

EXCELLENCE IN
INNOVATION
WARD



Elon University

2018 Submission

“Sharing Expertise for Digital Credential Frameworks”

Introduction

Technology is not the sum of the artifacts, of wheels and gears, of rails and electronic transmitters. For me, technology is a system. It entails far more than the individual material components. Technology involves organization, procedure, symbols, new words, equations, and, most of all, it involves a mindset.

-Physicist Ursula Franklin, 1989 CBC Massey Lectures

Technological innovation is inextricably linked to its social context. It is embedded in cultural exchange, embraced in philosophical argument, and factored into economic decisions and political compromise. Put simply, technology does not exist in isolation. Though intuitive, this undeniable quality can be especially vexing for the modern university, an enterprise that must reconcile its legacy of scholarly retreat with the realities of the information age. As we adapt to the changing demands of the twenty-first century, we must think of educational technologies not in terms of specific tools and their applications, but in terms of how those tools might shift existing social, political, cultural, and institutional values.

The unstoppable proliferation of technology is transforming the very concept of education, but it is at the same time increasing its accessibility. More people than ever before are expressing a desire to attain advanced knowledge and skills, and the market (which did not formally exist a century ago) has responded in an enterprising fashion with a plethora of options. These days, when people talk about learning beyond K-12, the conversation includes cooperative education, six-month certification programs, massively open online courses (MOOCs), and coding boot camps. Options abound for the learner with spare time and a high-speed internet connection.

While this is nobly consistent with the ideal of democratizing higher education, the expansion of choice has unintentionally eroded the gold standard of academic equity: the credential. Students, the institutions they attend, and the employers that ultimately hire them have depended on the credential – namely, the academic transcript – to make decisions about educational quality and validity. This enduring record is still widely regarded as the most reliable indicator of academic success, but the diversification of educational opportunity has truly tested its capabilities.

In some cases, the academic transcript has proven incompatible with the propositions of new service providers. Coding boot camps, for example, cannot produce a record based on the Carnegie Unit unless they are affiliated with an accredited institution. Nonstandard learning outcomes and granular competency-based models typically require an innovative approach to record keeping. Unfortunately, among the many institutions that have waded into the territory of credential expansion there remains a lack of consistency. As posited by the [American Council on Education \(ACE\)](#):

[T]he diversity of credentials is not always meeting the needs of students, educational institutions, and employers, and unfortunately the proliferation of credentials is causing confusion. There is a lack of shared understanding about what makes a credential valuable, how that value varies across different types of credentials for different stakeholders, what constitutes quality, and how credentials are connected to each other and to opportunities for those who have earned them.

Higher education in the United States faces a dual dilemma: the requirement of choice and the challenge of standardization. While colleges and universities expand their offerings to compete with an onslaught of start-ups and “ed-tech” companies, they must also maintain the perceived value of their credentials, which are effectively a currency for their students in the job marketplace. Should an institution continue to build instructional capacity on campus or gradually shift to online delivery methods? Should it shoehorn new learning experiences into the academic transcript or cater to the marketplace with a badge? These and other questions put considerable pressure on institutions that find unsustainable release in hit-or-miss innovation.

Stakeholders (administrators, faculty, and students) often focus this pressure on registrars, imploring them to include more information on the academic record to distinguish the student experience and increase graduates’ competitiveness. This is challenging, as changes inevitably affect curriculum management, transfer credit exchanges, degree audits, and, of course, transcript production. Many registrars have resisted the change and struggled to maintain consistency as the market approaches a critical mass of credentials.

In doing so, however, they miss opportunities to present credential earners and users with useful information. Dr. Jennifer Engle of the Bill and Melinda Gates foundation portrays this situation well. She explains that while data

supports the long-term value of attending college in its many forms, “the problem is that prospective students, policymakers, and the public do not have answers to commonsense questions about whether and which colleges and programs offer a quality education at an affordable price” (Engle, 2016).

Dr. Engle substantiates this claim by describing higher education’s infrastructure as “a set of disconnected systems...none of which are able to fully provide the answers we need to pressing questions about student outcomes” (Engle, 2016). The answers certainly exist in some form at each college and university, but they are not codified in a transparent or transferable way. A common solution among those that address this dilemma at the institutional level is the addition of course attributes to the academic transcript that supposedly reveal more about the courses students complete. Designations such as "service-learning," "diversity-themed," "online," "hybrid," and "study abroad" are added either directly to the academic transcript or embedded as XML code.

There are and should be serious questions about these designations, as neither the setting of an experience or the experience itself imply learning. They are also functionally limited by the native parameters of the student information system, and decision makers often suffer a lack of agency to modify that system. In addition to technological limitation ("the student information system cannot accommodate this data, and we cannot afford another tool"), arguments against cataloguing out-of-class experiences include bounds of responsibility ("that's not our area"). The struggle to maintain operational currency while preventing undue system and human stress can result in decision paralysis. Without a clear plan or verifiable benefits, the correct choice is to stay the course.

At Elon University, we are unsatisfied with this option. We have found that students, the advisors and mentors that support them on campus, and the employers that eventually hire them all see value in a verifiable, informatically dense record of student learning. We have also begun to tap into the vastly unexplored design space in academic credentialing. By embracing technology, thinking collaboratively, and learning directly from our students, we have created a flexible, replicable, digital-first credential framework for the modern learner. We have also begun to chart a course to interoperability and consensus building for digital credentials at the national level.

