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## How training and feedback in on-campus jobs increase systems thinking skills for Generation Z student employees

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**How training and feedback in on-campus jobs increase systems thinking skills  
for Generation Z student employees.**

A Thesis

Submitted to the Faculty of the  
Department of Leadership Education: Organizational Leadership  
Graduate Studies of Winona State University

by

Kim Fisher

In Partial Fulfillment of the Requirements  
for the Degree of  
Master of Science in Organizational Leadership

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## **Chapter 1: Introduction**

Generation Z encompasses those born between 1995 – 2012 (Maloni et al., 2019). This generation is the least likely thus far to have employment experience before college (Schroth, 2019), reducing the opportunities for on-the-job experience to prepare them for post-college employment. Generation Z is estimated to occupy a quarter of the workforce in the mid-2020s (Merriman, 2020). This generation is the most educated generation (Fry & Parker, 2018), and there is an opportunity for higher education institutions to play a role in career preparedness through feedback and training in on-campus employment.

Systems thinking creates more competent problem solvers, communicators, and collaborators who are ready to take on problems that do not yet exist (Grohs et al., 2018), which are qualities that employers seek (Chamorro-Premuzic & Frankiewicz, 2019). On-the-job experience can be one method to develop systems thinking skills, as a balance of challenge and feedback fosters competence and growth (DeRue & Wellman, 2009) in student employees. Approximately 80% of college students participate in some form of employment during their time as a student (Burside et al., 2019), and this research explores how feedback and training can be used in on-campus employment to develop systems thinking skills in Generation Z college students. The goal is to better prepare them for the job search and workplace after college.

### **Problem Statement**

Generation Z students are not as prepared for the workplace by the time they graduate college as previous generations have been. Generation Z will make up a large portion of the workforce in the coming years, and employers are seeking new hires who can solve problems and collaborate (Grohs et al., 2018). Without the proper experience and professional

development, Generation Z will not be as hireable or as prepared for the realities of the workplace when they graduate college.

Fewer Generation Z students holding jobs during high schools means systems thinking skills aren't being developed as early as previous generations. When students reach the college level and begin on-campus jobs, higher education institutions can increase the value of that degree by spending time developing skills like problem-solving, curiosity, adaptability, and collaboration, all components of systems thinking (Chamorro-Premuzic & Frankiewicz, 2019). There is an opportunity to create an experience that is as valuable as classroom learning in terms of preparation for the professional world. Rather than analytical or technical skills, employers can develop systems thinking skills.

The workplace requires an understanding of a system, and Generation Z prefers to learn through experience (Schroth, 2019). Because Generation Z has not had the same amount of employment experience by the time they graduate college as previous generations, they have not had the proper setting, training, and feedback to develop workplace systems thinking skills through experience. It is important that Generation Z is prepared to be the next wave of professionals. This generation is ready to commit to the right employer, seek job opportunities that offer growth (Hughes, 2020), but if they feel unprepared and a shock of reality when they step into their first profession they will not be retained as an employee (Maloni et al., 2019). The concept of adult learning is typically for those who are above the age of 25, and who have been out of school for multiple years (Malik, 2016), and college students and recent college graduates are in the habit of learning for a grade rather than for the sake of learning and developing (Ryan & Deci, 2000). It costs an organization much more than money to hire and onboard an employee that is a bad fit at their company (Laurano, 2015), so in addition to interruptions in income and

trajectory for the young professional, companies will need to prepare to spend more on recruiting and onboarding. Training and feedback in higher education employment environments (often the first work experience many Generation Z students receive) could possibly be used as a tool to better prepare these students for post-college employment to avoid these issues for the individual and employers.

### **Background of the Problem**

Generation Z is not ready for the workplace due to low employment experience before college. On-campus employment is under-utilized as a learning opportunity for students to learn skills that will prepare them for the professional world. Skills like collaboration, problem solving, and self-directed learning are sought out by employers who might hire these students upon graduation.

