanisms signal, but do not document completely, the value-added effects of professional education. Oftentimes these mechanisms are based on the assumption that these effects continue into graduates' full-time employment. Absent requirements for continuing

professional development, whether via state certification bodies or national professional associations, two other implicit assumptions are noteworthy: (1) Pre-service professional education in Kinesiology has career-long, beneficial effects;[18] and (2) Professors rarely have needs for continuing professional development.[19]

A special category of professions charged with meeting human needs and enabling everyday people to achieve their aspirations and goals are known in some circles as "human services professions". Their advocates and leaders claim that altruism always supersedes vocational self-interest and profit as they discharge their duties. Most of these professions seek legitimacy via codes of ethics and codes of conduct. These codes are offered in professional education and later are reinforced in practice.

Each profession's credentialing system fits this pattern. Two mechanisms merit attention because they are associated with professional education and the development of occupational monopolies in practice. First is professional education program accreditation mechanisms, typically developed, monitored, and evaluated by leaders of national professional associations. Certifications and licenses follow, typically involving state agencies alongside professional associations' requirements for continuing professional development.

Kinesiology's career preparation programs (e.g., physical activity leadership, teacher education, coaching science) are part of this institutional pattern. Easily taken for granted while Kinesiology operates on a kind of institutional auto-pilot, it is timely to take stock of inherited trajectories, current needs and priorities, and desirable future directions.

Neo-liberalism overall and the Neo-liberal university prototype recommend a Kinesiology-specific, SWOT analysis of degree programs, including program evaluation and continuous improvement mechanisms. These analyses should include the roles and

responsibilities of national associations for accreditation and state governments for certification (Mitchell & Lawson, 2019). The relationship between professional socialization and professional education is a top priority.

Introducing Relations Between Professional Socialization and Education

Sociologist Dan Lortie's (1973) classic study of schoolteachers is a primer for professional socialization. Framed by a comprehensive framework for the study of work and occupations, he emphasized "a silent competition" among all of the professions and occupations for talented student recruits. This framework raises questions about Kinesiology's student recruitment pool, starting with the students who are attracted and enroll, extending to students who consider Kinesiology, but shy away.

Fortuitously anticipating these needs, Lortie's study suggests that professional education program designers should specify and evaluate their respective mechanisms for attracting, recruiting, selecting, preparing, placing, and evaluating their student talent pools. Such a broad perspective draws attention to a profession's quality control mechanisms, especially admissions requirements, applicant screening and selection mechanisms, degree program configurations, faculty qualifications, competency tests, licensing/certifications, and program accreditations.

In the case of teacher recruits, Lortie emphasized a consequential pattern. Prospective teachers tended to be attracted and recruited on the basis of their personal experiences as students in the K-12 schools. In fact, most entered professional education with preconceived ideas (implicit theories) about the roles and responsibilities of teachers, extending to what they believed that teacher education programs should prioritize, offer and achieve.

In contrast to previous research founded on the assumption that professional education was all-powerful because student recruits were like malleable putty ready to be socialized in

mass production-like fashion, Lortie emphasized that prospective teachers were active agents. Individually and together they influenced teacher education program socialization processes and outcomes.[20] For example, most of these recruits were influenced by their prior experiences as secondary school students. Their personal experiences shaped their initial career choices and plans, and these same pre-university influenced their perceptions of teacher education programs' relevance and usefulness.

All in all, entering teacher education students' experiences, perceptions, and preferences co-determined program outcomes. What is more, when novice teachers graduated with degrees and certifications and returned to the familiar territory of public schools, many tended to teach in the same ways they were taught.

Lortie's conclusion has special import in today's Neo-liberal environment. Teacher recruits' biography, particularly their experiences as K-12 students, superseded efforts by teacher educators and impeded the achievement of innovative goals for teacher education programs. So much for the value-added effects of teacher education!

Immediate Implications

Lortie's research contributed to an expansive conceptional framework with use-values for all manner of professions. Others' theorizing and research (e.g., Lawson, 2019b; Mora & Lawson, under review; Johnson, 2019; Richards, et al., 2019) can be joined in a theoretical framework founded on two key distinctions.

First: Professional socialization, which begins with student attraction and selection mechanisms and continues over the course of a career, is the superordinate concept.[21] Professional education, time-limited and bracketed by the university (at least in the 20th Century model), is a subordinate concept. We conflate them at our own peril. However, both have

import in research and program evaluations structured to discover the value-added impacts of degree programs.

Second: Students are active agents in their overall socialization and specialized education. Demonstrable, value-added effects of professional education hinge in part on engaging them as partners and persuading them to accept shared responsibility for program outcomes.[22] Absent explicit strategies—professional education program interventions—to elicit students' implicit theories, listen to their voices and afford them choices—their professional socialization may operate "under cover". Freely translated, while some will accept and internalize professional education content, others will engage in short-term compliance and impression management—for example, passing tests and jumping over curricular hurdles. In fact, some will by-pass the kinds of serious personal-professional investments and engagement strategies required for the mastery and internalization of warranted knowledge, values, sensitivities, and skills, helping to produce an emblematic social identity (Oyserman, 2015).[23]

Absent explicit program designs in Kinesiology founded on professional socialization, professional education, and student agency; and with program structures, pedagogies and learning systems and quality controls explicitly designed, implemented and evaluated as intervention mechanisms; Kinesiology's degree programs have a high probability of having limited impact. Like Lortie's schoolteachers, what you see today in the worlds of Kinesiology practice may be what you'll get tomorrow.

Although some social reproduction is desirable and predictable, two sources of reasonable doubt merit consideration: (1) the overall lack of professionally-developed and enforced standards, operationalized in measurable, performance-based outcomes; and (2) The

absence of policy-related quality assurance standards and controls. Both priorities may be viewed as centerpieces in this conference's agenda to provide leadership beyond the walls.

A Conceptual Framework for Professional Socialization and Education

It is timely to formulate and launch a research and development agenda focused on professional education as structured by the umbrella-like framework known as professional socialization. Planning for, and evaluations of, both necessitate cross-sectional and longitudinal investigations focused on two priorities: (1) Kinesiology graduates' knowledge, skills, values, moral imperatives, and professional ethics; and (2) Their career identities.[24]

Identity development is a special, but oft-neglected priority, and it is germane to all manner of professions. The salient construct is "induction". Freely translated, a professional induction occurs when a student's personal and professional identities are inseparable.[25]

Such a professional induction occurs in two related stages. Professional education is stage one. Employment is stage two. Together they merit research and development focused on the value-added effects of professional education. They also invite timely analyses of professional education's longitudinal effects, particularly the extent to which initial employment reinforces and strengthens a desirable identity; or whether employment is associated with "wash-out effects"—whereby real-world experience invalidates professional education.

Four incentive structures are facilitators for this research and development agenda. First is faculty members' professional (ethical) responsibility to evaluate continuously in order to learn, gain knowledge, and improve.[26] The second is the opportunity afforded to faculty members with expertise in curriculum design, pedagogy, and program evaluation to launch and advance a timely research and publication agenda with local and national significance.[27] Third: The knowledge produced, disseminated and used responds to current and future Neo-liberal

policy imperatives to document the value-added effects of professional education. The fourth incentive is the most important one: Undergraduate and graduate students' professional education and overall professional socialization promise to be enhanced and improved, promising beneficial, ripple effects outside the university's walls![28]

Figure 1 presents a new conceptual framework for professional socialization and education developed for this national conference.[29] After important contingencies are presented, three central components are described briefly.

Insert Figure 1 Here

Emergent contingencies. Dominant and emergent models and frameworks for professional education are founded on two implicit, inherited assumptions. First: Professional education is place-based and proceeds primarily in university-hosted classrooms and laboratories. Second: The majority of undergraduate students come from the established education pipeline, i.e., they enjoy immediate and direct transitions from high school to higher education institutions. These two assumptions are part of the foundation for Figure 1.

