IMS Global Learning Consortium® Summit on Digital Credentials

27-28 February 2018 | Scottsdale, Arizona

2018.04.27 한국교육학술정보원 이효정 (hlee@keris.or.kr)

들어가기에 앞서..

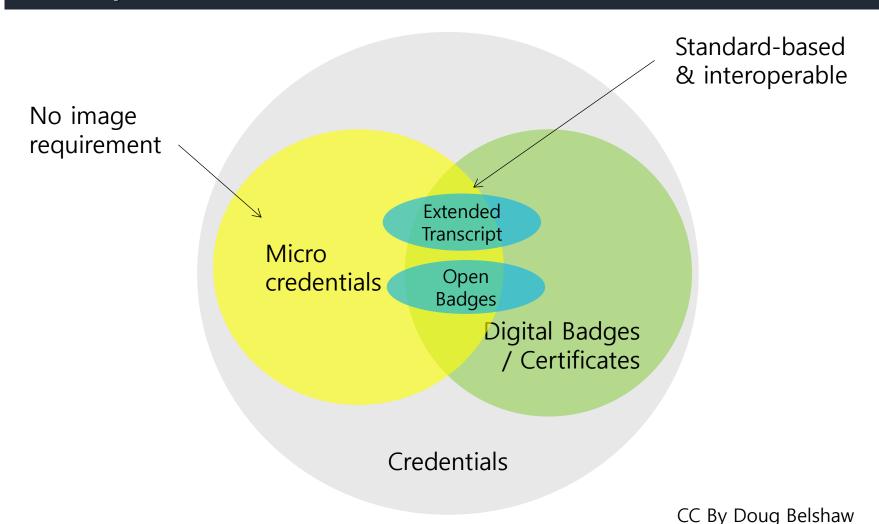
IMS Global Learning Consortium

- 1997년 설립
- 국제 이러닝 산업의 형성 및 성장을 위한 사실상(de-facto) 표준과 관련 기술 개발
- 주요 표준 : IMS Caliper(학습 활동 데이터 수집 체계), LTI(Learning Tools Interoperability), QTI(Question and Test Interoperability), Open Badge 등
- 회원 기관 : 457개(Google, Microsoft, IBM, Moodle, Blackboard, VitalSource, 캘리포니 아주립대, 팬실배니아주립대, 미시건주립대 등)
- 연 3~4회 분기별 회의(quarterly meeting) 및 Summit(LA, Digital Credentials 등을 주제로 선정) 진행
- 홈페이지: <u>www.imsglobal.org</u>

(참고) IMS Korea 표준화 포럼

- 2008년 설립
- IMS 표준을 국내에서 효과적으로 활용할 수 있는 환경 제공 및 IMS Global과 국내 표준 활용 기관 간의 가교 역할
- 홈페이지: www.imskorea.or.kr

Digital Credentials / Micro-credentials/ Open Badges / Extended Transcripts



Summit

DAY 1

- The Opportunity Gap and What We Can Do About It: Unrealized Potential from K-20 to Work
- Building a Strategic Employer Engagement Plan
- The Market is Demanding Faster + Cheaper Alternatives
- Connecting Employer-based Micro-credential Programs to Education Outcomes
- Employer Challenges in Talent Acquisition: What Higher Education Can Do To Help
- Policy, Practice and Cultural Barriers to Partnership between Employers and Institutions: What Can and Should Be Done
- The Benefits of Micro-credentials to Learners, Employers and Institutions: Lessons from Three Successful Micro-Credential Programs
- Action Planning for Employer/Education Partnerships: Outreach, Planning, Implementing and Measuring





DAY 2

- An Evidence-Based Process for Quality Digital Credentials Building a Strategic Employer Engagement Plan
- Learning Pathways Guiding Learner Skills Progression
- Southern New Hampshire University's Blockchain-Based Digital Credentials Project
- IBM + Northeastern University -Creating Learner Opportunities
- Exploring the Key Features of Open Badges 2.0
- RMIT: Engaging Employers in Innovative Credential Design
- Accelerate Hiring and Talent Development with Digital Credentials
- 21st Century Credentials for 21st Century Learners
- Developing a Coalition for Preservice Educational Technology Open Badges

시사점

- 북미지역 기업과 대학을 중심으로 적용 단계로 진입하고 있는 것으로 평가됨
- 해당 기술은 커뮤니티 칼리지 수준에서 가장 효과적인 것으로 보임
- 북미 시장에서는 Chalk&Wire, Concentric Sky, cclaim, Badgr 등의 업체 뿐 아니라 Microsoft, IBM 등에서도 Digital Credential 관련 서비스를 제공하고 있으며, 관련 기술과 표준들에 대한 준비에도 적극적임















• 국내 업계의 수요 파악 및 대응 전략(선행 연구 또는 도입전략 등) 수립 필요

Why?

