

"Student Portfolio Pilot" Summary Spring 2019-Fall 2021

The National CTC led a pilot program to determine whether applicants that go into a job interview with an e-portfolio of their work stand a better chance of getting hired than those without an e-portfolio. Eight colleges participated, teaching the same content across multiple classes. Faculty and students were surveyed following the terms and student employment trends were tracked longitudinally.

Results suggest that most faculty and students found this content valuable, easy to implement as course modules, and helpful in boosting student confidence in their work. Further, students who received this content did get hired into IT jobs more often than students from the "control" group who did not receive the content.

OVERVIEW

The National CTC's BILT (Business and Industry Leadership Team) has repeatedly expressed its collective belief that applicants that go into an interview with an e-portfolio of their work stand a better chance of getting hired because e-portfolios allow applicants the chance to show tangible proof of project work (including group work) and an understanding of essential skills. The National CTC addressed this in its renewal grant, which was awarded in 2017. Grant goal 2B stated that the CTC would "develop student portfolio methodology to determine effect on hiring period post completion." That is, could the CTC not only help teach students how to create and curate an e-portfolio of their work, but also prove that students who receive training in e-portfolios get hired more quickly than students who receive no such training?

The framework of the project was developed by SUNY Erie Community College's IT department chair Louise Kowalski, who incorporates into her program lessons on LinkedIn profiles, professional online presence skills, personal branding strategies, and student e-portfolio curation.

Louise shared her methodology (which can be found here: **tinyurl.com/LinkedIn-e-portfolios**) at two CTC events delivered to faculty from the Convergence College Network faculty community of practice:

- "CCN Summit" in-person workshop September 2018 (23 attendees)
- "LinkedIn and e-Portfolio" one-hour webinar November 2018 (19 attendees)

Google was recommended by Louise as an e-portfolio platform because it's free, but for this pilot project it was left to the faculty and the students to decide which e-portfolio platform worked best for them.

The pilot project's goal was to compare student cohorts who received Louise's content with cohorts who did not, thus creating a "treatment" group and a "control" group.

Control groups were not possible at every participating college. In some cases, the LinkedIn/e-portfolio content was offered as extra credit, thus creating a treatment group through "self-selection." As an aside, one of the faculty noted that students who self-select into the "treatment groups" to pursue extra credit may create bias since those students are uniquely motivated.

The CTC anonymously surveyed students and faculty at the end of each term and conducted regular focus groups with participating faculty (June 2019, February 2020, December 2020, April 2021, and September 2021). Feedback from the surveys and focus groups guided the ongoing evolution and refinement of the project, especially with regard to subsequent survey questions.

Beyond these traditional surveys, faculty also longitudinally tracked the employment status of both groups of students (treatment and control).

	Collin College	El Centro	Florida State Coll Jacksonville	Georgia Southern Univ	Lansing Comm College	Lone Star College	Sinclair Comm College	Univ of North Texas
Spring 2019	Х	Х	X	Х	Х		Х	X
Summer 2019			X		Х		Х	
Fall 2019	X	Х	X	Х	Х	X	Х	X
Spring 2020		Х	X	Х	Х	X	Х	X
Fall 2020								
Spring 2021			X		Х		Х	X
Fall 2021			Х		Х		Х	X

Eight CTC grant partner colleges participated in this pilot project.

El Centro (now Dallas College) started the program, but dropped out in 2020. Student survey results from 2019 below include Dallas College, but those students are not included in the impact numbers.

The content was integrated into a wide variety of classes and grade levels. Participating colleges decided how and where to include the lessons.

- * Collin College CCNA 3
- * El Centro CCNA 3, Cloud Networking, Fundamentals of Security, Security Assessment
- * FSCJ Internship, Microcomputer Applications, Web Technologies
- * Georgia Southern IT Capstone
- * Lansing Internship
- * Lone Star Business Computer Applications, Programming Fundamentals
- * Sinclair Internship, Intro to Databases, Intro to Programming
- * UNT Capstone, Computer Science II, Enterprise Systems Architecture, Secure E-Commerce

Note that the pilot project was originally set to end after the Spring 2020 term. But the decision was made to gather more data and restart it again in 2021. For the "restart," only the colleges who demonstrated the most success in 2019-20 participated.