However, contemporary developments pose challenges to these assumptions and necessitate alternative frameworks for professional education, and by extension, professional socialization. While these new developments and the frameworks they implicate are not analyzed here, it is important to identify them in service of future research and development.

On-line learning courses and entire degree programs are the first development, and consideration of them leads to the growing number of digital age learning technologies (e.g., "wearables"; ZOOM & SKYPE networking). Together these innovations invite and enable student enrollments which are not confined to the host university's particular social geography. They also generate penetrating questions about place-based professional education with lock-step

curriculums predicated on a four-year undergraduate degree experience (Goodyear, et al., 2019). Questions abound regarding how these recent developments influence professional socialization and education research, development, and evaluation, while inviting and ushering in new strategies for student engagement (e.g. Bennett, 2018).

The second development concerns the demographic profiles of students, including ones who seek entirely on-line degrees. Today's students, particularly undergraduates, increasingly represent diverse populations. Many have developed personalized and stylized socialization strategies for social inclusion and academic success (Johnson, 2019). Questions abound regarding their strategies for social inclusion and integration in professional education programs; and with a reminder that the increasing diversity of the overall population necessitates companion diversity in the Kinesiology workforce.

Students' diversity can be approached and analyzed in another way: Their age and prior experience. Owing to variable combinations of employment insecurity, job redesign, new career opportunities, and personal aspirations, at least 47% of today's undergraduate students are 45 years of age or older (Whalen & Edgar, 2019). Presumably, adults, particularly ones with previous vocational experience, differ from 18 and 19 counterparts who enter higher education immediately after high school graduate. Whether these older students are "late deciders" or "career changers", their demographic characteristics influence how they frame career plans and respond formal and informal mechanisms for professional socialization and education.

A third development is two-sided. Worldwide inherited jobs are disappearing and undergoing redesign, while new job career opportunities associated with the global economy are developing (OECD, 2019). This development raises two questions. (1) Do career-changers, especially adults 22 years and older, require some manner of customized professional

socialization and education? (2) To what extent are currently-announced Kinesiology careers at risk of imminent elimination, whether by obsolescence or as a result of formidable competition?[30]

Alongside such indicators of student diversity, a defining feature of professional socialization and education, emphasized in Figure 1, holds across student populations. Students have agency, and they exercise it alone and together.

Student agency. In contrast to 20th Century frameworks predicated on twin assumptions about the disciplining power of walled-in professional education programs and students as "malleable putty", Figure 1 presents students as active agents. They are co-constructors of their learning, development, and program outcomes. Students make meaning of and assign value to all professional education experiences. Individually and together they draw on their prior experiences, preconceived ideas and career plans.

In brief, student agency renders it risky and dangerous to assume that passing courses and completing a program completion are evidence of the value-added effects of professional education. All such questions nominate Professional socialization research and professional education program evaluations as practical necessities. Fortunately, rigorous scholarly and evaluation initiatives are publishable, offering an incentive for faculty and graduate students.

Extra-program student agency. A recent study of the professional socialization and education of undergraduate engineering students yielded two findings with import for Kinesiology's degree programs (Mora & Lawson, under review). These findings are associated with a 21st Century, learning-rich external environment, ripe with digital age teaching and learning technologies and opportunities to form, join and benefit from social networks.

To begin with, individual interviews with faculty participants and students nearing the end of their degree programs yielded a significant finding. They concurred on a central program priority and outcome. Faculty emphasized learning how to learn, enabling students to solve practical, engineering problems post-graduation. Students emphasized the same priority. This is a profound finding because it implicates a pivotal question for Kinesiology. Would studies of faculty, students, and programs yield comparable or similar consensus?

The second finding also has immediate and direct import to Kinesiology. Engineering students exercised their agency when they completed on-line courses, sought out and benefited from additional internships, and formed student-led, networked communities of practice for mutual teaching and learning as well as career development.

However, faculty participating in the study apparently were unaware of these developments. Consequently, they were not positioned to know how and why some of these student-led innovations arose from student perceptions of program gaps and even student dissatisfaction. Nor were participating faculty positioned to know how students' initiative (agency) in pursuing professional learning outside the formal curriculum might have facilitated course substitutions, accelerated program completion, and prompted revisions in the undergraduate curriculum and its signature pedagogy.

Does this pattern hold in Kinesiology departments? Have faculty members positioned themselves to address this question? Answers have import for each specialized career track's program design and for its' signature pedagogy (Shulman, 2005).

Signature pedagogy. Every professional education program, alternatively called "the curriculum", provides an influential structure for faculty members' teaching and students'

learning. Employing a human body metaphor, the curriculum is professional education's anatomy.

Faculty members' implementation of the program/curriculum, particularly their teaching and learning preferences and strategies, are professional education's living systems. Pedagogy is the program's physiology.

Five questions introduce this important area of inquiry and practice, and they implicate others. How do professors design instruction and teach? Do their preferences correspond to how their students learn? To what extent is formal mentoring an integral part of a signature pedagogy (National Academy of Sciences, Engineering, & Medicine, 2019a), particularly for students committed to careers as scientists? Do professors associated with specialized programs meet regularly to reach basic consensus on commonalities, similarities, and the parameters for justifiable variability? Do professors have access to and use data collected in response to these questions? These questions and others they implicate are germane to professional education programs in every field.

These questions and others were instrumental in Shulman's (2005) development of a path-breaking and forward-looking signature pedagogy framework. He claimed it has import for every professional education program,[31] but with an important contingency. Alongside assumed generalizability, the "signature" in the label signifies that every profession's pedagogy is somewhat unique. By extension, the signature pedagogy for teacher education will differ from the signature pedagogies for physical activity leadership and sports medicine.

Essentially, a signature pedagogy provides structural and operational guidance for what it takes to think, talk, and act as an exemplary, specialized professional. This pedagogy is founded on the core assumption that the knowledge, values, sensitivities, and skills students learn,

internalize, transfer, and use post-graduation in practice and policy advocacy hinges in part on how, when, and where they learn them.[32]

Furthermore, signature pedagogy must be customized for the requirements, demands, and opportunities for prescribed and developing work roles in specialized fields of practice. To reiterate: Alongside justifiable commonalities, the signature pedagogies for a sports medicine specialist, a sport management professional, a physical education teacher, and an exercise prescription consultant must be to some extent, career- and role-specific.[33]

Shulman offered three main aims for professional education and recommended them as foundational for planning for, and evaluations of each profession's signature pedagogy. The aims are *to think* (before, during, and after practice), *to perform* (i.e., competency—doing the correct things, at the right times, for justifiable reasons, and achieving desirable results), and *to act with integrity* ("right conduct"—implicating ethical requirements and moral standards). These three aims can be applied immediately and directly in evaluations of Kinesiology's degree programs and inspections of faculty members' pedagogical preferences and practices. [34]

Signature pedagogy, framed and defined in this way, has three structural dimensions (Shulman, 2005). Box 1 presents an amended version with a special enhancement—the idea of a threshold concept. It invites professors and their pedagogical partners to determine the extent to which identifiable concepts are, for students, like portals or gateways to previously inaccessible ways of thinking and learning (e.g., Tight, 2014).

In brief, threshold concepts, once understood by students, may be boldly transformative. Like "paradigm shifts" for scientists, threshold concepts may change worldviews and discourses, fuel curiosity, drive professional learning, and facilitate knowledge integration and application. They merit collective attention and action in professional education;[35] and with special interest

in, and measurements systems for, the extent to which professional education is associated with students' desirable performance adaptations (Baard, et al., 2013).

Insert Box 1 Here

In the same vein, Kurt Lewin's (1951) action learning cycle offers opportunities to identify and build on threshold concepts, facilitate learning, and evaluate performance adaptation. It is depicted in Figure 2. It implicates a signature pedagogy with broad applicability to individuals and groups. In all cases, pedagogy proceeds as implicit theories and naïve career plans, oftentimes formed in the recruitment phase of professional socialization, are subjected to critical inquiry on the way to appropriate revisions during professional education, whether in classrooms, laboratories, or gymnasia and playing fields. Students' learning needs and styles are the drivers for professors' pedagogies, recommending strategies other than lectures.