How Valuable are Transcripts?

Course #	Course Name	Grade
CS 200	Web Programming	В

- What does 200 mean? Is it equal to or less difficult than a 400-level class? What about 400-level Programming for Humanities course? Is it half of a level 400 CS class?
- Course name is vague: what skills are covered?
- What does the grade B mean?
 - Average on everything?
 - Did really well on some things and poorly on others?
 - If so, what things did they do well on?

Employers Aren't Seeing These Skills

Degree Inflation

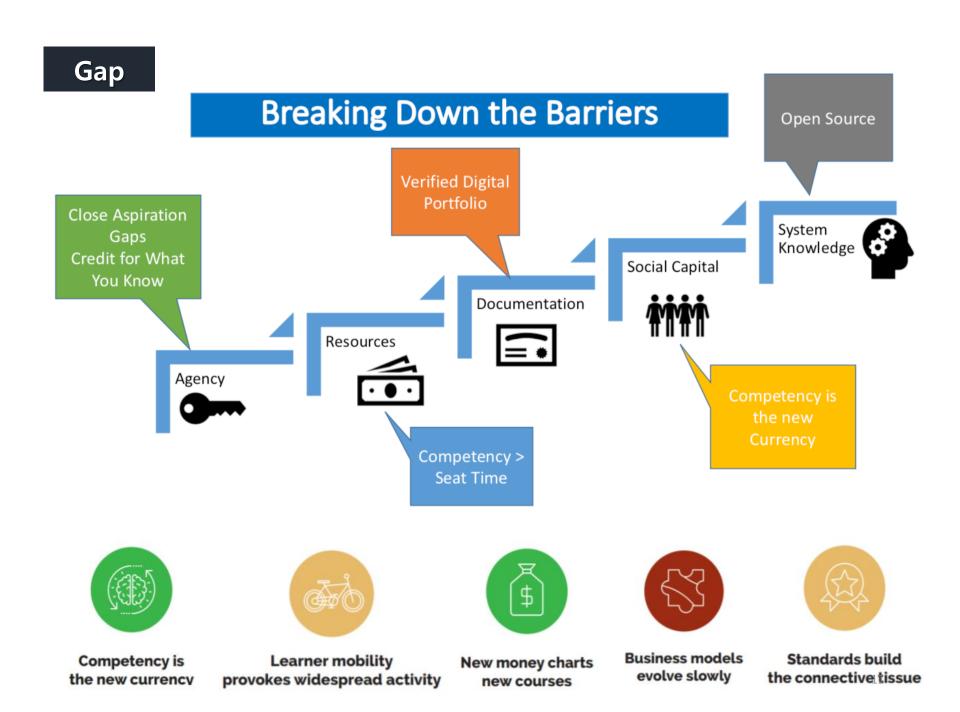


Experience Inflation





Unfilled Jobs



Use Case

Use Case – Madison College Digital Badge Program

UTILIZING BADGES DIFFERENTLY

Credit Badges

Courses transcripted (A, B, C...)

Earn at "Exceptional" level across all assessments

Multiple skills/badges possible within one course

Students may need to submit evidence/apply for digital badge

VS.

Non-Credit Badges

Courses transcripted (U/Satisfactory)

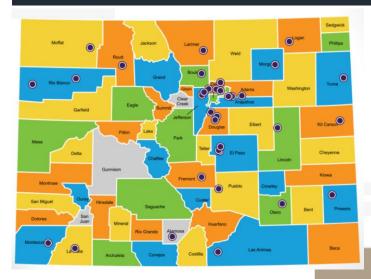
Earn an 80% or above within course and on assessments

Each course = One badge/skill

By taking the course, students are eligible to earn the digital badge

Within all classes (Credit/Non-Credit), students can still pass the class without having earned a badge.

Use Case – Colorado Community College System



WHY ARE WE DOING THIS?

Digital badges will help the Colorado by:

HELPING JOB SEEKERS

Helping job seekers develop the skills they need to land jobs and earn promotions.



Helping employers make better hiring Decisions.



