



# building

the workforce of tomorrow

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*“More than 50% of today’s jobs require some degree of technology skills, and experts say that percentage will increase to 77% in the next decade.”*

-US Bureau of Labor Statistics

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*“Computer science is a top paying college degree and computer programming jobs are growing at 2x the national average.”*

-Bureau of Labor Statistics, National Science Foundation, Bay Area Council Economic Institute

*“1,000,000 more jobs than students by 2020.”*

-Bureau of Labor Statistics

- **91%** of Hiring Managers consider employee certification as a criterion for hiring
- **81%** of Hiring Managers believe certified individuals perform better than noncertified peers

-Microsoft Certified Professional Satisfaction Survey 2010

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- Microsoft IT Academy, in partnership with CertiPort, helps bridge the skills gap by providing institutions the curriculum for teaching technology and learning tools that will enable students, educators, and faculty to achieve success.
  - Twenty-two states have partnered with Microsoft & Certiport to address this issue by deploying the Microsoft IT Academy and Certifications across their states in K12 schools, Higher Education institutions and other community learning centers.
  - The Primary focus of IT Academy is skills and employability. The program covers three areas of study: Productivity, IT Infrastructure, and Computer Science.
  - The IT Academy Solution provides solutions for multi-model delivery: Instructor Led, Online Learning and hybrid.
  - IT Academy is a per campus teaching and learning solution that includes access for all students, staff and educators at a single location for one low price per year. Certification is a per campus assessment and certification solution that provides industry level certifications for student, staff and educators at a single location for one low price per year.
  - Through a statewide partnership, deployment support will be provided by a Microsoft Deployment team for 12 months (with an agreement processed before June 30<sup>th</sup>, 2016). Certification deployment is provided by Certiport to enable delivery of certification exams in classrooms.

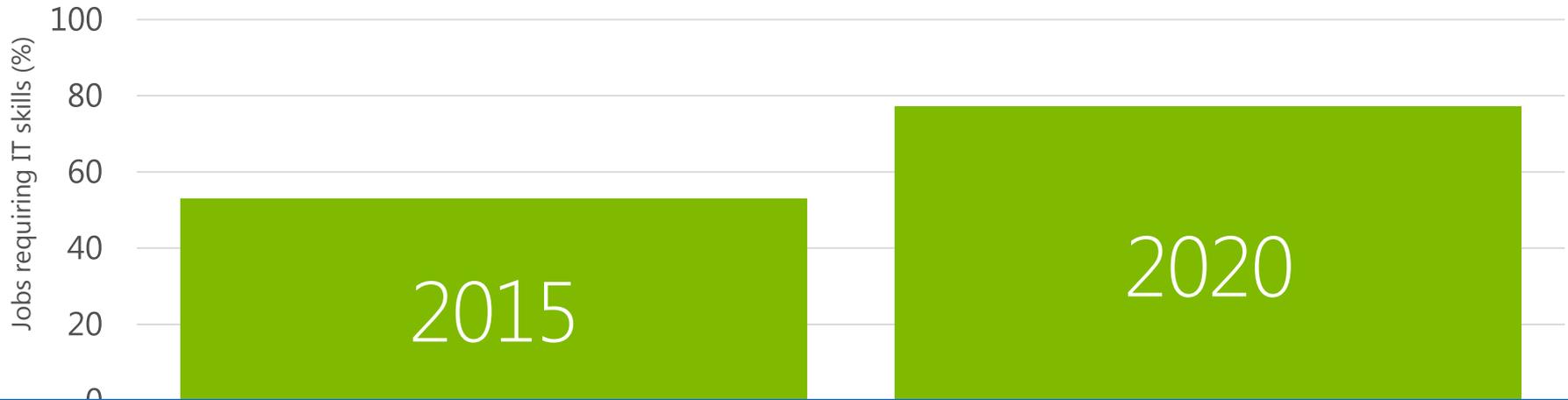


# Building the Workforce of Tomorrow in New Mexico

Scott Kennedy, Director, Strategic Alliances  
Tammara Edgin, Education Account Executive, New Mexico  
Microsoft Corporation

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# Technology skills demand



More than **50%** of today's jobs require some technology skills, and experts say that percentage will increase to **77%** by the end of the decade.