Insert Figure 2 Here

Last, but not least, Shulman connected signature pedagogy to each field's epistemology—its parameters, criteria, and rules for determining knowledge. It includes the mechanisms whereby students learn how things become known. In Shulman's words, signature pedagogies: "…define how knowledge is analyzed, criticized, accepted or discarded. They define the functions of expertise in a field…" (Shulman, 2005, p. 54).

Here too Shulman's analysis raises consequential questions for professional education. Are students merely knowledge retrievers and users? Or are they also knowledge-generators? What preparation do they gain for knowledge generation in the variable worlds of practice—outside higher education's walls? To what extent are today's graduates prepared to share their epistemological frameworks with previous graduates who received little or no such preparation?

These questions are associated with a special priority in today's knowledge-intensive society—the need to keep pace with new developments and be able to implement knowledge-related innovations in appropriate and justifiable ways. A 20th Century concept is salient: *Knowledge obsolescence*. It raises three profound questions. For how long and under what conditions will today's graduates remain in good currency vis-à-vis the knowledge bases for practice and policy? Mindful that some such responsibility rests with professional associations, have faculty members equipped them for this priority? Are faculty committed and supported?

Immediate Implications

Framed by Figure 1, four additional clusters of questions merit attention and action. One focuses on students—Kinesiology's recruits. The second draws attention to programs and faculty. The third emphasizes a distinction between a teaching system and a learning system. The fourth concerns what counts as important and useful knowledge in all manner of professional roles and operations.

Student assessment systems. First the students: What are the attractors (i.e., personal-social "magnets") for potential recruits? What are the social mechanisms which facilitate applications, admissions and ease entry into professional education? What are recruits' worries, doubts, needs, and barriers? Are they receptive to program designs and curricular experiences, or are they after a credential which provides a vocational ticket? Are their career decisions firm or tentative? Have they done their homework on the fit between their career maps and plans and the host Kinesiology degree program structure? Although these questions were developed for undergraduate education, modified versions are salient for master's level and doctoral education.

These questions about students' professional socialization also recommend an assessment system in Kinesiology units in the neo-liberal university. Student learning and professional

development, individual and collective, depend on part of the correspondence between student needs and aspirations and program designs—viewed and developed as interventions. What is more, it is difficult to demonstrate the value-added impacts of professional education absent data at baseline—when students are selected and admitted.[36]

Evaluations of degree programs. The orientations and actions of Kinesiology faculty and degree program configurations also merit examination and strategic action. What are the main student recruitment mechanisms? How are recruits evaluated and selected for admission? Do degree program designers—mainly Kinesiology faculty—assume that all are "blank slates"; or are there mechanisms for advanced placements and accelerated learning/professional development? What data are collected at the beginning of degree programs, and how are they organized, disseminated and used? What transitional assistance, social supports and resources are available, and how are they allocated and implemented?

Do Kinesiology faculty regularly revisit essential program design questions regarding curricular coherence and alignment, cross-course connections, learning-content progressions, and program outcomes?[37] Do they focus on essential issues regarding signature pedagogies for each career preparation program? To the extent that a core curriculum is featured (Lawson, 2007), what are the measurable outcomes and how do they articulate with professional education competency development, signature pedagogies, and accreditation standards? What are the evaluation priorities for this consequential recruitment-selection-transition period? Who has primary responsibility? And how are evaluation findings used to learn, improve, and enhance program configurations? Accreditations? Who makes this happen and how frequently?

Training systems versus learning systems. The third question cluster derives from an important distinction, and it gives rise to another. At one end of a continuum lies an inherited,

professor-led, course-driven, instructional system (aka "professional training"), including a lock-step curriculum with pre-planned course progressions and professors' preferred pedagogy.

At the other end is a student-driven learning system, enabled and propelled by digital age opportunities and technologies for "anytime, anywhere, anyone learning"; and one not restricted to the host college and university's programs, course offerings, and timetables (e.g., Bennett, 2018; Goodyear, et al., 2019; Lawson, in press).[38] This companion system dovetails with several, emergent neo-liberal university characteristics and priorities.

This system also may facilitate acceptance and implementation of the aforementioned initiative for credential transparency and reform. To reiterate, advocates for this system stipulate that all manner of career-relevant learning, especially learning outside the university's walls, should "count" in in degree requirements and time toward completion. The popular digital age slogan—"anytime, anywhere, anyone learning"—merits special attention. It introduces a companion, expansive conception of signature pedagogy, professional education, and continuing professional development for experienced professionals.

Basic Questions of Epistemology. Shulman's signature pedagogy emphasizes professional education's structure for determining and imparting formal knowledge. However, his account glosses over important differences and omnipresent controversies associated with epistemology—i.e., what counts as knowledge, including who makes determinations and how.

Mindful of the risks associated with the following claims, Kinesiology's inherited models of professional education and accompanying signature pedagogy tend to be bounded by the university's walls. The dominant epistemology, derived from the model of an arts and sciences discipline, focuses on *knowledge for practice*. Assumptions regarding practice homogeneity and knowledge generalizability are implicit drivers.

A competing framework is founded on alternative assumptions. To begin with, *knowledge for practice must be derived from practice* (e.g., Rein & White, 1981). This assumption suggests that today's Kinesiology students must be prepared for reflective and reflexive practice, which unites practice, knowledge generation and use (Schön, 1983; 1987).[39]

This special framework for practice epistemology also assumes that variability is normative; and that the knowledge base in preservice education is destined to remain incomplete and inadequate in relation to the multiple demands of practice in diverse organizational and community settings. This framework also is predicated on assumptions regarding uncertainty, doubt, and the importance of emotional labor in professional practice. These several assumptions and others they implicate can be joined in critiques of the inherited idea that walled-in university classes, designed and conducted by specialist professors who rely on lectures, are the essence of professional education.

These epistemological differences are not restricted to Kinesiology. They are of interest in nearly every discipline and helping profession. Two concepts—Mode 1 and Mode 2 knowledge—offer opportunities to dig deeper into the aforementioned epistemological questions. Although these two types of knowledge are not mutually exclusive, an ideal-typical comparison (Hearn, 1975) offers enlightened perspectives for consequential determinations regarding professional education and professional socialization.

Exploring Mode 1 and Mode 2 Knowledge Systems

Worldwide the Neo-liberal university prototype is associated with profound policy changes and innovative developments regarding the roles and responsibilities of higher education. In contrast to the 20th Century image of the Ivory Tower University with its protective walls for faculty members' academic freedom, policy innovations and new public

expectations give rise to formal requirements for publicly-assisted higher education institutions to demonstrate their contributions to the host society's needs, problems, and opportunities. A 1980's European report announced this gap. *Society has needs and problems; universities have academic disciplines* (Lawson, 1999). Freely translated, societal priorities required a new knowledge system, but higher education institutions were not ready.

Mode 1 and Mode 2 Knowledge Systems

As the 20th Century drew to a close, an international team of higher education scholars (Nowotny, et al, 2003) noticed and began to describe and explore three shifts: (1) Changing relations between higher education institutions, particularly universities, and their host nations, states, provinces, and salient international alliances such as the European Union; (2) A major shift in governmental science policies and funding opportunities; (3) An expanded view of what counts as knowledge—"epistemology"—and with a special priority for knowledge's instrumental value in meeting human needs and addressing societal problems—local, regional, national, and global. All are associated with Neo-liberalism, and all continue to gain policy and practice momentum worldwide.