HELPING EMPLOYERS

HELPING BUSINESSES

Making Colorado businesses more productive and competitive in the global economy.



Use Case – Univ. of Central Oklahoma

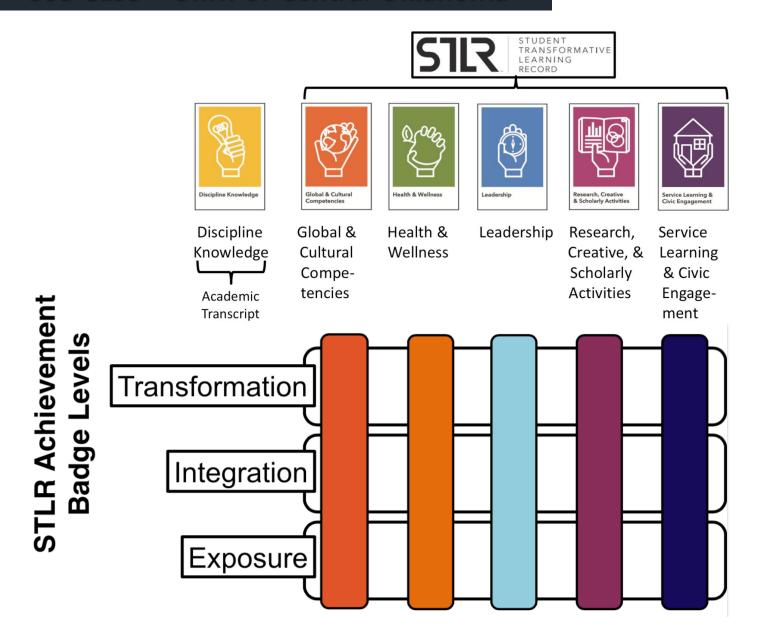
The Leadership IQ Study: Top Five Reasons New Hires Fail

(3-yr study; 5,000+ hiring managers; 20,000+ new hires; 312 corporations, organizations, institutions*)

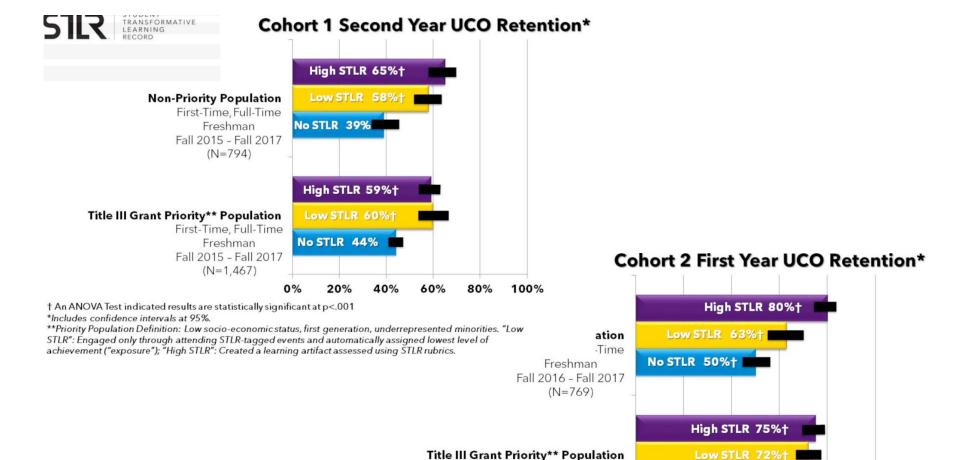
- Coachability (26%): ability to accept and implement feedback
- Emotional Intelligence (23%): ability to understand & manage one's own emotions & recognize others'
- Motivation (17%): sufficient drive to achieve potential and excel in the job
- **Temperament** (15%): attitude & personality suited to the job and work environment
- **Technical Competence** (11%): Functional and/or technical skills & knowledge required for the job



Use Case - Univ. of Central Oklahoma



Use Case – Univ. of Central Oklahoma



First-Time, Full-Time

Freshman Fall 2016 - Fall 2017 (N=1,404)