# Microsoft skills are in demand – New Mexico!

## Jobs in Demand by Technology



Microsoft Skills & Certifications:  
"must have"  
"good to have"  
"nice to have"

IT jobs will grow from 35.6 million jobs in 2009 to 41.4 million jobs by end of 2014



Location	Google	Apple	CISCO	Adobe	Microsoft
Albuquerque	58	40	24	62	817
Santa Fe	11	10	1	25	105
Las Cruces		4	1	2	25
Rio Rancho	2	8	1		25
Farmington	3	7	3	1	33
Roswell		7			20
Gallup	1	7	3		16
Carlsbad	2			4	46
<b>New Mexico (all up)</b>	<b>94</b>	<b>112</b>	<b>44</b>	<b>110</b>	<b>1,448</b>

Source: Indeed.com, September 2015

# Microsoft skills are in demand – New Mexico!

New Mexico Employers Seeking Microsoft Skills and Certifications



Salary Estimates

- \$25,000+ (1269)
- \$30,000+ (1088)
- \$40,000+ (835)
- \$50,000+ (561)
- \$65,000+ (268)

# Hired! Top Skills for the Jobs of Tomorrow\*



\*Indicates CIP (Communication, Integration, Presentation) skill  
IDC White Paper sponsored by Microsoft, Skills Requirements for Tomorrow's Best Jobs – Helping Educators Provide Students with Skills and Tools They Need, Doc #243853, October 2013

## Top 3 most desired job skills:

1. Oral and written communication
2. Attention to detail
3. Proficiency in Microsoft Office

# 21st-century technology skills for success in college and careers

Skills that enable them to collaborate, communicate, and be **critical thinkers**, **innovators**, problem solvers, and citizens of a global economy.



**Alabama**  
High schools

191/183



**Arkansas**  
High school, Adult Edu & workforce

343/79



**Florida**  
Middle and High Schools

100/775



**Georgia**  
High schools

441/441



**Hawaii**  
Libraries statewide: first worldwide!!!

52



**Iowa**  
STEM Schools, MS/HS/CC

150/100



**Idaho**  
High Schools

179/125



**Indiana**  
High schools and Workforce development offices

150/101



**Kansas**  
High Schools

150/135



**Kentucky**  
High Schools

187/150



**Louisiana**  
High schools

88/192



**Michigan**  
High Schools and Community Colleges

328/356



**North Carolina**  
High school & community college

686/458



**Nebraska**  
High Schools

47/47



**Tennessee**  
Higher Education

51/51



**Utah**  
9-12<sup>th</sup> Grade

150/99



**Virginia**  
High school

364/376



**Washington**  
Middle and High school

1471/1090



**Washington**  
Libraries

405/18



**West Virginia**  
High Schools

160



**Wisconsin**  
High Schools

234/200



IT Academies/Certification Testing Sites

**Mississippi**  
High Schools

252/180



# The Microsoft IT Academy Program

A comprehensive solution for teaching technology courses and helping students of all ages prepare for college or their careers.

*“The Microsoft IT Academy is a perfect example of how our state is leading the way in preparing high school students for college and career.”*

**Bill Harrison, Chairman,  
North Carolina State Board  
of Education**

Time-saving Course Curriculum	Teacher and Staff Professional Development
<ul style="list-style-type: none"><li>• Online Learning courses (more than 250)</li><li>• Digital course books -- <i>Microsoft Official Academic Coursework (MOAC)</i></li><li>• Lesson plans</li><li>• Digital literacy</li><li>• Discounted Official Courseware (MOC)</li></ul>	<ul style="list-style-type: none"><li>• Teaching with Technology Content</li><li>• Starter Pack – 30 no cost certification exams</li><li>• Microsoft Certified Trainer program</li><li>• Online Learning access</li></ul>
Certification	Partner Resources
<ul style="list-style-type: none"><li>• Academic pricing on exams</li><li>• Second Shot campaign</li><li>• Testing center discounts</li><li>• Certification Roadmap</li></ul>	<ul style="list-style-type: none"><li>• Marketing resources</li><li>• Private site for members</li><li>• DreamSpark &amp; DS Premium</li><li>• Program Logo</li><li>• Welcome Kit</li><li>• Regional Support Center</li></ul>