Our immediate goal is to finalize the third phase of development of our academic and experiential transcripts. Elon aims to provide its students with a suite of digital credentials that empowers self-promotion with clarity, reliability,

and accessibility. The university began by digitizing the academic transcript (e-transcript) in 2013, and followed suit with the Elon Experiences Transcript ([EET](#)), the Certified Electronic Diploma ([CeDiploma](#)) and the Visual Experiential Profile ([Visual EXP](#)). As planned, the next wave of innovation connects these credentials to evidence of student learning experiences. The e-transcript will link to course descriptions, learning outcomes, and skill tables. In a similar way, the Visual EXP will link to the website of the company with which a student interned, a digital portfolio, or research output such as publications and presentations. These credentials will eventually be cross-referential, representing the synthesis of academic and co-curricular learning at Elon.

Our long-term goal is to share the framework and best practices that underpin the Visual EXP with an open-source mentality. The Visual EXP is the most impactful and thoroughly developed among Elon's credentials, and as such constitutes the core of this proposal. It is the culmination of three years of iterative design, testing, and research, and reflects almost twenty-five years of institutional expertise. Not only does the Visual EXP distinguish Elon's students and tradition of experiential learning, its form and function epitomize Elon's digital credential strategy.

Working groups and national collaboratives are hard at work mapping the commonalities among digital credentials, but there is still no consensus on issuing standards or best practices. By supporting credential development at other institutions – regardless of mission, size, or student profile – sharing Elon's expertise will ensure that the incredible learning happening at our colleges and universities is illuminated and put to good use.

The Phi Kappa Phi Excellence in Innovation Award will allow Elon to meet both its immediate and long-term goals. The design team will see its next generation transcript models to operational fruition and continue examining their utility through research. More importantly, this team and its partners will create tools, models, and techniques for use by other institutions. By sharing resources and deploying a tested framework in a variety of academic contexts, Elon will contribute to large-scale systemic change. The increasing ambiguity of disparate credential systems will be replaced by a flexible, reliable, and research-based framework for communicating student learning outcomes.

History

Elon University, a medium-sized private liberal arts and sciences university in the southeast, has championed the importance of experiential learning for over twenty years. Central to its [mission](#) are community-wide

commitments to "active student engagement" and putting "knowledge into practice." Accordingly, the university offers deep structural support for what are now known as [high-impact practices](#), which include mentorship, reflection, and record-keeping.

Leadership in developing academic connections to experiential learning is a central tenet of Elon's approach to high-impact practices. In 1993, the faculty added one unit of experiential learning to the university's core curriculum requirements, dubbed the experiential learning requirement (ELR). Students satisfy this requirement by [being an intern](#), holding a [mentored leadership](#) position, taking part in a [service-learning](#) project, [studying abroad](#), or conducting [independent undergraduate research](#). In 2013, faculty voted to double this requirement in response to internal assessments indicating that students who obtained two or more ELR units were three times more likely to have secured employment by graduation than students who obtained one.

In most cases, professional staff and faculty collaborate to coordinate each of Elon's five key experiential program areas. Together they recruit other professionals with related expertise to implement, integrate, and document the experience. For example, global education is coordinated by the dean of the same area and a faculty member with extensive experience in developing intercultural competencies. The faculty member develops expertise among other faculty who are interested in teaching abroad and conducts regular workshops. Along with global education, the service, internship, and leadership areas use this collaborative model. The fifth area, undergraduate research, is coordinated entirely by faculty, and a faculty member serves as its director.

The Beginning of a Digital Credential Strategy

Note: For this proposal, the term digital credential denotes data-enabled transcripts that contain embedded information that cannot be accommodated by a paper transcript. The processes by which Elon's credentials are created, maintained, and distributed occur online, and this digital architecture allows for their rapid modification and expansion.

The emergence of digital credentials is a function of the Elon University's longstanding commitment to experiential learning. The Elon Experiences Transcript (EET), launched in 1994, was a first attempt by Student Affairs to capture and transcribe high-impact practices (HIPs) (Kuh 2008). Though unsophisticated in its original incarnation

(maintained in Excel and printed on institutional letterhead), the ELR ensured that every student's experiential transcript contained at minimum one experience. In the 90s, Elon continued to develop a rich culture of extra-curricular erudition, but its experiential transcript remained for many years a poor reflection thereof. As late as 2012, student requests for the complementary credential hovered in the single digits each term; the transcript did not carry enough value to be meaningful in the employment marketplace.

The primary issue that limited the utility of the EET was a rudimentary information architecture. Student Life catalogued experiential learning activities in parallel to the student information system and without documentation protocols. There was no connection to students' academic records, and there was no consistent scheme by which they were recorded. In 2013, emboldened by their success in digitizing the academic transcript, the Office of the University Registrar proposed a collaboration with the Office of Student Life to revitalize the EET. The University Registrar offered its expertise in data management and document processing, and Student Life responded in kind with a plan to standardize record keeping. The two departments assumed joint responsibility for tracking experiential learning and developed a strategy to document it consistently and accurately.

Student Life established a standard nomenclature for co-curricular experiences and shared data collection expectations with functional units across campus. The Registrar relocated existing experiential data to a custom co-file in the student information system and removed errors and inconsistencies. After the team restructured the data and established consistent collection schemes, the Registrar redesigned the output file to complement the aesthetic of the academic transcript (Figure 1). A new visual format and production on Scrip-Safe paper imbued the EET with credibility, and its new home in the University Registrar's Office proved to be more intuitive and convenient for students. The change in information architecture also meant that students could order the EET through the same system used to order academic transcripts.