0%

No STLR 50%

20%

40%

60%

80%

100%

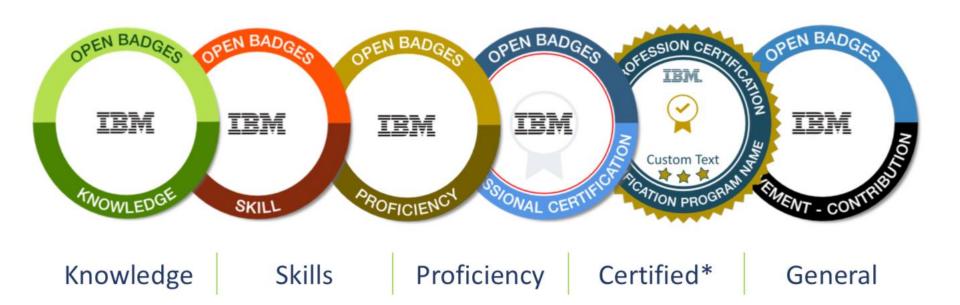
[†] An ANOVA Test indicated results are statistically significant at p<.001

^{*}Includes confidence intervals at 95%.

^{**}Priority Population Definition: Low socio-economic status, first generation, underrepresented minorities. "Low STLR": Engaged only through attending STLR-tagged events and automatically assigned lowest level of achievement ("exposure"); "High STLR": Created a learning artifact assessed using STLR rubrics.

Use Case – IBM

We developed unique digital badges to encompass the broad activities we host at IBM

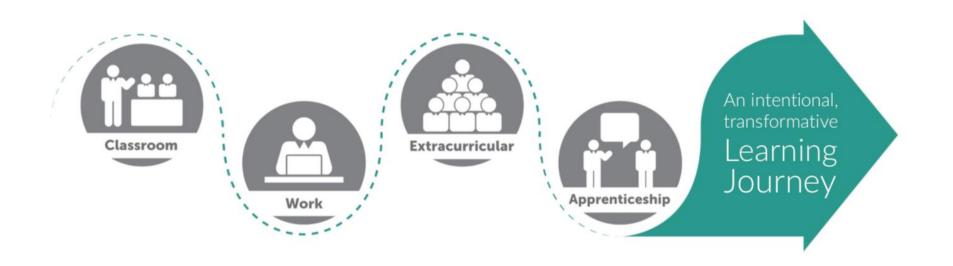


Badging is how we will measure **resume-worthy** IBM skills in the market



Learning Pathway

Earning a Badge Involves Integrating Learning from Different Settings



- Degree Pathway
- Course Pathway

Education Design Lab

Use Case – Southern New Hamphshire Univ.

Trends

- ✓ Data Analytics
- ✓ Customer/Service Orientation
- ✓ Specialized Sales
- ✓ Human Resources
- ✓ Project Management
- ✓ Infrastructure
- ✓ New energy sources

"Writing, communication skills are scarce everywhere.... Lower-skill jobs seem to face the widest gaps in baseline skills."1



¹ The Human Factor: The Hard Time Employers Have Finding Soft Skills, Burning Glass Technologies

Southern New Hampshire University

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m 10}$ $^{
m 2}$ Future of Jobs Report, World Economic Forum

Use Case – Southern New Hamphshire Univ.

Quick-Service Restaurant: Cross-Cutting DWAs

Skill	Crew Member	Shift Leader	Rest. Mngr	Multi- Unit Mngr	Network Trainer
Manage operational budgets			*	*	*
Provide customer service	*	*	*	*	*
Assign work to staff/employees		*	*	*	*
Discharge workers using guidelines			*	*	*
Hire workers			*	*	*
Implement company policies		*	*	*	*
Recommend promotions, transfers, dismissal		*	*	*	*
Recruit candidates	*	*	*	*	*
Resolve conflicts		*	*	*	*
Schedule employee work hours			*	*	*
Send and receive email			*	*	*

Use Case – Southern New Hamphshire Univ.

College for America BA projects map directly to the competencies required for advancement