The total number of students who participated are as follows:

	Treatment students	Control students
2019	416	355
2020	62	37
2021	247	140
Total	725 (57.7%)	532 (42.3%)

STUDENT SURVEY RESULTS

Anonymous surveys were given to both groups of students (treatment and control) at the end of every term to learn more about their perspectives on both the value of LinkedIn and e-portfolio exercises and their impact on employment. While the initial goal had been to ask the same questions across all terms, throughout the project, questions were adjusted based on student and faculty feedback.

Below are select findings.

Treatment students were more likely than control students to create a "properly updated LinkedIn profile" that also "clearly conveys your personal brand." This suggests the LinkedIn-related lessons delivered to the treatment group were successful. But note the uptick among control students from 2019-20 to 2021 who expressed that same confidence (e.g. 30.1% of the 2019-20 control group believed they had a properly updated LinkedIn profile, which increased to 44.8% in the 2021 control group) perhaps as LinkedIn adoption has become more widespread in college curriculum. (Indeed, one student in Spring 2020 complained that they were learning about LinkedIn across multiple classes.)

	Yes	Maybe	No
2019-20 treatment (n=111)	70.3%	13.5%	15.3%
2019-20 control (n=156)	30.1%	14.1%	55.8%
2021 treatment (n=94)	80.9%	2.1%	16.0%
2021 control (n=96)	44.8%	17.7%	33.3%

In your opinion, do you have a properly updated LinkedIn profile?

In your opinion, does your LinkedIn profile clearly convey your personal brand?

	Yes	Maybe	No
2019-20 treatment (n=102)	62.7%	21.6%	14.7%
2019-20 control (n=149)	27.5%	14.8%	57.7%
2021 treatment (n=94)	53.2%	28.7%	10.6%
2021 control (n=96)	36.5%	25.0%	26.0%

Treatment students were more likely than control students to have an e-portfolio they could use in an interview. But while treatment cohort students with e-portfolios stayed more or less the same from 2019-20 to 2021, the number ticked up for the control group from 10.9% to 20.8%. As with the LinkedIn skills mentioned above, we suspect e-portfolio discussion and curation may be happening in more and more classes. In other words, students may not necessarily need to be taught how to curate an e-portfolio.

In your opinion, do you have a digital portfolio of your classwork that you could use on job interviews?

	Yes	Maybe	No
2019-20 treatment (n=105)	53.3%	17.1%	29.5%
2019-20 control (n=156)	10.9%	9.0%	80.1%
2021 treatment (n=94)	46.8%	28.7%	20.2%
2021 control (n=96)	20.8%	31.3%	34.4%

For those who didn't have an updated LinkedIn profile, some of the reasons why (provided by Spring and Fall 2021 students) included:

- don't need LinkedIn yet (not looking for a job)
- lack of time/too busy (haven't gotten around to it yet)

- not a platform I use
- not enough qualifications or experience yet to merit a profile
- not ready to be recruited yet
- not ready to show (needs updating)
- social media aversion
- unconvinced it would be useful getting desired job

For those who didn't have an e-portfolio, some of the student reasons why (provided by Spring and Fall 2021 students) included:

- lack of time/too busy (haven't gotten around to it yet)
- never kept track of classwork
- not enough (or good enough) projects quantity and quality
- not ready to show (needs updating)
- not sure what might be suitable for e-portfolio
- unconvinced it would be useful getting desired job

Student surveys in the treatment group were also asked about the ease of implementing these lessons and whether they would be useful for other classes. The survey results suggest **these lessons are relatively simple** (63.8% overall, n=202, rated the lessons as unchallenging or neutral) **and that students found value in doing them.**

How challenging was it to develop a personal brand, establish a LinkedIn profile, and create a digital portfolio?

	Very challenging	Challenging	Neither	Unchallenging	Very Unchallenging
2019-20 treatment (n=108)	4.6%	31.5%	41.7%	17.6%	4.6%
2021 treatment (n=94)	4.3%	31.9%	40.4%	20.2%	3.2%

Would you recommend that other students develop a personal brand, establish a LinkedIn profile, and create a digital portfolio?