Development of the Visual EXP

In July 2015, [AACRAO and NASPA received a \\$1.27 million Lumina Foundation grant](#) to explore how to "collect, document, and distribute information about student learning and competencies, including what is gleaned outside of the traditional academic classroom" (Fain 2015). In recognition of its initial work to supplement the academic

transcript with an experiential transcript, Elon University was selected to be one of eight institutional participants in the project. To further enhance the clarity and utility of the recently redesigned EET, the University Registrar charted the goal of converting it into a visual with intelligible and aesthetically appealing infographics. One of the stipulations of the AACRAO/NASPA project was that each institution's contribution be replicable at other institutions, so the design team focused on building in transferable functionality as well.

Elon used its portion of the Lumina grant to finance the development of a third-party platform that would render experiential data as visuals. This goal was made possible by the work the University Registrar-Student Life team had already completed to restructure this data. In collaboration with the institution's transcript vendor, [Parchment](#), a cross-functional design team guided the development of the new credential and the production platform through several design iterations. The platform, *Vext*, transforms text-based input (i.e. .txt file) into the visuals on the Visual EXP. This feature aligned elegantly with the stipulation of replicability – if an institution can produce a text file, they can use *Vext*.

Within the year, the University Registrar introduced this new credential to the campus community. Spring 2016 graduates were the first to take the Visual EXP into the employment marketplace. The document's first page features a chronological summary of the student's experiences, and the second page features visualizations that correspond to the five Elon experiences (Figure 2). To date, over 1,000 students have requested the Visual EXP either independently or in conjunction with their academic transcript.

Best Practices

The Visual EXP was and continues to be developed using a collaborative approach. The original design team consisted of Dr. Rodney Parks, University Registrar, Evan Heiser, Assistant to the Vice President for Student Life; Dr. Paul Miller, Professor of Exercise Science and Director of Undergraduate Research and Intellectual Climate Initiatives; Julie White, Programmer/Analyst with Application Technologies; Parchment (the university's transcript provider); and an independent web developer. The multidisciplinary expertise of this team has preserved the framework's versatility and prevented operational oversights.

This digital-first document was designed to breathe life into the co-curricular transcript and pave the way for further innovation. Since its original incarnation, the Visual EXP has seen a number of marked improvements. In the last two years, the design team has expanded and collected input from faculty members, students, and other campus administrators. In addition to continuous reflection and solicitation of feedback, the design process is characterized by an adherence to nationally recognized best practices. As a complement to the foundational importance of Kuh’s research on High Impact Practices (which aligns neatly to Elon’s history of experiential engagement), the design team has also drawn heavily from collaborative publications such as [ACE’s Quality Dimensions for Connected Credentials](#) and [PESC’s registrar and admissions standards](#). The seminal work produced by these and other working groups accurately describes the problems created by inconsistent and disparate credentialing systems, and offers a vision for how institutions can address them.

Despite its visual detail, the Visual EXP framework was designed to minimize barriers to adoption. The data that represents student experiences is collected by campus partners and deposited into the student information system (SIS). This data is arrayed in tables that are tied to student ID – just like academic data – and can be exported as a text file. Elon’s Application Technologies team modified the SIS’s co-curricular data module to enable this export process by individual student ID or in batch (see Figure X). The *Vext* platform accepts this text file as input and produces the Visual EXP as output according to design specifications set by a system administrator. These specifications, including identity standards, signatures, and narrative text, are all customizable.

Elon’s integration of systems and automation of data collection serves as a model for implementation – a template that peers can modify or expand upon – but the framework as a whole is system-agnostic. Regardless of the enterprise system in place or the arrangement of the data within that system, administrators can distill student information to text and upload it to the *Vext* platform. The built-in flexibility of this framework enables rapid development and deployment of a custom credential solution. This model is attractive to faculty and staff for obvious reasons, but the output is a boon to students as well. The systematic maintenance of co-curricular data is far more efficient than the expectation that students maintain their own portfolio.

Impact

Measurable Impact

To complement production of its digital credentials and inform plans for ongoing development, the University Registrar has conducted several mixed method studies on student and employer perceptions. In 2014, the year following a massive increase in EET orders, researchers sent a follow-up survey to each EET recipient, a population that included students (transcript sent to self) and employers. Over 285 recipients responded to the survey. 86 percent of employers indicated that experiential transcripts paint a more favorable picture of a job applicant than do traditional academic transcripts, and 74 percent indicated that the enhanced transcript prompts them to view applicants more favorably (Parks & Taylor, 2016).

Importantly, a majority of respondents (74 percent) to this survey believed that the information provided by the EET could “often or always be verified” (Parks & Taylor, 2016). This reflects an essential benefit of a co-curricular record maintained by the university: in addition to revealing more depth of the student experience, the validated co-curricular record unburdens the employer of validating nonacademic information on a resume. The overwhelmingly positive results of this initial study incentivized further credential development and informed AACRAO and NASPA’s selection of Elon for inclusion in comprehensive record project in 2015.

Transformative Potential

The Visual EXP transforms the way that students think about and pursue their educational experience, allowing them to make the most of their time and maximize return on investment. Students use this record as a reflective tool, anchoring their conversations and personal sales pitches to measurable evidence and citable impact. When recreated as a digital tool, it makes learning more accessible, more transparent, and more portable. For employers, the Visual EXP makes [valuable out-of-class](#) experiences easier to appraise and verify. Consistent adoption of such a tool also enables them to compare the development of essential skills across candidates.

The PKP Excellence in Innovation Award will support several strategic priorities at Elon University, as well as the extension of local expertise to scalable credential innovation. Elon will merge its existing experiential data infrastructure with a new course scheduling and degree mapping software, sustain research and collaboration,

support exploratory design, and educate the campus community. The University Registrar also plans to consolidate its knowledge and experience into resources for other institutions. The distribution of research-based, student-centric expertise will lend consistency to credential development and encourage interoperability among the nation's institutions regardless of form, size, or student profile.