Two consequential shifts merit special attention. Science policy at all levels of government increasingly has moved away from the industrial age, basic research-to-practice model, centered in university-based and -linked laboratories. Increasingly policy favors a problem-solving model which prioritizes research and development in real world settings.[40]

Insofar as higher education, particularly research-oriented universities, have been reluctant or unable to make attendant changes, funding for problem-solving research in real world settings increasingly also has shifted to private sector research firms, non-profit research

organizations, and charitable foundations with research and evaluation capacities. Increasingly, the universities either have been excluded or relegated to the role of partner organization.[41]

These twin shifts implicate a profound shift in epistemology—i.e., what counts as knowledge, including the mechanisms for its generation, application, dissemination, and use. Toward this end, Nowotny, et al. (2003) developed the Mode 1/Mode 2 classification system.

To reiterate, Mode 1 refers to knowledge associated with the industrial age research and development model of the 20th Century. With logical positivism as the philosophical foundation, it is discipline-specific and prioritizes scientific and scholarly understanding gained via distanced, objective analysis. It might be called "know what and why knowledge." Arguably, 20th Century Kinesiology, the science of human movement, was fashioned in this mode.[42]

Mode 1 knowledge is founded on and promotes a knowledge development and use chain. The sequence starts with objective, distanced, and impartial social analysis before proceeding to applied laboratory research and effectiveness research in extra-university settings. Practicing professionals in external settings, in Mode 1, are users of scientific, generalizable knowledge. Their main responsibility lies in implementation fidelity and continuous quality improvement.[43]

In contrast, Mode 2 knowledge is holistic, integrated, and explicitly structured to be useful in framing, naming, and addressing complicated needs and complex problems. Founded on the practical philosophy known as pragmatism—and operationalized in some circles as procedural knowledge ("know-how")—it emphasized problem-solving research. While rigor remained important, Mode 2 knowledge's instrumental values mattered most.

Mode 2 knowledge development proceeds with the core idea that a growing number of needs, problems, and opportunities are characterized by fuzzy boundaries, endemic complexity,

some measure of context-dependence and specificity, and requiring knowledge and understanding that transcends any academic discipline's boundaries and knowledge jurisdictions.

Problem-solving Mode 2 knowledge thus is at least interdisciplinary and oftentimes transdisciplinary (e.g., Wright, et al., 2015).[44] And because it is derived from real world settings in response to needs, problems, and opportunities; and because practicing professionals were partners in the research and development process, the knowledge co-generated by university researchers and practicing professionals promised immediate applicability and use-values, albeit oftentimes with context-dependent warrants.

Put another way, from the outset Mode 2 knowledge is designed and structured to be comprehensive, integrated and "actionable"[45]. Mode 2 also reflects and promotes a new framework for viewing and improving relations between university professors and practicing professionals. Instead of the 20th Century metaphor of two communities (Lawson, 1985), Mode 2 featured a collaborative, research and development agenda featuring teams of university professors, practicing professionals, policy leaders, and even representative funders working together to simultaneously generate new knowledge as practice proceeded in extra-university social settings. Some of these Mode 2 configurations featured practicing professionals as co-researchers,[46] oftentimes emphasizing apprenticeships in external settings. Others added young people, lay adults, and family systems to the research team.

Table 1 provides a summary comparison of selected characteristics of Mode 1 and Mode 2 knowledge, albeit with a caveat. They are not mutually exclusive, especially in today's colleges and universities.[47] For example, both proceed with goals for replicability and reproducibility (National Academy of Sciences, Engineering, and Medicine, 2019b), and faculty

known as boundary-crossers and bridge-builders frequently aim for both as they contribute to university-wide outreach and community engagement initiatives (e.g., Lawson, 1998).

Mode 1 and Mode 2 knowledge relations need to be mapped and featured in determinations of Kinesiology's missions, and goals; faculty compositions-specializations; plans for professional socialization/education, research and scholarship; and initiatives that advance leadership beyond higher education's walls, particularly outreach and engagement partnerships and digital age social networks.

Perhaps above all, when potent combinations of Mode 1 and Mode 2 knowledge contribute to the human well-being in a good, just society they announce Kinesiology in a new way. Whether this discipline's contributions stem from basic research in exercise science laboratories or field research conducted in schools and community agencies, Kinesiology's value-added effects nominate it as a helping discipline (Lawson, 2016a).

This special designation differentiates Kinesiology from arts and sciences disciplines which lack such explicit missions and demonstrable impact. Differences between a helping discipline and an arts and sciences discipline extend to whether and how Kinesiology's faculty members and students seek and complete leadership beyond the university's walls, adding unique, important value to programs, services, and public policies.

Insert Table 1 Here

Special Provisions with Mode 2

Notwithstanding Mode 1 and Mode 2 relations, two noteworthy differences must be emphasized. One pertains to organizational structure and operations, while the other concerns professional socialization and education.

Mode 2 knowledge systems depend on and facilitate outreach and engagement partnerships and vibrant social networks (Wenger, 1999; Wenger, et al., 2011). These partnerships are predicated on a core idea—simultaneous improvement, redesign, and renewal (Lawson, 2018; MacPhail & Lawson, 2020; Nash, 2019).

The rationale starts with the value-added effects of professional education. Change preservice professional education programs without companion initiatives in external settings, and one unanticipated result is that real world experience in inherited, sub-optimal organizations probably will "wash-out" the effects of professional education. Reciprocally, change real world practice without coordinated innovations in professional education, and one unanticipated result is that every new employee must be re-oriented and trained to specifications. Furthermore, when these two conditions prevail, the research enterprise is "out of sync" and perhaps isolated from practice realities and policy needs.

A second difference involves professional education's signature pedagogy. Mode 1 signature pedagogy tends to be bracketed by the university's walls, monopolized by professors, and proceeds with a specialized curriculum progression that starts with basic understanding before emphasizing applications and practice competencies. Mirroring the model for arts and sciences disciplines, late 20th Century Kinesiology increasingly was structured in this way. The broad focus on the study of human movement was accompanied by an important curricular revolution. Performance classes (activity classes) increasingly were replaced by instruction in classrooms and laboratories.

In contrast, Mode 2 signature pedagogy immediately focuses on practice competence, emphasizes role performance, and proceeds with a priority for ecological validity. An implicit assumption needs to be made explicit: *What students learn and internalize in service of future*

professional practice (i.e., professional knowledge) is a function of how they learn it, where they learn it, when they learn it (i.e., timing and sequencing matter), and the learning supports and practice guidance provided by knowledgeable practice experts. Mode 2 signature pedagogy thus recommends early clinical and field placements for students, relies on expert professionals employed in external organizations as teachers, instructional coaches and mentors, and necessitates professional education innovations structured to harmonize and synchronize student learning in universities and communities.

Such a Mode 2, collaborative signature pedagogy, facilitated by a partnership-enhanced professional education program and a solid overall professional socialization framework, offers three benefits. It builds capacity for performance-based accountability assessments and evaluations focused on Kinesiology's value-added effects. It aligns with student agency and offers digital age learning and performance opportunities. And it provides formal structures for faculty and students to provide leadership beyond the walls, while simultaneously safeguarding and advancing its privileged position in higher education and America's system of professions and their respective employment jurisdictions.

Nevertheless, consequential choices and viable alternatives, implicated in this Mode 1-Mode 2 comparison, should not be lost from view. To reiterate, these two kinds of knowledge are not mutually exclusive. Where professional education programs and signature pedagogies are concerned, Mode 1 fosters a deliberative orientation founded on whether, what, and why questions; while Mode 2 fosters a technical, problem-setting and -solving orientation (e.g., Lawson, 2009).

Leadership Beyond the Walls to Secure a Desirable Future

The preceding analysis, lengthy and complicated, was structured in response to three related priorities. One was the need to initiate and use the results from SWOT analyses of internal structures and operations in tandem with scans of external environments. The second was framed by Drucker's (2009) theory of planned abandonment, capsulized in his generative question: If we hadn't inherited it, would we do it this way?

A third priority, implicated in several parts of the preceding analysis, invites immediate attention and strategic action. Neo-liberalism's opportunities and threats associated with Kinesiology's specialized careers (e.g., sport management, physical activity leadership, physical education teaching) merit specialized analyses, including accompanying public policy agendas.