Correlated Topics from CfA BA in Management

Improve Org Effectiveness

Lead a Team

Employ HR

Managerial Accounting

Improve Org Effectiveness

Employ HR

Manage a Business Organization Perform recruiting or hiring activities

Manage budgets or finances

Evaluate programs, practices or processes

Evaluate personnel capabilities or performance

Direct org operations, activities or processes

Respond to customer problems or inquiries

Sell products and services

Supervisor Customer Account Executive

Develop operational procedures or standards

Determine operational methods or procedures

Authorize business activities or transactions

Perform recruiting or hiring activities

Manage budgets or finances

Evaluate programs, practices or processes

Evaluate personnel capabilities or performance

Direct org operations, activities or processes

Respond to customer problems or inquiries

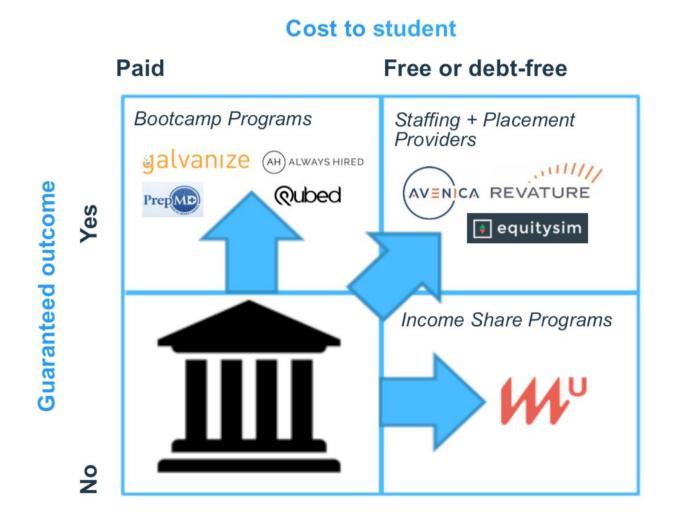
Sell products and services

Manager, Call Center

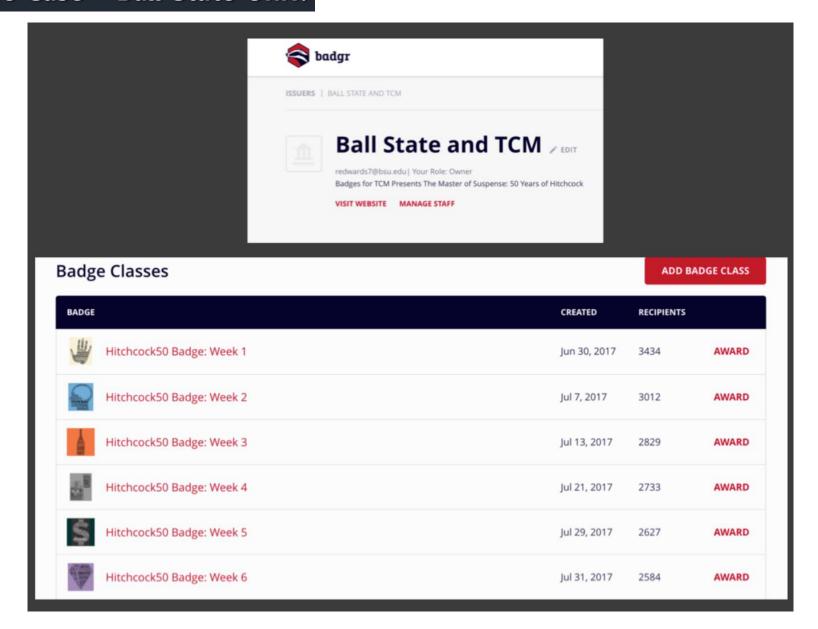


Use Case – Univ. Ventures (Faster + Cheaper Alternative to college)

Superior Value Propositions



Use Case – Ball State Univ.



Use Case – Ball State Univ.

Bagde 설계에 대한 시사점 공유

- Bagde 디자인을 위해 그래픽 디자이너에게 작업을 의뢰하거나 비싼 비 용을 들일 필요는 없음
- 학습자를 위한 디지털 스토리를 담고 있어야 함
- 커리큘럼 및 학습 성과와 연계가 필요함(학습경로 제시 등)
- 학습자들은 자신의 Badge를 compiling, curating, sharing 하고 싶어하는 욕구가 있으므로, Badge 디자인에는 Collectible, Shareable, Memorable이 라는 요소를 고려할 필요가 있음

Use Case – MYMANTL

WHAT IS MYMANTL?

ISSUER + DISPLAYER + HOST





PROGRAMS AND ISSUE
OB 2.0 BADGES

SHOWCASING SKILLS
THROUGH OPEN BADGES AND
WORK SAMPLES

표준

표준 – Open Badeges

- 맥아더 재단(MacArthur Foundation)의 지원으로 2011년 모질라 재단(Mozilla Foundation)에서 처음으로 개발한 규격 및 개방형 기술 표준
- 업적에 대한 정보를 패키징하고, 이를 다시 간단한 이미지파일에 임베딩하여 디지털 뱃지로 발행하고, 배지 유효성 검사를 위한 인프라 구축 방법을 담고 있음
- 처음에는 'Badge Alliance Standard Working Group'에 의해 유지/관리되었지만, 2017년
 1월부터 IMS Global Learning Consortium으로 이관되어 개발/관리되고 있음
- Open badge Specification 2.0 (2017년 3월 발행)
 : http://www.imsglobal.org/sites/default/files/Badges/OBv2p0/index.html
- 관련 사이트 : https://openbadges.org