Adult learning theory is practiced in most workplaces but isn't applicable for college students based on the aforementioned demographic this theory is directed toward. On-campus workplaces need to find a balance between educational techniques, like experiential learning, and adult learning theory to properly prepare students for the professional world after college.

There are few studies that have studied the specific on-campus workplace environment, other than the National Association of Student Personnel Administrators which focuses on stats from an institutional perspective on student employment (Burnside et al., 2019). The most common suggestion for learning systems thinking skills is experience or problem-based learning. (Grohs et al., 2018).

This research is trying to address how on-campus employment training and feedback can be used to develop system thinking skills in Generation Z student employees, a topic that is not well represented in existing research.

## **Research Questions**

This research examines the connection between different types of training (both onboarding and continual), and feedback, and their connection to systems thinking ability in Generation Z college student employees. The study is motivated by an interested in how to encourage student employees to think in terms of a larger system.

The research questions are:

RQ1: What types of on-campus workplace onboarding training strategies develop systems thinking skills in Generation Z college students?

RQ2: What types of on-campus workplace continuous training strategies develop systems thinking skills in Generation Z college students?

RQ3: What types of on-campus workplace feedback develop systems thinking skills in Generation Z college students?

## **Limitations/Delimitations**

This research was done with a sample of convenience from a higher education institution in Minnesota. This institution had a high percentage of on-campus employment only available for students who qualified for employment funded by federal funds (work-study), so it is likely that there were fewer students included who did not qualify for financial assistance. The students who participated held on-campus jobs during COVID-19 shutdowns, which reduced the eligible population due to lower demand for student employment on campus.

A low number of student employees agreed to participate in the study, over 50% of the participants did not complete the first portion of the study (survey), and only one student employee agreed to participate in the second portion of the study (interview). Because of these limitations, the sample size is small.

In addition to training and feedback, there are multiple factors that could influence a growing understanding of systems thinking, including personality type and strengths, confidence or competence felt by the student, and the cognitive and social development that occurs as a student progresses through their college years.

### **Definition of Terms**

A system is a collection of parts that can operate independently but interact regularly to create an outcome they wouldn't be able to accomplish on their own. Simply put, **systems thinking** is a way of thinking about systems (Arnold & Wade, 2015).

**Generation Z** is defined as individuals born between 1995 and 2012 (Maloni et al., 2019). Traditional college students fall within this age group at the time this research was done.

### **Summary**

There is an opportunity to examine how on-campus employment can be used as a tool to develop systems thinking skills in Generation Z college student employees. Generation Z learns best through experience and has not had the opportunity to learn about workplace systems and how to operate within them due to their lack of employment experience compared to other generations. Through training and feedback, on-campus jobs are a good environment for experiential learning that could help develop systems thinking skills in Generation Z student employees to prepare them for the workplace after college. The following literature review covers research and articles surrounding the characteristics of Generation Z, as well as methods for workplace and systems thinking learning.

## **Chapter 2: Literature Review**

### **Introduction**

In preparation for research to explore how training and feedback in on-campus jobs can increase systems thinking skills within Generation Z student employees, the literature reviewed covered a variety of related subjects. These are summarized in this chapter, organized by the topics Generation Z traits and workplace challenges, workplace training and feedback strategies, and systems thinking. The survey and interview process used to gather qualitative data is outlined in the appendices of this paper (see Appendix A and Appendix B). Descriptive statistics were used for analysis.

### **Historical Overview of the Problem**

Generation-Z was occupying spaces from secondary education through early professional positions at the time of this research. Generation Z was projected to be the most highly educated generation thus far. According to Barnes & Noble College (2015), 82% of Generation Z students planned to go directly from high school to college and saw higher education as a practical tool for growth and financial stability. A focus on education and the competitive advantage perceived to be gained from extra curriculars caused this generation to have the least amount of work experience. Other factors contributing to lack of work experience include higher income households, and lower-level jobs held by older generations (Schroth, 2019). The next wave of college educated employees is of this generation, and higher education institutions have the potential to benefit students and the institution by providing more structured on-campus employment experiences. Required field-related experience like internships and clinicals is the current focus of on-the-job experience as a learning tool for students, rather than the optional on-campus employment (Weiss et al., 2014). Higher education institutions provide on-the-job

experience through their degree requirements as well as on-campus employment. This research will only focus on on-campus employment.