	Definitely	Probably	Maybe	Unlikely
2019-20 treatment (n=108)	56.5%	28.7%	9.3%	5.6%
2021 treatment (n=92)	62.0%	29.3%	8.7%	0.0%

Based on feedback from the faculty and the CTC's National Visiting Committee grant review panel, several questions were asked only of the 2021 students.

Both 2021 cohorts were asked the following questions related to the impact of LinkedIn use. While there are many factors at work here beyond the project's lessons, **those in the treatment group did report more success with internships and interviews** than the control group.

Do you believe that your LinkedIn profile has directly led to an IT internship?

	Yes	Maybe	No	Not sure
2021 treatment (n=94)	20.2%	14.9%	48.9%	16.0%
2021 control (n=70)	12.9%	15.7%	61.4%	10.0%

	Yes	Maybe	No	Not sure		
2021 treatment (n=94)	24.5%	21.3%	39.4%	14.9%		
2021 control (n=70)	14.2%	14.2%	56.6%	15.1%		

Do you believe that your LinkedIn profile has directly led to IT employment interviews?

Both 2021 groups were also asked a follow-up related to e-portfolio use. Although the sample size is small, the results suggest that **employers appreciate the e-portfolio when evaluating a potential new hire**.

If you've used an e-portfolio on a job interview, what was the response from the employer?

	Very positive	Positive	Neutral	N/A
2021 treatment (n=83)	12.0%	14.5%	4.8%	68.7%
2021 control (n=65)	3.1%	0.0%	4.6%	92.3%

Two questions were posed only to the 2021 treatment group regarding the LinkedIn profiles they were taught to create and maintain. Results below suggest that **many students may not have created a LinkedIn profile without the class lessons**, indicating there is value in making LinkedIn a formal element of classwork. Results also illustrate that **the act of creating a LinkedIn profile – and thinking purposely about goals, branding, and skill sets – may have the added benefit of instilling additional confidence in a student's technical ability.**

If you hadn't been specifically taught how to develop a personal brand, establish a LinkedIn profile, and create an e-portfolio, would you have done it on your own?

	Definitely	Probably	Maybe	Unlikely
2021 treatment (n=94)	26.6%	31.9%	16.0%	25.5%

Did developing a personal brand, establishing a LinkedIn profile, and creating an e-portfolio give you additional confidence in your own ability and expertise?

	Yes	Maybe	No	Not sure
2021 treatment (n=94)	64.9%	17.0%	12.8%	5.3%

In November 2021, the CTC attempted to conduct a longitudinal survey of students who had provided their email address on the Spring 2021 survey. None of the 27 students contacted completed the survey.

FACULTY SURVEY RESULTS

Surveys were given to participating instructors at the end of the Spring 2019, Fall 2018, Spring 2021, and Fall 2021 terms. As with the student surveys, while the goal had been to ask the same questions across all terms, throughout the project, questions were revised and adjusted based on faculty feedback. Note also that there is considerable duplication in the answers below since, in many cases, it was the same instructors teaching across multiple semesters.

A majority of faculty responses suggested that **implementing the LinkedIn/e-portfolio lessons was** valuable and easy to deliver in the classroom.

How challenging was it to incorporate into your class these lessons/exercises on personal brands, LinkedIn profiles, and digital portfolios?

	Challenging	Neutral	Unchallenging	Very unchallenging
2019-21 faculty (n=24)	16.7%	75.0%	4.2%	4.2%

What was the response from the students to these lessons and exercises?

	Positive	Neutral	Negative
2019-21 faculty (n=24)	62.5%	37.5%	0.0%

Would you recommend that these lessons and exercises continue in that class?

	Yes	Mavbe	No	l'm not
		waybe	NO	sure
2019-21 faculty (n=24)	66.7%	20.8%	0.0%	12.5%

Would you recommend that these lessons and exercises be expanded into other classes?

	Voc	Maybe	No	I'm not
	Yes	waybe	NO	sure
2019-21 faculty (n=24)	62.5%	29.2%	0.0%	8.3%

IMPACT TRACKING

Each December (2019, 2020, and 2021), participating schools were asked to track the career progress of all previous cohorts. For example, the 2019 cohort would be tracked three times – December 2019, December 2020, and December 2021. See the graphic below.