# Curriculum in three core areas of study:

## Productivity

- Digital Literacy
- Microsoft Office Specialist/Master

## IT Infrastructure

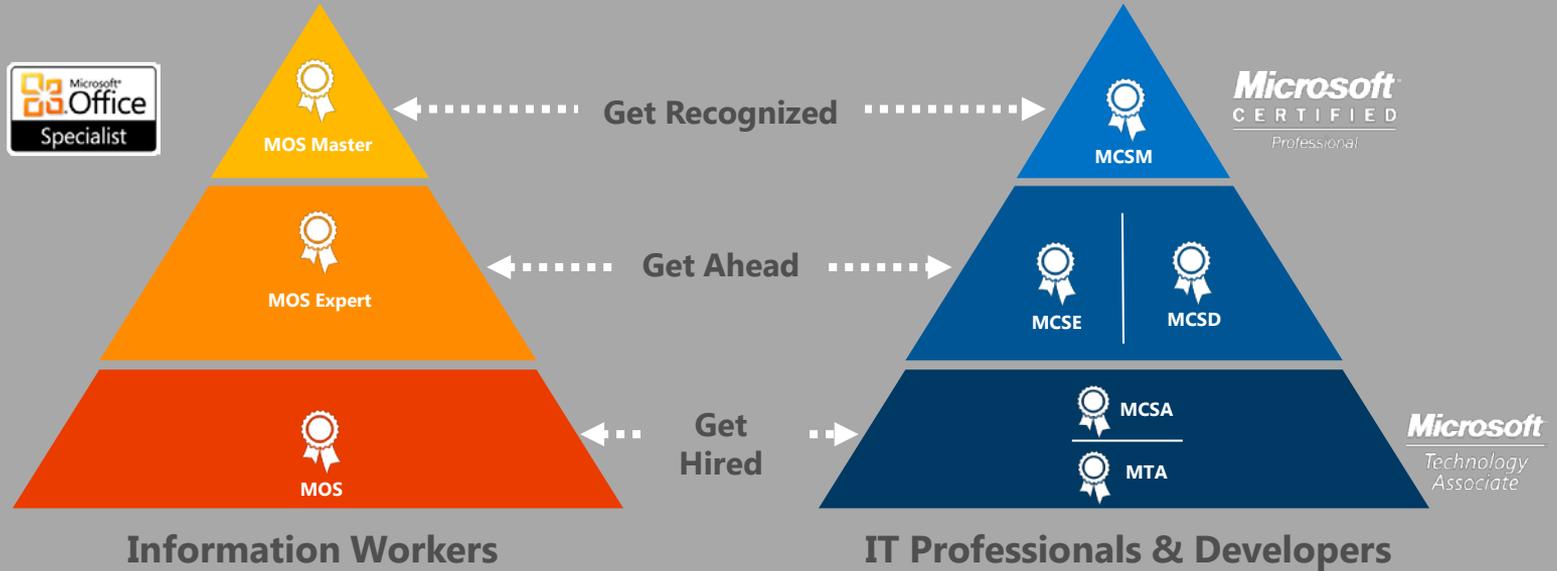
- MTA: Networking
- MTA: Mobility and Device
- MTA: Cloud Fundamentals

## Computer Science

- Learn to Code offerings
- Creative Coding through Games and Apps
- MTA: Software Programming Fundamentals
- MTA: HTML 5 App Development Fundamentals
- CS50 for AP Computer Science Principals

# Certification

Curriculum formats help prepare for certification



Microsoft Certified Educator (MCE)

Digital Literacy Certificate

# Building an effective workforce for tomorrow



91%

**Hiring Managers** consider employee certification as a criterion for hiring

79%

**Hiring Managers** feel that certified individuals are more efficient

81%

**Hiring Managers** feel that certified individuals perform better

50%

**Individuals** believe obtaining a certification makes them more marketable

89%

**Supervisors** say that Microsoft Office certified employees are more proficient users of Microsoft Office programs

"It's truly a global marketplace, especially in the IT world. If you don't have a certification that validates you have the needed skills, you're at a significant disadvantage." – **Bill Doherty, @One Project, CA Colleges**



# Appendix



# Links

- 1 Imagine@MVA – Computer Science
- 2 Microsoft IT Academy – Productivity, IT Infrastructure
- 3 EduCast Series – monthly webinars for teachers
- 4 Hour of Code – getting started in CS
- 5 Academic Certification

[aka.ms/imaginatmva](https://aka.ms/imaginatmva)

[www.microsoftitacademy.com](https://www.microsoftitacademy.com)

[aka.ms/educast](https://aka.ms/educast)

[code.org/learn](https://code.org/learn), [aka.ms/trytech](https://aka.ms/trytech)

[aka.ms/certmta](https://aka.ms/certmta)