## **Generation Z**

### ***Traits***

Generation Z's upbringing, overseen by parents who are trying to correct from their own upbringing of disconnection and overscheduled time (Ricketts, 2016), has fostered a risk-averse nature due to a slower and simpler childhood (Chicca & Shellenbarger, 2018; Ricketts, 2016). A fatigue of social media and digital connection, though still shown to be the main form of communication (Schroth, 2019), has created a craving for a more physical way of interacting including vinyl records, board games, and sharing experiences (Ricketts, 2016).

Generation Z students prefer to learn through a collaborative approach rather than being told (Schroth, 2019), but interestingly teamwork within educational settings isn't appealing to Generation Z as shown by multiple studies (Titko et al., 2020). In contrast, one study that examined the professional expectations of this generation showed that Generation Z preferred to work in teams (Iorgulescu, 2016). In the workplace, Generation Z has rated learning as a lower priority than previous generations, but value experiential learning environments when learning is to take place (Maloni et al., 2019).

Generation Z prioritizes stability in their career (Iorgulescu, 2016; Titko et al., 2020), and financial stability including income, benefits, and retirement (Maloni et al., 2019). Their money-oriented tendencies are largely in part due to the 2008 financial crisis and the economic instability in which they've grown up (Chicca & Shellenbarger, 2018; Ricketts, 2016). Generation Z is more likely to display employer loyalty than Millennials (Chicca & Shellenbarger, 2018). They seek meaningful work and value seeing the results of their work (Maloni et al., 2019).

Continual professional development (Titko et al., 2020) and open, honest communication (Baum, 2020), along with regular feedback are expected by Generation Z (Schroth, 2019). Unrealistic expectations may be present for how much individual attention one will receive from a manager (Chicca & Shellengbarger, 2018). It was found that Generation Z has accurate expectations for income level (Iorgulescu, 2016).

### ***Workplace Challenges***

Generation Z has the highest level of education amongst generations thus far, but also has the least amount of workplace experience. It is estimated that by 2024, only 25% of teens will hold a job, compared to 60% in 1979 (Schroth, 2019). This lack of experience in the workplace can foster unrealistic expectations of the work environment (Chicca & Shellengbarger, 2018). Lack of professional and interpersonal communication skills is an example of reduced preparedness due to workplace inexperience. Generation Z reports 74% of their daily communication is digital (Schroth, 2019). Limited soft-skill development from entry-level Generation Z employees creates a dependency on the employers to train these skills in the workplace (Titko et al., 2020). It is important that expectations to learn these skills are clearly defined as early as the interview process (Schroth, 2019).

### **Workplace Training and Feedback Strategies**

It is suggested that when onboarding Generation Z employees, companies train current managers and leaders to meet this new generation of employees where they are at and create a supportive environment for retention and growth (Chicca & Shellengbarger, 2018). Continuous feedback and opportunities for growth is a high priority for Generation Z (Titko et al., 2020). Multi-generational mentorship can be built into a company's operations to provide feedback through professional relationships. This benefits young employees by transferring organizational

wisdom and benefits older generations by embracing new technologies (Woods, 2016).

Structured training for mentors or coaches, and one-on-one coaching can serve two purposes: the efficacy of those in leadership roles, and the trust subordinates have in their leaders. A facilitation of challenge, support, then feedback is suggested to be most effective coaching strategy (Gro & Gjerde, 2014).