Summary

Elon University's efforts to expand the student record to include experiential learning are significant strides toward a more transparent and informative exchange of information. What began as a rarely used supplemental document later became an official expansion of the academic transcript and inspired a full suite of digital credentials. Rich collections of co-curricular experience are now presented as data-enabled visuals. Students and employers have expressed a need for more comprehensive yet accessible information about the college experience, and preliminary research indicates that the Visual EXP is a step in the right direction.

The Phi Kappa Phi Innovation Award provides the resources necessary to maintain this forward momentum. Award funds will allow Elon to increase its developmental capacity, enabling new partnerships and more robust research output. The award also supports the distribution of Elon's expertise among its peers. These critical activities will in turn contribute to consensus building at the national level. Achieving consensus on digital credential frameworks is a key prerequisite to developing interoperable information structures, type-agnostic institutional expectations, and secure exchange protocols that preserve privacy while promoting customization. Together, these motivations will lead to transferable utility for credential issuers, owners, and users – a truly transformative ambition.

Supplemental Materials

Oversight of Experiential Education at Elon University

Experiential learning is strengthened by the contributions of the Experiential Education Advisory Committee (EEAC), which includes the director of the core curriculum (Elon's general studies curriculum), the administrator of a scholarship program dedicated to funding experiential education, and members of the other offices responsible for administering experiential learning requirements. The Assistant Provost for Operations and Communications chairs the committee, and the EEAC monitors learning outcomes. The EEAC also participates in regular assessment as part of Elon's core curriculum.

The pursuit of experiential learning at Elon benefits from organizational support and continuous methodical review, but it is also informed by pedagogical research. Specifically, Elon's practices align with the eight conditions identified by George Kuh and Ken O'Donnell as critical components of connecting high-impact experiences with knowledge to create desired learning outcomes in higher education (Kuh & O'Donnell, 2013). The eight conditions include:

- Performance expectations set at appropriately high levels;
- Significant investment of time and effort by students over an extended period of time;
- Interactions with faculty and peers about substantive matters;
- Experiences with diversity; frequent, timely, and constructive feedback;
- Periodic and structured opportunities to reflect and integrate learning;
- Opportunities to discover (and, Elon believes, to confirm) relevance of learning through real-world applications; and
- Public demonstration of competence.

Elon University regularly assesses the satisfaction of these conditions and revisits standard expectations for experiential education whenever new experiential opportunities arise. Beyond natural programmatic growth, faculty and

professional staff may propose experiences not encompassed by the five existing experiential areas. The advisory committee reviews and recommends to the Core Curriculum Council any changes on an individual basis. To illustrate the strength of experiential education, [an annual report of participation](#) is produced and shared with faculty and staff. This report is also featured on Elon's website and in the university's admission materials.

Over the past two decades, Elon has seen considerable growth in student participation in experiential education (Table 1). While it has grown at Elon, participation in high-impact practices nationwide has remained constant over the past few years, with only service learning experiencing modest growth (Kuh & O'Donnell, 2013). This is largely attributable to the centrality of experiential learning to Elon's campus culture. Participation is a collective expectation, opportunities are interwoven into academics and social engagement, and its representative degree requirement is maintained by a standing committee of faculty and staff to ensure variety, accessibility, and equity.

Elon's Experiences	2012 Elon	2013 Elon	2014 Elon	2015 Elon	2016 Elon	2015 Nationwide
Internships	73%	67%	76%	81%	82%	50%
Leadership	46%	47%	43%	47%	47%	--
Service Learning	82%	85%	86%	88%	92%	61%
Study Abroad	72%	72%	72%	72%	80%	14%
Undergraduate Research	21%	25%	22%	23%	24%	24%