표준 – Open Badeges

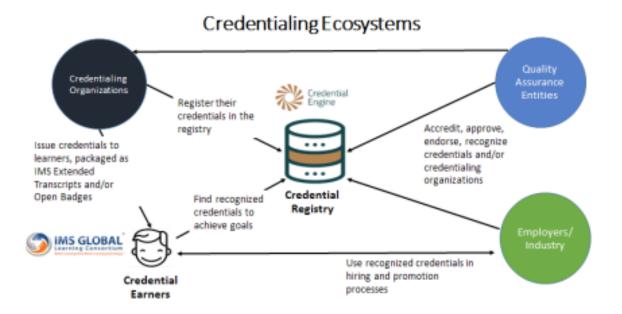
- Open Badge에 블록체인기술을 적용하는 것에 관한 논의
- 향후 작업 주제에 대한 논의
 - 학습 경로(Learning Pathways)
 - Concentric Sky에서 시작된 Open Pathways 작업을 기반으로 한 학습 방법으로 학습 목 표와 자격, 학습 기회 간의 관계에 관한 것
 - 수년간 여러 단체와 재단이 참여해옴 (c.2014 Gates Foundation가 대표적)
 - 각 목표에 대한 단계 간의 관계 정의, 기관이나 학습자가 정의할 수 있는 학습 경로, 전통적인 학위 계획에서의 학습 경로 추적, 교과과정과 비 교과과정에서의 업적 시각화 등이 포함됨
 - Backpack 프로토콜(https://backpack.openbadges.org/)
 - 여러 기관에서 발행하는 Open Badge를 웹 상에서 통합하여 저장하고 플랫폼 간 공유할
 수 있는 프로토콜

표준 - eT(Extended Transcript)

- IMS Digital Credentials 포트폴리오의 일부로 학습자, 등록자, 고용주를 대상으로 교육 과정, 역량, 기술, 교과 과정에서의 성취, 인턴십, 체험학습 등을 포함한 다양한 기록을 제공하도록 하는 데이터 모델 및 서비스 정의 표준
- Extended Transcript Tutorial

: https://www.imsglobal.org/sites/default/files/eT-tutorial.2018-02-16.pdf

(참고) 관련 이니셔티브 : Connecting Credentials



시사점(종합)

- (표준개발에 대한 접근 방식의 변화) 표준에 대한 논의는 표준 스펙에 대한 기술적 정의에 앞서, 미래 사회의 역량, 기업에서 필요로 하는 역량과 교육과정을통해 길러지는 역량 간의 갭을 최소화하기 위한 전략 등 보다 근원적인(Fundamental) 교육의 문제를 해결하는데 방점을 둔 논의의 과정을 거치는데 상당 부분 노력을할애하고 있으며 이를 해결하기 위한 솔루션 중 하나로 표준을 다루고 있음
- (민관학연 협력 기반 표준 개발 생태계 활성화) 미국을 주도로 하는 사실상 표준 개발 시스템에 있어 에듀테크 기업, 대학과 기관의 연계를 통해 기술개발(기업)과 적용(대학과 기관)이 연계된 다양한 실제 개발 적용 사례와 케이스 스터디가 이루어지고 있으며, 현재의 수요를 표준 요소로 도출하고 표준화 작업에 반영하는 생태계가 활성화되고 있음.
- ※ Learning Machine x Southern New Hampshire Univ.: Blockchain 기반의 Digital Credentials 프로젝트
- ※ IBM x Southern New Hampshire Univ. : 모바일 학위증 발급 프로젝트
- ※ IBM x Northeastern Univ. : 학습자 기회 창출 프로젝트(IBM Badge 발급)
- ※ Credly x RMIT Univ. : 교육과정 및 digital credential 설계에 고용주를 참여시키기 프로젝트
- ※ Parchment x Golorado Technical Univ.: 21세기 학습자를 위한 21세기 자격증 프로젝트

더 알아보기

- 자료 : http://www.imsglobal.org/digital-credentials-summit-2018
- IMS Global Learning Consortium : http://www.imsglobal.org
- IMS Korea 표준화 포럼 : http://www.imskorea.or.kr





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