SPRING 2019 - SUMMER 2019 - FALL 2019 DEC 2019 DEC 2020 DEC 2021 SPRING 2020 - - FALL 2021 DEC 2020 DEC 2021 SPRING 2021 - - FALL 2021 DEC 2021	Employment Audits - who got hired?							
	SPRING 2019 - SUMMER 2019 -	FALL 2019	DEC 2019	DEC 2020	DEC 2021			
SPRING 2021 FALL 2021 DEC 2021	SPRING 2020			DEC 2020	DEC 2021			
	SPRING 2021	FALL 2021			DEC 2021			

The purpose was to determine any difference in employment status between students/graduates who received the LinkedIn and e-portfolio lessons and those who did not. That is, did those who received the lessons get hired faster?

Note that students from the treatment group with LinkedIn profiles and updated employment statuses were easier to track than those from the control group without LinkedIn profiles. Faculty also pointed out that in a climate where students were getting jobs so quickly, hiring patterns may be hard to directly connect to LinkedIn/e-portfolio skills.

This annual impact tracking – also referred to internally as "employment audits" – proved to be the most difficult element of the pilot project and underwent numerous adjustments.

Originally, participating schools were asked to complete a table via email, but the table was too confusing and cumbersome. In fall 2021, with input from faculty, the form was simplified – most notably, the career categories were reduced to just four: "unemployed," "employed in IT," "employed in an industry other than

IT," and "unknown," rather than also trying to track when in a calendar year a student got hired – and moved to an online Google spreadsheet customized for each college based on their reported participation headcount.

Despite the small sample size and the multiple external factors (student grit and ambition, pre-existing industry contacts, labor market conditions*), students from the treatment group did seem to get employed in IT more than those from the control group.

Cumulatively, which includes duplications across the years, 240 treatment students (15.6% of the total) got jobs in IT, while only 29 (2.4%) from the control group got IT jobs.

	Dec	2019	Dec	2020	Dec	2021		llative cated)
PORTFOLIO Still unemployed	129	32.3%	98	21.9%	50	7.2%	277	18.0%
CONTROL Still unemployed	257	76.0%	225	60.0%	12	2.9%	497	40.5%
PORTFOLIO Employed in IT	37	9.3%	135	30.1%	68	9.8%	240	15.6%
CONTROL Employed in IT	5	1.5%	10	2.7%	14	2.7%	29	2.4%
PORTFOLIO Employed in non-IT	0	0.0%	19	14.2%	36	5.2%	55	3.6%
CONTROL Employed in non-IT	0	0.0%	8	2.1%	16	13.1%	24	2.0%
PORTFOLIO Unknown	233	58.4%	196	43.8%	541	77.8%	970	62.9%
CONTROL Unknown	76	22.5%	132	35.2%	470	91.3%	678	55.2%
PORTFOLIO Total	399		448		695		1542	
CONTROL Total	338		375		515		1228	

* Specifically, two faculty members in 2021 noted that students are getting hired right out of class "no matter what they have or don't have." This trend has continued – in January 2023, one faculty member stated that this is still happening. "Lately we have more jobs and internships than students to fill them." She also predicted that "if we go into a recession and with remote work, the portfolio will become more important."

VIDEO OUTPUT

As early as June 2019, faculty were asking for short supplemental videos to use in the classroom explaining value of LinkedIn and e-portfolios to students. To that end, three videos were created in summer 2019:

"Student Portfolio Pilot Project Overview" (4 minutes), created by CTC staff, intended for faculty members joining the pilot project.

https://www.youtube.com/watch?v=-s9h1R9dtuo

In conjunction with this video, the original project overview document was revised based on feedback from the June 2019 faculty focus group, which discussed what worked and what didn't work in that initial Spring 2019 semester.