Table 1 Experiential engagement at Elon versus nationwide average

Comparison of Text-Based Experiences Transcript and Visual EXP

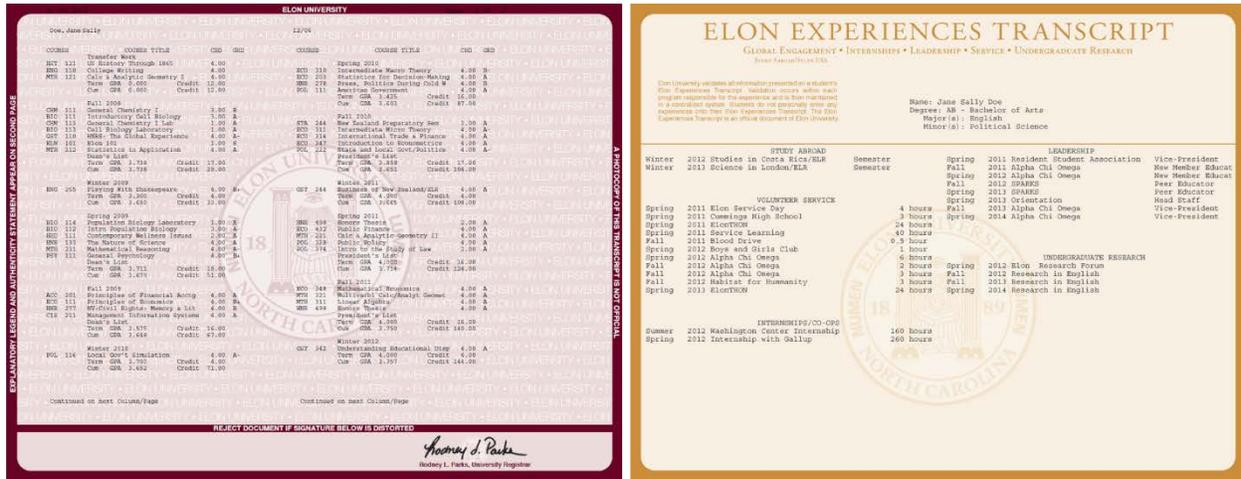
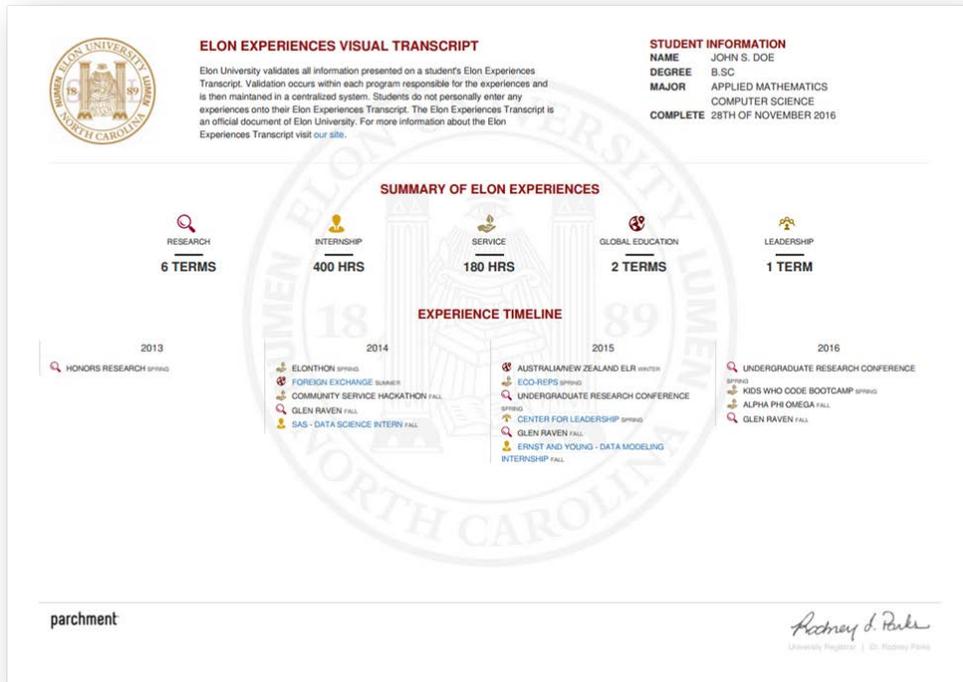


Figure 1 Text-based Elon academic transcript and Elon Experiences Transcript (EET) (2013)



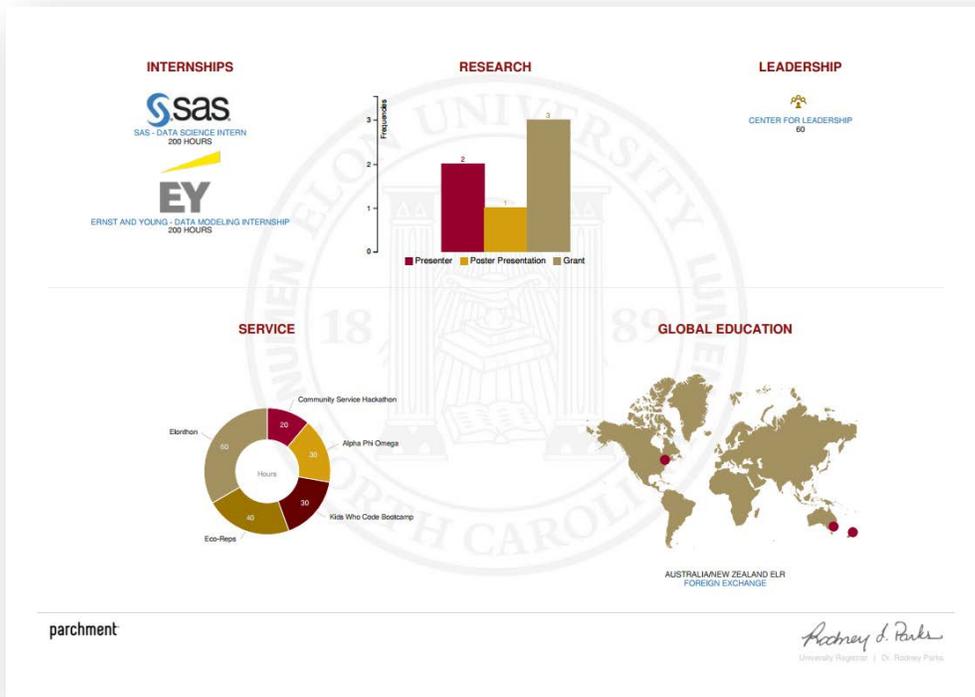


Figure 2 Elon Visual Experiences Transcript (Visual EXP) (2016)