# Flexible Curriculum

## Classroom Learning

### Microsoft Official Academic Curriculum

- Complete classroom curriculum in digital format for teachers and students

### Microsoft Office Lesson Plans

- Teacher resources for project-based lessons that incorporate Microsoft Office skills with subject area learning

## Online Learning

### Video-on-demand

- Modular student materials addressing core concepts through presentation and demonstration

### Interactive

- Interactive student materials using text, presentations, simulations, animations, and games

## Self Study

### Microsoft Press Study Guides

- Digital “how to” books for students’ Microsoft Office skill development

## Validation

### Microsoft Office Specialist

- Validates mastery of Microsoft Office skills that are valuable for a wide range of jobs and other life pursuits

### Microsoft Technology Associate

- Validates understanding of basic technology concepts in software development and information technology

### Microsoft Certified Professional

- Validates mastery of core technical skills required to build a sustainable career

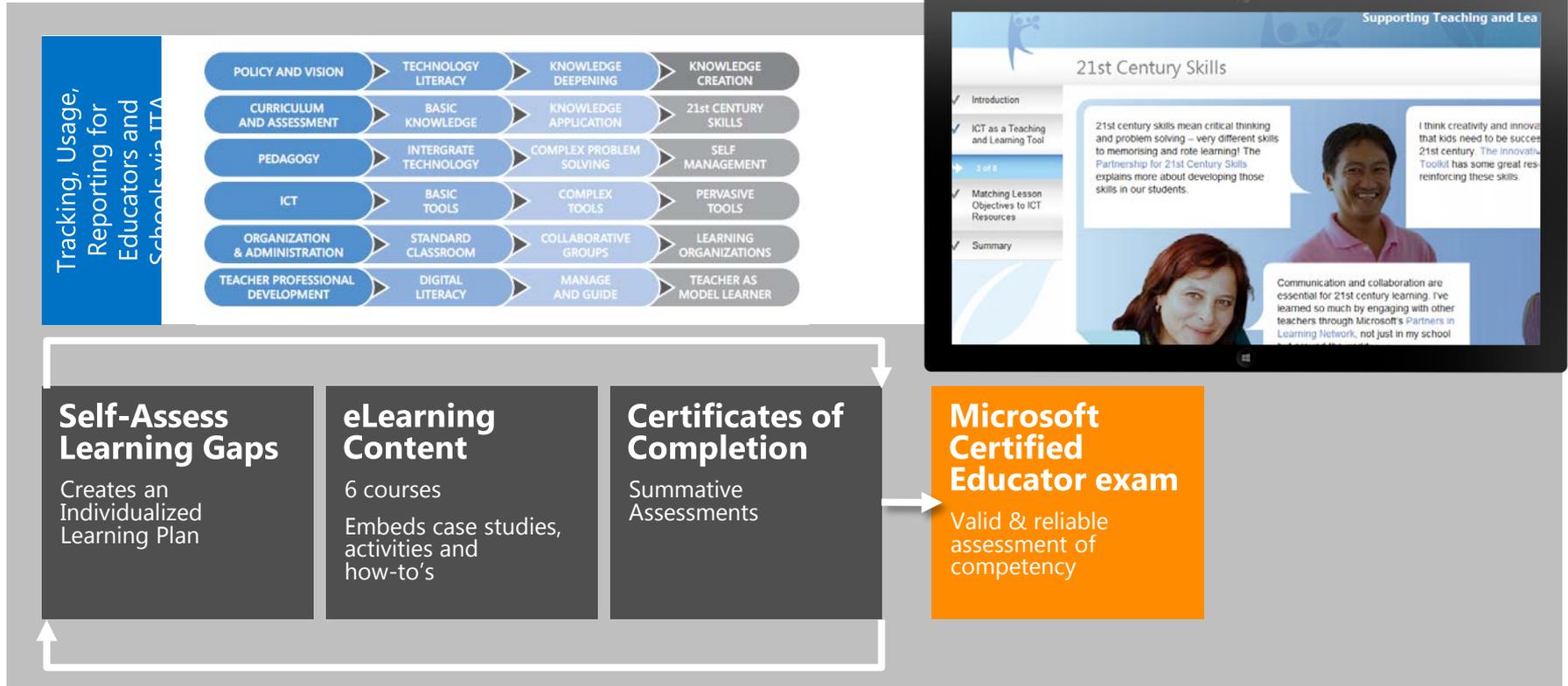
### Microsoft Certified Educator

- Validates educator professional technology literacy mapped to the *UNESCO ICT Competency Framework for Teachers*



# Teaching with Technology (TwT) & MCE

... Extending educator value and credentials with certification



# Computer Science Curriculum:

*Interactive, immersive experiences leading to readiness for college and*

## Interactive Experiences



touchdevelop

## Immersive Learning



## Specialized Skill Validation

Microsoft Official  
Academic Course

Advanced Placement  
Curriculum

Microsoft  
Technology Associate

Advanced Placement  
Computer Science Exams

## Elements of Computer Science

Programming basics and building blocks introduced bit-by-bit by fixing fun apps and games in an interactive web environment.