"Value of e-Portfolios" (1 minute), a testimonial by Louise Kowalski, intended for classroom use. https://www.youtube.com/watch?v=KU85u1OMqK8

"Value of LinkedIn" (1 minute), a testimonial by Louise Kowalski, intended for classroom use. <u>https://studio.youtube.com/video/TNEX37xOtEo/edit</u>

The CTC's National Visiting Committee in April 2020 also requested videos be created to supplement the LinkedIn/e-portfolio lessons. As a result, the CTC delivered two additional videos in the fall of 2020:

"IT Portfolio Redoux" (20 minutes), presented by Collin College's Tara Lewis and Jana Nixon, discussed strategies and best practices to help students develop and curate e-portfolios of their work. This talk was a part of a larger Convergence College Network faculty meeting on Zoom, which was recorded and repurposed as a shareable YouTube clip. https://www.youtube.com/watch?v=7LcKiJEa4zM

"Avoiding LinkedIn Blunders" (28 minutes), presented by Dr. Ruby Daniels from Texas A&M University San Antonio, discussed best practices for students to employ on LinkedIn to improve transition from college to career. This was delivered as a Zoom webinar, which was recorded and repurposed as a shareable YouTube clip. https://youtu.be/iUTetYPVqjk

Note also that this "Avoiding LinkedIn Blunders" webinar on LinkedIn strategies was converted into an article published in May 2021 by the *Community College Journal of Research and Practice*. The article supplemented Dr. Daniels' LinkedIn research with the National CTC's survey results from that December 2019 webinar to prove the ongoing need for further education to teach students how to best leverage LinkedIn for employment.

Finally, the September 2021 faculty focus group realized that while most colleges have career centers that help students with mock interviews or resume writing, there is little to no training related to using e-portfolios with employers. As a result, the CTC produced a 5-minute video – interviewing four IT technical executives – explaining how students might effectively leverage their e-portfolio once they're in the room at a job interview.

"Perspectives on Using Student Portfolios in Job Interviews" (5 minutes) https://www.youtube.com/watch?v=mp14hbLSpU0

Sinclair also shared with the group a short video created to introduce the e-portfolio concept to students, which the instructor believed was helpful. <u>https://ensemble.sinclair.edu/Watch/o3NHz4n8</u>

LESSONS LEARNED

Below are informal findings and observations identified by CTC grant staff and participating faculty. These should be considered by anyone attempting to replicate this e-portfolio project.

* There is no easy way to track students once they graduate. Only one of the participating colleges seemed to have a pre-existing system in place to effectively survey graduates. For the others, it was a more time-intensive effort relying on both personal follow-ups and LinkedIn searches. As mentioned earlier, those in the control group by definition likely didn't have LinkedIn profiles.

What might be the most efficient tracking solution – asking all participating students to sign informed consent documents – was judged to be too cumbersome.

Faculty also suggested creating a LinkedIn community and inviting the pilot project students to join. That could make it easier to track everyone, although that would run counter to the project's anonymity: as of now, the CTC doesn't know the students' names. But it was argued that by joining an e-portfolio LinkedIn group, then the students are choosing to "go public."

* Researching what "gets" someone hired is a complex problem. There are many outside factors at work. That made it very hard to identify – even with all of the surveys and tracking the pilot project completed – how impactful the LinkedIn and e-portfolio lessons truly have been. They've surely helped, but how much?

* The LinkedIn and e-portfolio exercises worked better as a module inside a 16-week course. Those with 8-week courses had trouble squeezing this extra content in.

* Faculty noted it was more difficult to keep tabs on student progress in larger, "weed out"-style classes. This is one reason why LinkedIn/e-portfolio lessons were implemented in so many smaller-scale internship classes.

* Faculty also pointed out that students in internship classes were facing "higher stakes" because they were actively engaging in a job search process and were therefore more receptive to LinkedIn and e-portfolio exercises.

* Likewise, e-portfolio lessons seemed to be better received by students closer to graduation. Some of the first-year students didn't yet understand why job-seeking tools like LinkedIn and e-portfolios were relevant.

* That said, the ideal method for incorporating LinkedIn and e-portfolio lessons is to introduce the concepts early in the program so students then have "shells" to fill as they take classes and gain skills and experience. This is the model that Louise Kowalski, the creator of these lessons, followed.

* The Twitter element of Louise's lessons was unanimously removed from the project. Too many students felt uncomfortable with that level of social media engagement.