Computer Coding of Elon Experiences

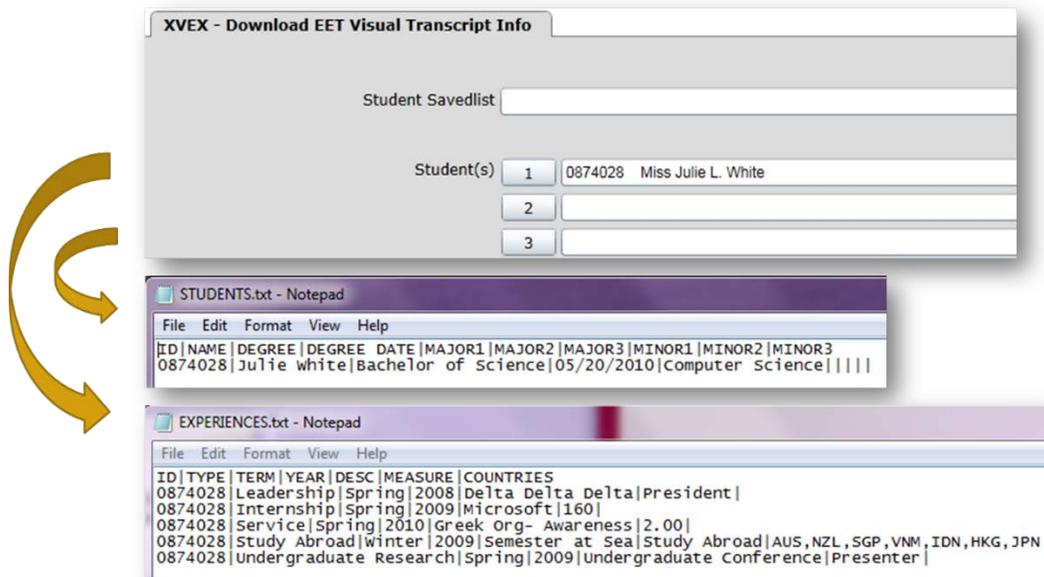


Figure 3 SIS output as text file

Launch of the Visual Experiences Transcript

Two studies accompanied the launch of the Visual EXP in the following year. The University Registrar sent one survey to members of Elon’s employer network, and another to the May 2016 graduating class. Evidence from this second employer survey suggests that they still found digital credentials – especially those that are visually appealing – informative and reliable. 78 percent of employers surveyed agreed that the Visual EXP “paints a different picture of the applicant,” and 80 percent agreed that it “differentiates an Elon applicant from the rest of the applicant pool” (Parrish, Fryer, & Parks, 2017). Nearly three-quarters (72 percent) also agreed that it “provides useful information for the hiring process” (Parrish, Fryer, & Parks, 2017). These are clear indicators that the development of digital credentials benefits employers, which also indirectly benefits students.

The University Registrar targeted recipients for the complementary student survey regardless of whether they had ordered their own Visual EXP. Researchers chose this inclusive approach for a balanced perspective, as some graduates might have had an unfavorable opinion of the new credential. Respondents answered various questions about the visual appeal and perceived utility of the credential, including its key features, the importance of documenting the five Elon experiences, and whether the University Registrar should embed additional information.

Figure 4 provides details for the Likert-scaled questions about students’ general perceptions of the Visual EXP. 87 percent of respondents found this artifact visually appealing, and 85 percent found the transcript easy to understand (Parrish, Parks, & Fryer, 2017). These results are similar to findings from the employer survey: 87 percent of employers believed it was visually appealing, and 82 percent found it easy to understand (Parrish, Fryer, & Parks, 2017).

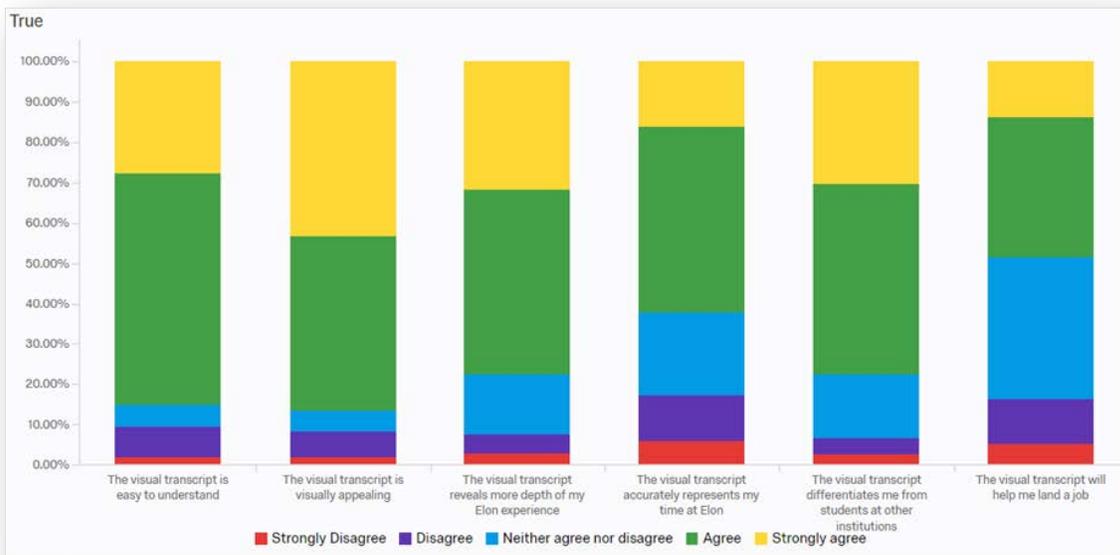


Figure 4 Likert-scale results – perceptions of the Visual EXP

Despite a lack of confidence in its absolute precision, 77 percent of respondents believe that the visual transcript reveals greater depth of their Elon experience, and 78 percent think the transcript differentiates them from students at other institutions (Parrish, Parks, & Fryer, 2017). These results support Elon’s claim that the academic transcript severely limits the representation of student learning by listing only courses taken and grades attained. Most institutions still produce only an academic transcript, so this new credential provides Elon students and alumni the opportunity to share unique, certified experiences with employers, thereby enabling a competitive advantage in the employment marketplace.