Fortunately, international analyses of threats posed to school physical education programs are available and function like early warning systems (e.g., Evans & Davies, 2014, Macdonald, 2014; Kirk, 2014). Perhaps they will facilitate comparable analyses in Kinesiology, particularly as resources are constrained and competition for them grows.

Resource Dependence Remains a Driver in Neo-liberal Environments

External environments will continue to matter, starting with public policy and encompassing higher education policy. Neo-liberalism overall and its special manifestations in the Neo-liberal university prototype emphasize performance-based and outcomes-based accountability structures and mechanisms. Omnipresent in the public sector and with growing prominence in higher education, there is no apparent or immediate escape from its structures and operational demands. Together they can be named "outside-the-walls mandates for higher education's missions, governance and management". More than symbolic directives, these policy initiatives prioritize and introduce funding directives and incentives.

Resource dependence theory offers an enlightening, analytical frame (e.g., Pfeffer, 1982). It helps to explain why higher education institutions tend to conform to Neo-liberal mandates. The logic is clear-cut and pragmatic.

Organizations such as higher education institutions depend on resources. These resources are controlled and allocated by other organizations such as federal governmental agencies and funders (e.g., charitable foundations). Because these agencies control resource allocations, they enjoy two kinds of power: Resource allocation power and the power to reward, discipline and punish. Power and resource dependence thus are connected. Together they provide a lens for twin examinations of external influences on public higher education and their extensions and manifestations inside universities and colleges.

Fortuitously, these external mandates can be reframed as opportunities for innovation—at which time they can be re-directed to facilitate two related changes: (1) higher education's leadership outside the walls; and (2) Kinesiology's missions, goals, research agendas, and degree programs. Both may be launched in response to, and in anticipation of, societal needs, problems and opportunities, particularly those associated with economic and social development. The reminder here is that Kinesiology has important, specialized roles to play in overall human development and human capital development ("workforce development") in the global economy.

From Mandated to Voluntary Accountability

Confronted with governmental disciplining power and authority operationalized in external mandates, it may be easy to ignore and neglect two related priorities: (1) Voluntary accountability mechanisms, starting with outcomes and including research and scholarship priorities and professional socialization/education designs and operations; and (2) The social responsibilities of Kinesiology departments and their host universities.

These twin priorities give rise to important questions for futures-planning, and their import extends to leadership beyond departmental walls. For what are you prepared to be accountable? To whom? What about your department? Your degree programs? Faculty research and scholarship agendas? For example, are faculty members, like professional athletes, free agents?[48] Or, is there a coherent, collective action research agenda, which includes explicit goals for its' value-added effects and prioritizes the simultaneous development, use, and dissemination of both Mode 1 and Mode 2 knowledge in external settings? What quality assurance and control mechanisms are operational?[49] What are the roles and responsibilities of national professional and scholarly associations?

These questions shift attention from implementation planning to quality assurance and control mechanisms, which are deemed fit for purpose in the Neo-liberal university. The flip side of quality assurance and control, easily overlooked, merits special attention, especially in comparatively small departments with limited resources. Employing Neo-liberal discourse, there are manifest risks and dangers of "false advertising" and even "academic fraud" when a degree program lacks a critical mass of expert faculty and high quality students as well as sufficient resources to achieve quality in teaching and advising, research and scholarship, and professional service, particularly outreach and engagement scholarship.

In fairness to people and programs that fit such a sub-optimal pattern, Kinesiology's origins and development in the last three decades of the 20th Century included bold claims about the generalizability of disciplinary knowledge—primarily Mode 1—to all manner of current careers and others envisioned. In today's societal contexts, all such grand claims without quality control and assurance mechanisms, especially practice and preparation standards, can be viewed as inheritances meriting immediate evaluation.[50] Guided by Drucker's recommendation to

examine and consider the elimination of inheritances, program deletion paves the way for selective excellence and innovation.

Meanwhile, competition for students is escalating as the traditional pool of college- and career-ready students continues to decline. Competition among colleges and universities, already fierce, is expected to intensify. In brief, Neo-liberal incentives for "body counts" may be working at cross-purposes with imperatives for quality control and assurance mechanisms. Beyond voluntary accountability by faculty, more rigorous and strictly-enforced accreditation standards and certification criteria are among the alternatives as Neo-liberalism proceeds.

Agenda-setting in the Neo-liberal University

Planning for a desirable future is agenda-setting in action (Lawson, 1984). Framed by internal and external SWOT analyses, it necessitates two discourse systems (Lawson, 2018).

Improvement (aka "reform)" language is the first one. Arguably, improvement discourse is a carrier and transmission mechanism for 20th Century inheritances. It might be framed as the path of least resistance because the defining features of "The Kinesiology System" essentially remain (Lawson, 2019a).

Design (redesign) discourse is the other (Lawson, 2018). It has import for bold practice innovations, public policy priorities, and a special genus of research (e.g., Peneul, et al., 2011). It is needed in in response to and anticipation of dramatic societal and institutional change, and it is prompted by Drucker's generative question. If the answer to his question is "no, we would not do it this way if we hadn't inherited it"; and total elimination is not an option, then redesign and entirely new designs are essential.

These two discourses and their respective agendas are not mutually exclusive. They are as germane to Mode 1 knowledge as they are to Mode 2. In other words, both discourse systems

can be used to frame and classify faculty research agendas. Both are needed in dynamic, inclusive agendas hailed as leadership beyond higher education's walls. It follows that both discourses must be centerpieces in professional education programs and emphasized in their specialized signature pedagogies.

Finally, both offer planning and discursive advantages for Kinesiology's faculty, students, and external constituencies in the Neo-liberal era. Together they comprise a foundation for a collective action agenda. This bold agenda that requires oversight by and contributions from international and national professional and scholarly associations. Mirroring institutional arrangements in practice, the time has arrived for collective action agendas developed collaboratively among these associations and mobilizing them for collective action.

Threats and Risks to Professional Jurisdictions and Occupational Monopolies

The origins and development of 20th Century Kinesiology were facilitated by other academic disciplines' and helping professions' benign neglect of sport, physical activity, sport medicine, sport management, and other examples of today's specializations. Predictably, undergraduate and graduate students interested in established and emergent careers have opted for Kinesiology. At the same time, Kinesiology's leaders, acting through professional associations, have secured growing legitimacy for this discipline, including its jurisdictions and boundaries.

Looming threats and manifest risks for a long-standing monopoly by credentialed physical education teachers may serve as portents of other undesirable developments. In all such cases, when Kinesiology's jurisdictional claims are not matched by measurable, desirable outcomes achieved at scale, professional status is threatened, and the groundwork has been laid for inter-professional competition and occupational take-overs.

School physical education and by extension, other programs and services claiming to promote and produce active, health-enhancing lifestyles among pediatric populations provide one example. School physical education-specific research (e.g., Ladwig, et al., 2018) and theoretical critiques (e.g., Lawson, 2018) can be joined to international research which documents insufficient physical activity among adolescents (e.g., Guthold, et al., 2019) and to shortcomings presented in the National Plan (National Physical Activity Plan Alliance, 2016).

Another example is provided by the so-called obesity epidemic "crisis" (National Academies of Sciences, Engineering, and Medicine, 2017; 2018). While Kinesiology experts know that physical activity is just one contributor; and they can identify contextual factors and describe justifiable variability, everyday people and policy leaders and makers do not have the advantages of specialized, professional expertise. In fact, their perceptions often reflect their experiences and priorities, providing opportunities for experts from other professions to proclaim needs for a new approach, which they spearhead (e.g., Dietz, 2019).