Understanding the goals of the organization, how one can contribute to the system, and how to seize opportunities for professional growth are learning concepts to encourage a growth mindset in young professionals (Bradbury, 2019). The how-to-feel approach, rather than what-to-do can encourage a sense of ownership over a company's success with employees (Xiong et al., 2013). For example, understanding ones' role within the larger organization and field can help young professionals, particularly Generation Z, connect to the brand they represent. A brand is more than a logo. It encompasses a culture, and how that organization is perceived internally and externally. Brand-centered behaviors should be rewarded with recognition and compensation, and it is important that the top of organizations support this (Al-Shuaibi et al., 2016).

Generation Z employees benefit from an explanation whenever they are told "no" or asked to do something differently. The education system has trained them to ask questions to gain a deeper understanding. Similarly, the professional setting may be the first exposure to professional types of communication such as phone calls or face-to-face conversations that this generation receives (Bradbury, 2019), and employers need to be intentional about training those skills and etiquette expected from employees.

The workplace is a prime environment for learning, since over 70% of learning happens outside the formal classroom setting. Generation Z are included in a new wave of problem-based or active learning approaches, which involve concept application in the areas of their lives they

consider important (Rickes, 2016). The vision and goals of student employment varies across campuses, but in general the top priorities are equipping students with career readiness competencies and improving students' financial security. Financial barriers like competitive pay, along with full-time staffing capacities and inconsistent campus-wide practices are barriers for successful student employment. Collaboration is one of the top eight skills employers look for, according to the National Association of Colleges and Employers (Burnside et al., 2019).

Systems thinking involves consideration for other parts of a whole, which in many professional settings translates to collaboration with coworkers, other departments that provide different functions, and partner organizations that serve clients or customers in a complimentary way.

### **Systems Thinking**

A system is “a regularly interacting or interdependent group of items forming a unified whole”, or “an organized set of doctrines, ideas, or principles usually intended to explain the arrangement or working of a systematic whole” (Merriam-Webster, n.d.). The key is that a system has interacting components and works as a whole. Systems can be small, like two cogs that rotate together. If one of the components is broken, the system won't work well. Systems can be as complex as global trade, where policy change, draught, or accidents can interrupt the delivery date of a package on the other side of the world.

Systems thinking has had multiple definitions over the years, since Barry Richmond coined the term in 1987 (Arnold & Wade, 2015). Peter Senge's (1990) simplified definition is “Systems thinking is a discipline for seeing wholes” (p 68). Arnold and Wade (2015) propose a definition that encompasses and expands other definitions included in their research, the result of which follows:

Systems thinking is a set of synergistic analytic skills used to improve the capability of identifying and understanding systems, predicting their behaviors, and devising modifications to them in order to produce desired effects. These skills work together as a system. (p.675)

Higher Education Institutions provide an environment that requires systems thinking. Multiteam systems (MTIs) involve teams with distinctly separate responsibilities working together to accomplish a common goal. (Salas et al., 2009) On a college campus this consists of student service offices, academic departments, and functions like tech support, maintenance, and dining. There is the potential for some individuals to have responsibilities that serve multiple teams, or roles may move from one team to another as a project evolves. Each team could be successful on its own, but the system could still fail in its shared goal if these teams do not cooperate. Through on-campus employment, students are exposed to how a system of many parts works together to achieve the goals of the entire institution.

### **Theoretical Framework**

There are theories on the stages of development for college students, such as William Perry's Theory of Intellectual and Ethical Development. Perry's theory states that as students age through college, they move from a dualistic view of the world where there is right or wrong, to an understanding of the complexities of the world along with their own deduced opinion of what is right (Locklin, 2013). This could be used to provide some guidance on planning for training as supervisors work with students that range from their early college years to non-traditional students.