When asked whether the Visual EXP helps them secure employment, only 49 percent of respondents had a favorable or strongly favorable opinion; 35 percent expressed indifference (Parrish, Parks, & Fryer, 2017). This is likely because the Visual EXP is relatively new and exists with few parallels; students are reluctant to place too much confidence in its reputation among employers. The study of employers’ perceptions produced similar results: 42 percent of employers agreed that the information on the Visual EXP could be useful when making hiring decisions, and 42 percent were neutral (Parrish, Fryer, & Parks, 2017). Like the students who own them, employers are reluctant to conclude that the transcript itself will enhance an applicant’s value or desirability. As more

students graduate and enter the job market with the Visual EXP, however, it will gain exposure as a verified learning artifact, and perceptions of its utility may improve.

These studies afford the University Registrar abundant insight into student attitudes toward the Visual EXP as well as areas for future development. It would be prudent to replicate these studies after several student cohorts equipped with the Visual EXP have graduated and entered the job market. This would create a more accurate understanding of its rate of adoption and utility among job seekers and employers.

Researchers also could develop objective studies using metadata to determine the channels by which graduates share this and other digital credentials (e.g. job aggregators, LinkedIn, other social media). Studies of credential distribution and access could reveal patterns of consumption, which could further refine how the credentials are created and promoted. The student survey asked respondents to indicate how often they consider employers when posting on various social media (Figure 5). If this were compared to actual distribution patterns, the results could help students self-correct errors in presentation and self-promotion.

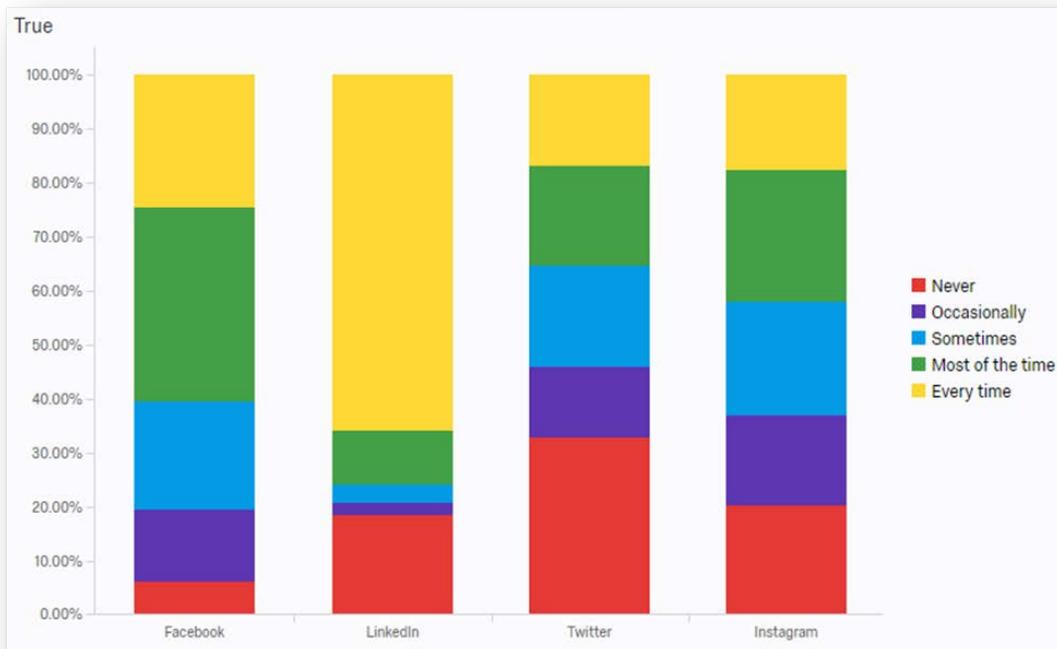


Figure 5 Likert-scale results – social media considerations

Additional Institutional Applications

It must be noted that comprehensive digital credentials empower the institution that curates them as well. In the years since Elon restructured experiential learning data and refined its collection methods, the addition of several student cohorts has improved the significance, reliability, and depth of our reporting. Specifically, cross-referencing experiential outcomes to other data points among student populations has illuminated patterns of engagement that were previously invisible. For example, we know that among the 2012 undergraduate cohort, minority students had a lower rate of participation in all five Elon experiences except for internship than majority students (Figure 6).

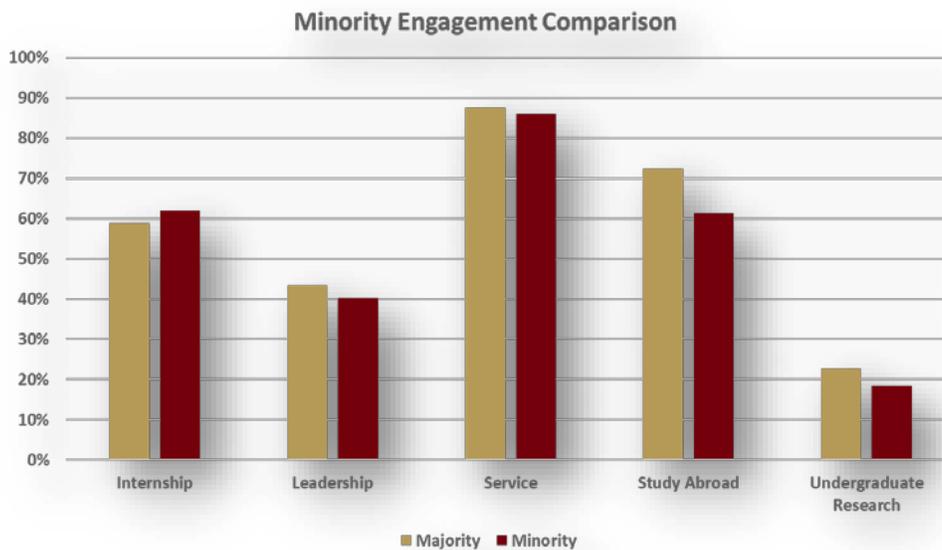


Figure 6 Experiential engagement by majority/minority demographic among 2016 cohort