These two examples will have served their purpose if they stimulate colleagues to identify and explore the consequences of other looming threats and risks. Here too, accountability questions and mechanisms are implicated, both external ones and voluntary initiatives, and they lead to issues regarding the validity of marketing and promotion claims offered in the behalf of Kinesiology's degree programs. Amid growing inter-professional competition for all manner of Kinesiology jobs and careers, it is imperative that higher education leaders and leaders of scholarly and professional associations prioritize quality control and assurance mechanisms, extending to the social promotion and marketing initiatives undertaken in each host college or university.

No Escape and No Easy Answers

The Neo-liberal university prototype reflects and signals more turbulent times ripe with uncertainty and complexity. Alongside protests and strategies mounted to reduce its disciplining power, planning must be directed toward justifiable reactions and proactive strategies. Two endemic features of universities and helping disciplines such as Kinesiology are planning facilitators. They highlight influential constraints—forces and factors that recommend particular alternatives, while ruling out others.

Endemic structural ambiguity (Merton, 1968) is the first feature. In a nutshell, it is manifest when organizations such as universities and departments such as Kinesiology are surrounded by diverse constituencies with conflicting interests and competing goals. Here, influential actors and factors impede planning and decision-making on several fronts, including which programs to continue, reconfigure, and discontinue; how these decisions are linked to resources; and their impact on future directions for faculty and student recruitment. Predictably, dilemmas intrude into planning and decision-making, i.e., giving rise to the impression that "we're darned if we do, and darned if we don't." Perhaps planning is somewhat easier and better when it begins with acknowledgement of structural ambiguity—including the facilitators, constraints, and barriers associated with the Neo-liberal university prototype.

On the other hand, growing structural ambiguity and its manifestations in conflicting policy expectations and multiple performance requirements may give rise to a fundamental problem known as "mission drift" (e.g., Cornforth, 2014) This problem is likely to arise when university faculty and top-level officials lose sight of the most important and fundamental question (Spooner, 2014): What are the core missions and non-negotiable purposes of the 21st Century university?

Structural ambiguity can be linked to a second feature: Endemic dilemmas associated with professional education in all helping fields. Glaser's (1974) analysis of the "minor professions"—all except medicine and law—remains timely and useful for Kinesiology. Drawing on and extending his analysis, six endemic tensions merit analysis: (1) An unstable, fast-changing knowledge base; (2) Professors without practice experience are hired for their research prowess, but nevertheless must teach practice-oriented courses; (3) As a result of professors' preferences and expertise, programs feature Mode 1 knowledge, while students seek and need more Mode 2 knowledge; (4) Differences between students' career-focused priorities and faculty preferences, particularly their curricular preferences and pedagogical enactments, reduce the impact (value-added effects) of professional education programs; (5) Variable, often ineffective accreditation mechanisms for professional education, perhaps extending to certification and licensing mechanisms for graduating students, exacerbate quality assurance problems; and (6) Competition among national professional and scholarly associations reflects and fuels inherited divides in Kinesiology departments.

These tensions and others are implicated in Kinesiology's opportunities and challenges regarding specialization, alongside risks of problematic fragmentation (Lawson, 1991). Structural ambiguity gains new meaning in this context, and it introduces ethical questions with practical consequences. Whose needs, interests, priorities, and goals matter most? Faculty members'? Students'? External constituencies'?

Glaser (1974) provided an alternative which appears to be ready to be brought to be on evaluations of professional socialization/education and knowledge production in today's Kinesiology. When faculty members without professional practice expertise and experience are hired for their research prowess (i.e., for Mode 1 knowledge), while many or most of their

students seek career-relevant and useful practice knowledge (Mode 2), an unanticipated and undesirable outcome results. Said faculty excuse themselves from career-focused professional education. Instead they redirect their efforts to the preparation of sub-disciplinary specialists prepared in their own images (Glaser, 1974, p. 355). To the extent that this pattern is manifest in Kinesiology, it raises important ethical issues, reproduces problematic specialization and fragmentation, and constrains opportunities for leadership beyond the walls by students prepared for competent practice via practice-related combinations of Mode 1 and Mode 2 knowledge.

Consequential decisions thus are inescapable. For better and worse, there are no easy, generalizable answers.

However, important choices can be framed and identified, and the preceding analysis has been structured to frame and identify them. All are to some extent context-dependent, i.e., higher education's and Kinesiology's social ecologies matter. All invite and require collective action strategies (Lawson & Lawson, 2020). Four choices provide a suitable conclusion.

The first choice derives from an inherited, implicit framework for inter-institutional homogenization and standardization. Both are propelled in part by prestige-seeking imitation.

In contrast, incentives and mandates accompanying Neo-liberalism may serve as policy catalysts for inter-institutional differentiation, starting with the host college's or university's core missions and program compositions. If this path is pursued, manifest differences in Kinesiology by whatever name may be expected to increase, whether in response to external mandates or initiated by faculty intent on designing and implementing path-breaking designs. For example, Kinesiology as human movement science may be fit for purpose in a research-intensive university, while practice-oriented professional education called Sport Science or Physical Education may be more suitable for comprehensive universities and colleges. Degree program

specializations, compositions, signature pedagogies, and faculty members' qualifications will follow suit, contributing to inter-institutional variability alongside commonalities and similarities.

The second choice follows suit. Unlike the 20th Century view of a singular academic discipline, patterned after others in the arts and sciences and fit for purpose in all manner of higher education institutions, Kinesiology, already bearing several names, may be configured as a helping discipline with core missions to serve society's members (Lawson, 2016a). Toward this end, justifiable improvements in, and new designs for, professional socialization/education in tandem with innovations in Kinesiology's knowledge systems (i.e., fresh, better combinations of Mode 1 and Mode 2 knowledge) may provide opportunities for a helping discipline to provide leadership inside and outside higher education's walls.

The third choice emphasizes the art and science of design—and with Drucker's reminder. When inherited program structures, practices and policies are abandoned, new designs are needed. This claim holds for professional socialization and education, Mode 1 and Mode 2 knowledge systems, and leadership beyond higher education's walls.

Nash's (2019) framework for collaborative designs and distributed leadership structures and strategies in service of innovation has special relevance for higher education. The idea of students as co-designers with shared leadership corresponds to new roles for patients in hospitals and young people in P-12 schools. All need and want structures and opportunities for agency, i.e., "voice and choice".

The fourth choice derives from complicated, boundary-defying and -crossing human needs and societal problems. While sport, physical activity, dance, and play forms may be framed as isolated phenomena for highly specialized professionals, fast-changing individual,

family, and community realities necessitate collective action strategies (Lawson & Lawson, 2020). These strategies require an interdisciplinary knowledge base for practice as well as interprofessional education, which prepares Kinesiology specialists to collaborate with specialists representing other helping disciplines and professions (Lawson, 2016b).

Indicators of need are omnipresent. For example, the changing demographic profiles of American children, youth, elders, and family systems compel the preparation and support of boundary-crossing professionals with collaborative skills and abilities. Kinesiology's sub-disciplinary specialties (which connect faculty and students with other disciplines) may be developmental assets for this important work, but with a caveat. Pioneering collective action strategies require specialized Mode 2 knowledge and skills, much of which must be generated and tested outside the university's walls.

These four alternatives are not mutually exclusive. Meanwhile, nationally and internationally hybridization and inter-institutional learning and innovation continue to be fueled by the multi-faceted, homogenizing process known as globalization. Consequential choices are inescapable, and they need to be made in rapidly changing state/provincial, national, and international contexts. Mindful that there are no easy or ready-made answers, every department has much to gain by getting started; and also has lots to lose by continuing on auto-pilot. If my analysis helps to frame and contribute to this important agenda, it has achieved its primary aim.