* One suggestion by faculty was to conduct regular follow-ups with employers of the new hires to ask about the impact of e-portfolios in the interview process. Did e-portfolios make a difference? This approach was discussed several times in faculty focus groups, but ultimately, there simply wasn't enough manpower to pursue.

* Faculty also suggested future iterations of this project consider including training to help students prepare for Zoom-style job interviews on video.

* It's also important to note that students just starting out in a program may not yet have content to fill the e-portfolio "shell."

FURTHER CONTEXT

Across three summers, the National CTC surveyed faculty members of its Convergence College Network community of practice about the role of LinkedIn and e-portfolios in their classroom. These surveys include many respondents not involved in this pilot project. The results are below.

Over time, more and more faculty are integrating those elements in the classroom. They're becoming commonplace.

Do you encourage your students to create a Linkedin promes						
	Required Encouraged					
Summer 2018 (n=34)	2.9%	47.1%	50.0%			
Summer 2019 (n=39)	25.6%	48.7%	25.6%			
Summer 2020 (n=46)	17.4%	67.4%	8.7%			

Do you encourage your students to create a LinkedIn profile?

Do you encourage your students to create portfolios of their group project work?

	Yes	Maybe	No	I will now	
Summer 2018 (n=33)	42.4%	15.2%	30.3%	12.1%	
Summer 2019 (n=39)	59.0%	15.4%	20.5%	5.1%	
Summer 2020 (n=46)	71.7%	10.9%	13.0%	4.3%	

In Fall 2020, the National CTC asked members of its National Business and Industry Leadership Team (BILT) about their perspectives on the value of LinkedIn profiles. The purpose was to confirm that the platform is an appropriate one for students to use for job searches and to promote their e-portfolio work.

Do you or your HR department use LinkedIn as a resource during the recruiting and/or hiring process?

	Often	Sometimes	Seldom	Never	I'm not sure
Fall 2020 BILT	52.5%	21.1%	5.3%	10.5%	10.5%
(n=19)	52.5%	21.1%	5.5%	10.5%	10.5%

Would you consider LinkedIn to be an appropriate platform for an applicant to share a digital portfolio?"

	Definitely	Probably	Possibly
Fall 2020 BILT	57.9%	31.6%	10.5%
(n=19)	57.5%	51.0%	10.5%

The National CTC's employer group expressed interest in what platforms students were using. A survey question was added to the Spring 2021 and Fall 2021 student surveys for the treatment group.

What platform are you using for your e-portfolio?

	Google	LinkedIn	Other*
Spring 2021 (n=58)	51.7%	8.6%	6.9%
Fall 2021 (n=36)	19.4%	30.6%	27.8%

*"Other" here included personal websites, school websites, Symplicity, Indeed, and GitHub.

Finally, because of the National Visiting Committee review panel's interest in making sure the e-portfolios met the needs of local employers, in Fall 2021, the pilot faculty survey included three new questions about employer preferences regarding e-portfolios.

In October 2022, for comparison, those same three new questions were posed to a larger group of IT faculty – part of the National CTC's "Convergence College Network" (CCN) community of practice – that weren't a part of the student portfolio pilot project.

	Yes	Maybe	No	l'm not sure
Fall 2021 pilot faculty (n=7)	71.4%	14.3%	0.0%	14.3%
Fall 2022 CCN faculty (n=15)	53.3%	33.3%	0.0%	13.3%

Do you believe that local employers find portfolios helpful in job interviews?

Do you believe that the specific format or platform of a student portfolio (e.g. Google vs LinkedIn) matters to local employers?

	Yes	Maybe	No	l'm not
				sure
Fall 2021 pilot faculty (n=7)	0.0%	0.0%	71.4%	28.6%
Fall 2022 CCN faculty (n=15)	26.7%	13.3%	13.3%	46.7%

What platform (if any) have you heard your local employers prefer for e-portfolios?

	LinkedIn	GitHub	Google	No preference	l'm not sure
Fall 2021 pilot faculty (n=7)	28.6%			28.6%	42.9%
Fall 2022 CCN faculty (n=15)	53.3%	20.0%	20.0%	6.7%	33.3%



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