As illustrated above, the same data that power the Visual EXP are now used in analyses that uncover trends in student participation, persistence, and achievement. These data, in turn, can inform decisions that improve student outcomes and institutional effectiveness. For example, the University Registrar can share data that connects minority persistence to experiential engagement with campus partners like Academic Support and the Center for Race, Equity, and Diversity Education (CREDE). These partners might use this data to refine their messaging or nudge students toward co-curricular experiences that statistically correlate to academic success.

In recognition of this additive potential, the University Registrar has made data mining a strategic priority. The constellation of experiences that make up the undergraduate experience makes it incredibly difficult to isolate cause and effect, but continuous inquiry can improve our ability to understand and support our students. All student data is centralized in the SIS, so this inquiry can be expanded to incorporate first-year administrative assignments like academic advisor, campus residence, or orientation group. It could also be correlated to pre-university experiences such as application submission date, recruiter contact frequency, and high school GPA.

How Elon University Will Use the Phi Kappa Phi Excellence in Innovation Grant

Enhance Degree Audit and Academic Planning Tools

[Stellic](#) (formerly Metis Labs), offers a range of academic planning and degree audit tools. Its data analytics engine also enables university administrators to forecast course demand and visualize student engagement with models. As of this writing, the Stellic system is currently in pre-implementation phase at Elon University. Elon and Stellic plan to modify the implementation scheme to incorporate experiential learning into system deployment and leverage the same tools to similar effect. In other words, Elon aims to use Stellic to forecast demand and visualize engagement for experiential learning in addition to academic learning. This creates an end-to-end credentialing approach, one that spans the entire student lifecycle. Students will use this system to shape their academic profile as they take courses and their experiential profile as they pursue out-of-class experiences.

Stellic's extra-curricular planning and progress monitoring tools must feel as natural as their academic antecedent. To ensure seamless integration that reflects the fusion of academic and experiential learning at Elon, both the institution and its vendor partner require dedicated human and technology resources for design, testing, and implementation. Together, they must ensure that students and other institutional personnel that use the system see this addition as a purposefully designed system component and not an afterthought. If successfully adapted to Elon's needs, Stellic may be able to incorporate experiential modules into their software package, ensuring replicability at and interoperability among other institutions.

Beyond system design, the adoption of a new degree audit and planning system requires training for campus partners. These obviously include each of the departments responsible for tracking elements that appear on the

Visual EXP: the Isabella Cannon Center for Global Education, the Kernodle Center for Service Learning and Community Engagement, the Associate Provost of Honors and Undergraduate Research, the Center for Leadership, and the Student Professional Development Center. Elon's educational ecosystem is dense and highly interconnected, so these audiences also include Academic Support, academic departments, University Admissions, Application Technologies, Institutional Research, the Center for the Advancement of Teaching and Learning, New Student Transition Programs (NTSP), Student Life, and the CREDE.

Strengthen Research, Development, and Promotion

At Elon, research activity fuels innovation because it enables adaptive development. The University Registrar can measure the impact of incremental improvements to its credentials and modify successive design iterations. The Visual EXP framework currently embeds informatic extensions, such as iconography and links to evidence of student learning. The University Registrar might investigate, for example, the option of allowing students to add a 300-word personal narrative as an additional element. If so, exploratory design will be complemented by surveys and focus groups, supporting its ultimate inclusion or exclusion with evidence.

As researchers explore new ways to illuminate learning on credentials, the aggregate data that underpins them increases by the day as students register for courses and pursue out-of-class experiences. As this body of data grows, it enables increasingly sophisticated – and more accurate – analysis. This analysis, presented in greater detail above, serves two primary purposes. First, data can be introduced to new systems (like Stellic) that can make autonomous decisions on behalf of the learner via a suggestion matrix. Second, data can be modeled for faculty members and advisors to provide insight into learners' developmental progress to inform their activities.

In addition to improving the value of the credential framework and supporting campus partners, the Excellence in Innovation Award will be used to support students directly. The university will create an integrated promotional strategy to build awareness, generate interest, and educate the campus community. Marketing tools such as websites, videos, and on-campus events will help students learn to tell their story – using their credentials – in a way that is compelling to employers and graduate schools.

Create Consultative Tools

Finally, research and development at Elon will inform the creation of consultative tools for use by other institutions. In 2017, over eighty institutions – public and private, large and small – contacted the University Registrar directly to request guidance on implementing their own version of experiential transcripts (Ellucian, 2018). A few of these calls came from institutions that have an established framework for experiential learning. Many more came from institutions that have only recently begun to consider the potential impact of tracking extra-academic experiences for their students.

Accordingly, Elon University will dedicate a portion of the PKP Excellence in Innovation Award to the development of resources for peer institutions that intend to extend their academic transcript. These resources will be presented as a consultative package and include tools designed for strategic planning, data organization, cultural integration, financial forecasting, and project implementation. It is important to note that these resources will support not just the learner, but all actors in the learning ecosystem. Students, instructors, advisors, mentors, caregivers, and potential employers should benefit from the implementation of reliable transcript frameworks.

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