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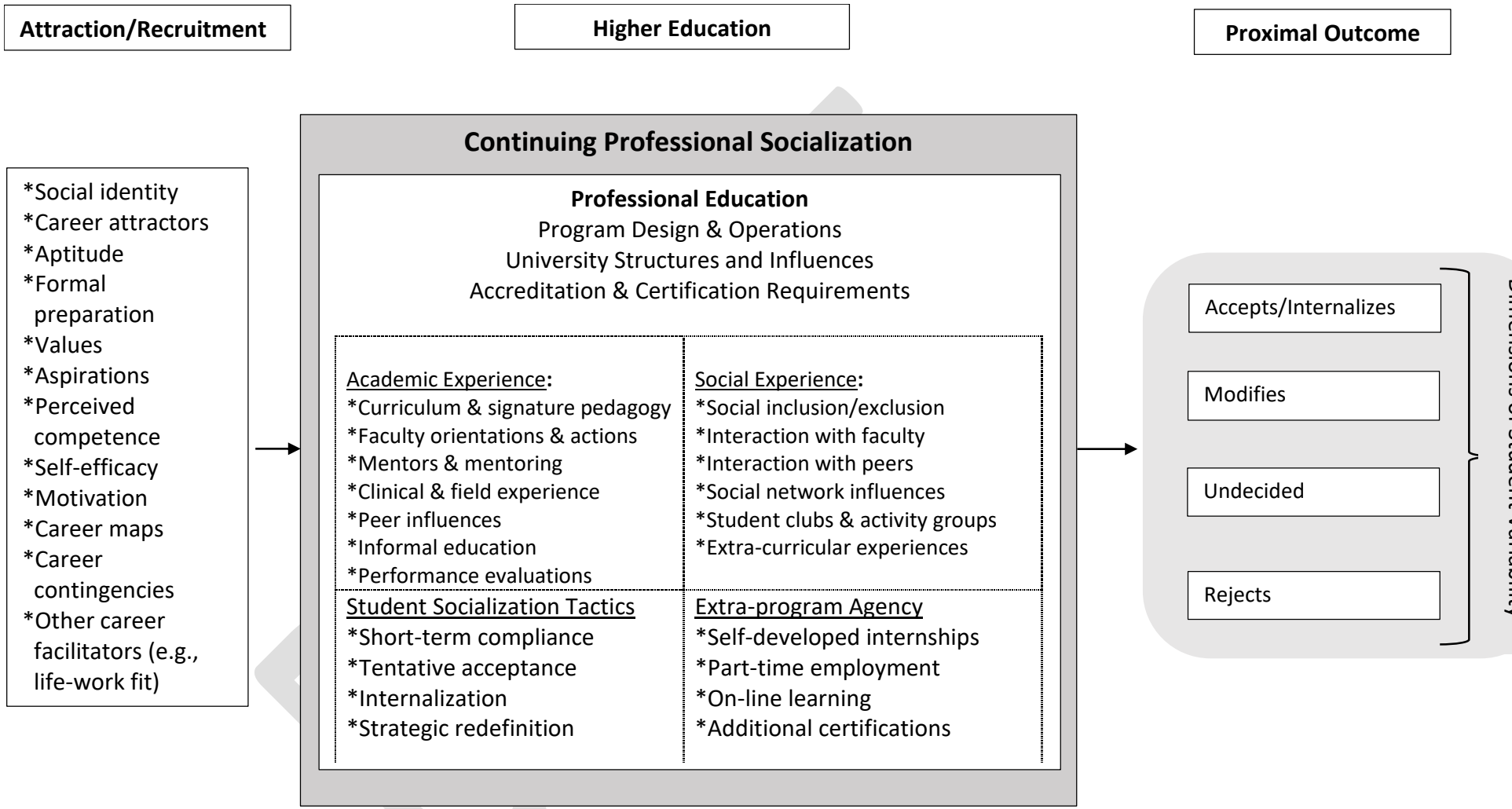
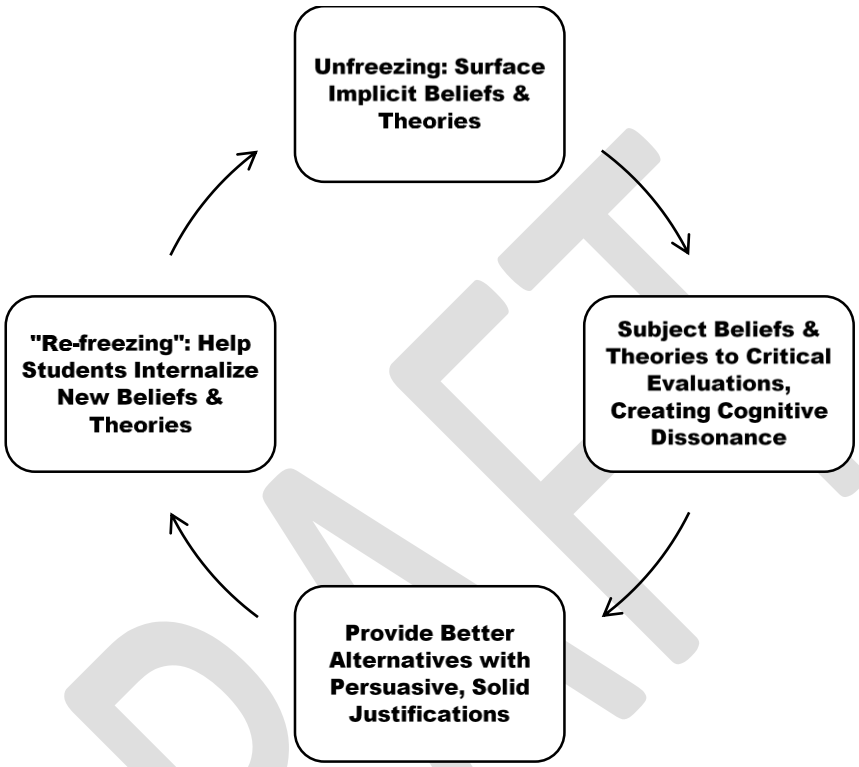


Figure 1. Professional Socialization and Student Agency Effects on Short-term Professional Education Outcomes

Figure 2. Lewin's Learning Cycle in Signature Pedagogies



Box 1. An Amended Framework for the Three Dimensions of Shulman's Signature Pedagogy

Surface Structure

- Concrete, operational acts of teaching and learning
- What these acts look like, require and entail "on the drawing board"
- What actually goes on in the classroom, labs, and performance facilities

Deep Structure

- Assumptions about how best to impart knowledge and practice know-how
- Assumptions regarding the threshold concepts for the knowledge base, including variations for specialized roles and careers
- Decisions about how the material will be taught and sequenced
- The advantage of choosing certain methods and practices over others

Implicit Structure

- The "hidden curriculum", including meta-messages, ethical imperatives and moral dimensions
- Beliefs about professional attitudes, values and dispositions—as outcomes
- The boundaries for teaching/learning and knowledge application/use

Table 1. A Selective Comparison of Mode 1 and Mode 2 Knowledge

Priority	Mode 1	Mode 2
Philosophical foundation	Primarily logical positivism	Primarily pragmatism
Knowledge Producers	University researchers	Researchers, evaluators, practitioners & others (e.g., funders & service users)
Dominant Discourse	From research in the disciplines to practice in the professions	From design & development in external settings to all partner organizations & social network members
Researcher Standpoint	Impartial, distanced, & value-free	Invested, engaged, & value-committed
Time Required to Develop Useful Knowledge	Many years, perhaps decades	Immediate production
Key Knowledge Warrants	Validity, Reliability, & Generalizability	Instrumental value, albeit possibly context-dependent
Role System	Researchers as knowledge generators & disseminators; practitioners as consumers	Faculty, practitioners, & other stakeholders are co-researchers
Locus for Signature Pedagogy	Primarily in place-based higher education curriculum	Higher education & external organizations
Knowledge Dissemination & Transport System	Broadcast models (e.g., journal articles, books, evaluation reports, websites, Research Gate, etc.)	Embedded learning organization mechanisms, partnership systems, social networks, & blogs
Boundary-crossing Intermediaries	University faculty & staff members	Practicing professionals & faculty
Host Organization and Network Hub	Universities	External organizations, including state/provincial governmental agencies
Money Trail for Grants	Big indirect costs with no direct external benefit	Modest investments in host organization's operating costs