## Computer Science Core Concepts and Skills

Engaging, immersive learning in full academic courses covering the whole range of programming fundamentals via in-class or independent study.

## Computer Science for College & Career Prep

A curriculum framework covering computer science topics to prepare for college and/or careers.



Skill-validating exams and certification recognized by college and career recruiters.

# LeX Academic Computer Science: Interactive Experiences

## Interactive Experiences



touchdevelop

## Immersive Learning



## Specialized Skill Validation

Microsoft Official  
Academic Course

Microsoft  
Technology Associate

## Get started

Programming basics and building blocks introduced bit-by-bit by fixing fun apps and games in an interactive web environment.

Optimized for students of early adolescent age studying in early secondary grades.

### *Hour of Code with TouchDevelop*

**Level: 100**

**Length: 1 hour | Delivery: TouchDevelop + Video On Demand (VOD)**

A one-hour independent study course that interweaves instructional video with hands-on, guided practice in writing code, tasking students to fix a broken mobile computer game.

**AVAILABLE NOW**

### *Dream it, Make it*

**Classroom Extension for Hour of Code with TouchDevelop**

**Level: 100**

**Length: 5 hours | Delivery: TouchDevelop + Instructor**

Five-hour instructor-led course that transforms the classroom into a game development start-up. Students collaborate to create and publish a fully playable game.

**AVAILABLE NOW**

### *CODExist: The Birth of Bot*

**Level: 100**

**Length: 8 hours | Delivery: TouchDevelop + Video on Demand (VOD)**

Eight-hour modular VOD course that walks students through building a mobile game from scratch using TouchDevelop. Assignments are suitable for homework or flipped classroom environments.

**AVAILABLE NOW**

### *CODExist: Bot Levels Up*

**Level: 100**

**Length: 3 hours | Delivery: TouchDevelop + Video on Demand (VOD)**

Three-hour modular VOD course that walks students through adding new elements to a game such as animations and using the cloud

**AVAILABLE NOW**

# LeX Academic Computer Science: Immersive Learning

## Interactive Experiences



touchdevelop

## Immersive Learning



## Specialized Skill Validation

Microsoft Official  
Academic Course

Microsoft  
Technology Associate

### ***Build skills***

Engaging, immersive learning in full academic courses covering the whole range of programming fundamentals using Python, TouchDevelop, and Visual Studio.

Optimized for students of early- to mid-adolescent age studying in secondary grades.

### **Full-term survey course: *Creative Coding through Games and Apps***

**A first-course introduction to programming**  
**Length: 30 – 90 class hours (6-18 academic weeks) |**  
**Delivery: TouchDevelop + Instructor**

Students gain hands-on experience in designing, programming, and publishing mobile apps and games. Flexible curriculum suitable as independent study or an instructor-led, in-class experience completed in 6, 9, 12 or 18 weeks.

**AVAILABLE NOW**

### **Short, topical course: *Introduction to Programming with Python***

**Level: Advanced beginner**  
**Length: 16+ hours | Delivery: VOD + Python, Visual Studio**

Fast-paced independent study course for students naturally curious about programming. Students learn universally-applicable fundamentals using Python and Visual Studio.

**AVAILABLE NOW**

# LeX Academic Computer Science: Readiness for College and/or Careers

## Interactive Experiences



touchdevelop

## Immersive Learning



## Pursue a path

Microsoft Official Academic Course

Pass any one exam to earn

Microsoft  
Technology Associate

Entry to advanced certifications

Microsoft  
CERTIFIED  
Solutions Developer

Advanced Placement Curriculum

Prepare to pass Advanced Placement Computer Science exams

### Microsoft Academic Official Courses (MOAC)

Premium eBooks, lab manuals, and instructor resources to plan, prepare, and teach courses for Microsoft certification preparation. MOAC classes may be taught in 6-to-16 week terms.