Notes

[1] Ironically, all such forms of experiential learning under the supervision of expert practitioner once dominated professional education. Apprenticeships thus can be viewed as "back to the future" (Kretchmar, 2019).
[2] Recent research signals progress on doctoral candidates' preparation for teaching (e.g., Boyce, et al., 2019; Lund, et al., 2019).
[3] In the case of prospective physical education teachers, performance ("activity") classes continue to be viewed as sources for content knowledge and pedagogical content knowledge (e.g., Ward, 2013).
[4] These changes mark the decline of Physical Education as well as Kinesiology's influences on teacher education faculty and programs. This process is not done, and the accompanying controversies remain.
[5] A special genus of organizational theory known as the new institutionalism reframes standardization and homogenization as "isomorphism" and offers an explanatory framework (Greenwood & Hinnings, 1996).
[6] International prototypes also are salient, particularly the enduring priority for Physical Education and the emphasis accorded to Sport Science instead of Kinesiology. Differences in names suggest profound variability.
[7] For better and worse, every Kinesiology program sends "market signals" which impact the field overall. Excessive diversity and particularly limited quality controls over small programs with few faculty remain problematic.
[8] See Lorusso and Richards (2018) for an analysis of Neo-liberalism's growing impacts on the sub-discipline of physical education.
[9] Public schools and physical education programs also are evaluated and reconfigured. See Evans and Davies (2015) and Macdonald 2014) for internationally-relevant analyses.
[10] The apparent decline of Kinesiology departments in top-tier research universities can be evaluated in this light.
[11] Lorusso et al. (2018) discovered that many Canadian Kinesiology departments lacked the formal mission statements needed in the neo-liberal university. All North American departments need to take notice.
[12] A concept borrowed from interdisciplinary research may be fit for purpose. Bounded autonomy increasingly substitutes for unbridled academic freedom (e.g., Burkhauser & Lesaux, 2015).
[13] A new report ranks 4,500 colleges on the economic returns they provide for required student investments (Carnevale, et al., 2019). It offers students-as-consumers economic guidance for application strategies.
[14] To the extent that Kinesiology programs are structured to contribute to liberal education, Neo-liberalism's impacts also merit examination and strategic action (e.g., You, et al., 2019).
[15] Relationships with intercollegiate athletic programs (e.g., coaches who have appointments in Kinesiology) may become departmental safeguards in this environment.
[16] England's Research Excellence framework has import for American research-oriented universities. Cost-benefit analyses are employed to evaluate "value-added effects" beyond the university's walls.
[17] Are Kinesiology's professional and scholarly associations positioned and resourced to perform these key roles? They appear to compete, suggesting that an alliance is needed.
[18] Where Physical Education is concerned, three analyses raise important questions and identify gaps and needs (Lawson, in press; Lawson, et al., in press; Mitchell & Lawson, 2019).
[19] See Ward and van der Mars (2020) for a treatise on teacher education faculty members.
[20] Research on public school teachers provides an important perspective (Powell, et al., 1985). Pedagogy proceeds in part based on teachers' perceptions regarding what students will permit.
[21] Occupational socialization is the umbrella concept for professional socialization and reminds analysts that jobs and careers that do not require postsecondary education also are at play in the competition for recruits.
[22] Ferguson et al.'s (2015) study of high school students offers an action-oriented framework founded on twin concepts: Agency boosters and agency suppressors. Both have import for Kinesiology.
[23] Kretchmar's (2019) distinction is salient: Demonstrated student understanding via examinations and performances is not the same as "living it". Knowing how differs in some respects from knowing what and why.
[24] Alongside the dominant meaning of career as a series of jobs and roles, a second one merits attention: Career-as-identity. Schein's (1985) framework for career anchors is instructive for professional socialization research.
[25] The idea of a role identity is specialized and bracketed by a specialized line of work. A unified or integrated identity refers to holistic life-work relationships. These two identities need not be mutually exclusive.
[26] Since faculty members tend to emphasize this orientation with students, it is a reminder to "practice what they preach" in lieu of "don't do as I do, do as I say".

[27] When Kinesiology faculty members and their student assistants assume responsibilities for this agenda, the benefits include an important combination of resource efficiency (because outside evaluators are not needed) and enlightened faculty self-interest (e.g., tenure, promotion, merit salary increases).
[28] Shulman's (2005) conclusion about pedagogy is profound: "…the way we teach will shape how professionals behave—and in a society so dependent on the quality of its professionals, that is no small matter." (p. 59).
[29] Recent scholarship focused on the professional socialization and education of undergraduate students in engineering laid the foundation for this broader conceptualization (Mora & Lawson, under review).
[30] Physical education teaching is a visible example in the United States and other nations.
[31] It is reasonable, appropriate, and timely to require all doctoral students to read and discuss this short analysis and explore its implications for their careers in all manner of Kinesiology programs and pedagogies.
[32] So-called "activity courses" structured as learning laboratories have decreased overall. Perhaps students rely on co-curricular and extra-curricular experiences (Kretchmar, 2019). Who knows?
[33] Shulman did not address special opportunities in Kinesiology—namely, boundary-bridging with cross-fertilization. For example, coaching science pedagogy can be connected to sport education pedagogy.
[34] Every specialized Kinesiology career preparation program has a somewhat unique signature pedagogy—in Shulman's view. The implications for professional education in Kinesiology appear to be profound, particularly when faculty planners make assumptions about "generic"—broadly applicable—courses and programs.
[35] Threshold concepts frequently are connected to the idea of "troublesome knowledge"—as experienced by students. These concepts effectively circumvent and penetrate once-formidable knowledge barriers.
[36] Public school teachers increasingly are held accountable for data-driven decision-making and assessment-driven teaching and learning. Higher education is next in line.
[37] Formal program evaluations are needed—with questions regarding outcome-related metrics. Nominees include student learning outcomes, graduation and employment rates, and graduates' career achievements.
[38] Such a student-driven learning system also might prioritize the development of students' professional identities. Social identities connect who we are and what we do (Lawson, in press).
[39] All such questions regarding practice epistemologies also can be brought to bear on professors' pedagogies. Does their practice make permanent or does it facilitate continuous improvement and the development of expertise?
[40] Federal science policy in the USA has followed suit. The post-World War 2 agenda for basis research pioneered continues to decline as incentives have increased for problem-solving research in real world settings.
[41] Escalating indirect costs imposed by universities—consistent with the Neo-liberal prototype—have facilitated this shift. In this extra-university mode, more money is allocated directly to the research needing to be done.
[42] Kirk (2019) offered this observation and a related one: Kinesiology ascension was accompanied by reductions in physical activity performance classes. I return to this shift several times because it is important.
[43] The Neo-liberal policy environment adds a new requirement. Front-line professionals and their supervisors are accountable for implementing "evidence-based practices", which are assumed to be generalizable.
[44] Kinesiology (by whatever name) is positioned for interdisciplinarity because of sub-disciplinary specializations. Interprofesssional education is a logical derivative (Lawson, 2016b).
[45] Kurt Lewin's (1951) claim is fit for purpose: One of the best ways to understand any phenomenon is by trying to change it in naturally-occurring contexts.
[46] Community-based participatory research and participatory action research are two visible examples (Lawson, et al., 2015).
[47] However, noteworthy differences remain and merit examination. Sub-disciplines associated with the Humanities, especially history and philosophy, risk being omitted when Mode 2 technical knowledge substitutes for Mode 1.
[48] Archer (2008) anticipated this question, and her analysis of young(er) professors invites research on Kinesiology faculty members. How do today's early career faculty members construct their role identities?
[49] This general mandate necessitates quality control and assurance mechanisms for each degree program. It also implies program termination when assurances are absent, enabling resource reallocation for selective excellence.
[50] A small college in upstate NY, for example, employs two full-time, non-tenure-track faculty members who oversee 50 students distributed among sport medicine, sport management, fitness leadership and teacher education.