### MOAC for MTA in Computer Science:

#### *Software Development Fundamentals*

Addresses core programming principles; object oriented programming; web applications; desktop applications; and databases in preparation for MTA exam 98-361.

**AVAILABLE NOW**

#### *HTML5 Application Development Fundamentals*

Addresses management of the application life cycle; building the user interface using HTML5; formatting using CSS, and understanding JavaScript in preparation for MTA exam 98-375.

**AVAILABLE NOW**

### Advanced Placement Curriculum

Learn how to program, think methodically and solve problems effectively while preparing to pass College Board Advanced Placement exams

#### **CS 50 for AP Computer Science Principles**

Year-long curriculum mapped to the new AP Computer Science Principles exam. Building on the broadly popular CS50 undergraduate course at Harvard, this course is pivoted for secondary students to focus on how to think algorithmically and solve problems efficiently with computing. Topics include abstraction, algorithms, data structures, encapsulation, resource management, security, software engineering, and web development Course content.

**AVAILABLE 2016**

#### **Java Programming Fundamentals**

12 online activities to introduce or review AP CS Java programming topics. Students complete Office Mix lessons with interactive Code Hunt challenges by writing Java code. Provides hands-on preparation for the AP CS exam.

**AVAILABLE NOW**

# North Carolina, USA



June Atkinson  
North Carolina State Superintendent

“In today’s economy, providing the Microsoft Academy to high school students just makes sense.”

	Pre-IT Academy	1 <sup>st</sup> Year of IT Academy	2 <sup>nd</sup> Year of IT Academy	3 <sup>rd</sup> Year of IT Academy
Number of <b>total</b> MOS certifications	21	8,794	43,630	53,731
Number of <b>student</b> MOS certifications	16	8,065	42,563	52,922
Number of <b>teacher</b> MOS certificates	5	729	1,148	809

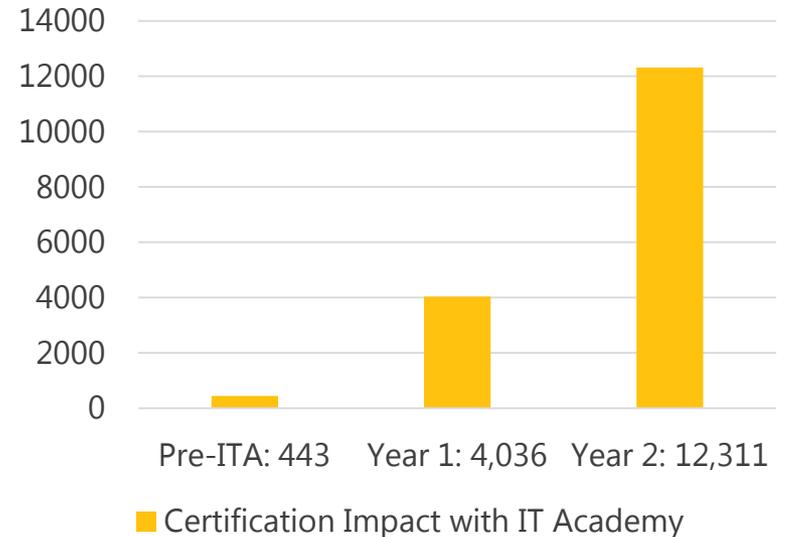
# Washington State, USA



"Putting training and certification in every high school in Washington State will bridge the gap between the world of education and the world of work."

Randy Dorn,  
Washington State Superintendent of Public Instruction

## Industry Certification Impact with IT Academy



Microsoft Office Specialist (MOS) certifications through the Microsoft IT Academy across Washington's public high schools

# FLORIDA (USA)

Key Performance Indicator	Students without Certifications	Students with Certifications	CAPE Academy Students with Certifications
Average GPA	2.64	<b>2.88</b>	<b>2.98</b>
Dropout Rate	2.7%	<b>.6%</b>	<b>.3%</b>
Graduating 12 <sup>th</sup> Graders	71.9%	<b>92.1%</b>	<b>94.9%</b>
Chronically Absent	18.3%	<b>16.2%</b>	<b>11.3%</b>
Disciplinary Action	16.4%	<b>10.3%</b>	<b>9.9%</b>

## Highlights:

- Students achieving industry certification show stronger results on key performance indicators than their non-certified peers on an annual study across more than 1,500 Florida high schools and middle schools.
- The career program is in its 6<sup>th</sup> year in Florida high schools. Over time, industry certification earner graduates outperformed the overall average high school population with consistently higher placement rates in employment or postsecondary education.