The Adult Learning Theory (useful in more traditional workplaces) applies to those over the age of twenty-five who have spent time out of school (Malik, 2016). Generation Z college

students have typically moved directly from high school to higher education, and do not fall into the adult learner category. For this reason, theories like Kolb's Experiential Learning Model are more appropriate. The on-campus workplace, however, is a place where Generation Z student employees will begin to apply some concepts of the Adult Learning Theory, such as self-efficacy and wanting information that is timely and applicable to the job at hand (Malik, 2016). Student employees still have a strong connection to the classroom learning environment while they work on campus, and experiential learning in on-campus jobs provide the opportunity to transition into learning styles more suitable for the workplace, such as adult learning.

According to experiential learning, self-efficacy and personal experience influence how one learns and their ability to apply knowledge (Manolis et al., 2013). Learning happens through experience that emphasizes the learning rather than the outcome, is continuous, and is both objective and subjective (Kolb, 1984). Experiential learning improves the ability to apply information in the real world and provides the tools to continue learning independently (Manolis et al., 2013).

### **Summary**

Generation Z prefers to work in teams and is craving more physical and in-person interactions. Generation Z prefers to work in teams but is lacking the experiential learning that takes place in the professional settings. Workplaces can prepare for this new generation to enter the workforce through techniques like training current employees to work with Generation Z, clearly communicating their brand and expectations, and offering problem-based or active learning approaches to training. Systems thinking is a skill that employers look for in new hires, and Generation Z is lacking this skill in the professional setting. Because Generation Z is the most highly educated generation, on-campus employment could be used as the experiential

learning opportunity to develop systems thinking skills in student employees. On-campus employers can begin to bridge the gap between more traditional classroom learning and adult learning by strategically emphasizing experience and learning itself. The results of the research done to explore how training and feedback can be used to develop systems thinking skills in Generation Z is in the following chapter.

## **Chapter 3: Methodology**

### **Introduction**

Higher education institutions serve many purposes beyond curriculum and syllabi. Preparing students for the workplace after graduation can be considered one additional responsibility higher education institutions have. This chapter explains the design, setting, and sample used in this research examining how the workplace environment for on-campus employment can foster learning experiences that develop systems thinking skills in our Generation Z college student employees.

### **Research Design**

The research for this study was qualitative, which aligns with the topics of training, feedback, and systems thinking. These three subjects do not have quantitative methods of measurement but can be examined through the sharing of experiences and perceptions. Survey options allowed participants to select the different types of training and feedback previously experienced in on-campus jobs, and the perceived impact of the work being done.

The method for research included a two-part study. Part one was a survey to determine demographics, what type of training and feedback had been experienced in current on-campus employment, and the level of systems thinking the student employee currently possessed. Part two was a follow-up interview with the participant to discuss their survey responses and collect qualitative data about their experiences as a student employee, specifically exploring stories about training, feedback, and the concept of being part of a system. Only one participant completed the interview.

## **Sample**

The sample for this study was made up of 19 college students at a four-year medium-sized public university in Minnesota, born between 1995 and 2003 (Gen-Z, and over the age of 18) who are employed in an on-campus job. On-campus jobs could include clerical, student and community services, food service, maintenance and groundskeeping. This was a sample of convenience, as the option to participate went out to any student employees who had worked on-campus in the past year, and who were willing to participate.

## **Instruments**

Qualtrics, an online survey software, was used for the survey. Low-risk data was collected. The informed consent, survey, and interview questions are in the appendices of this paper. The survey was administered through an email invitation with a link to the survey sent to all students at the higher education institution (see Appendix C), followed by flyers with instructions to access the survey. The survey determined demographics, what type of onboarding, continuous training and feedback had been experienced, and the level of systems thinking skills in the student employee. The survey included two types of multiple-choice questions. The first question type allowed the participant to agree or disagree, and the second question type allowed them to select all applicable answers from a variety of training and feedback types.

## **Data Collection**

Participants had two weeks to complete the survey after the initial email invitation went out to all students. Incomplete surveys and surveys from those who did not fall within Generation Z were discarded. Survey results were stored in Qualtrics and anonymized before being put into a spreadsheet for further review. The levels of systems thinking were paired up

with each separate type of training (onboarding and continuous), as well as feedback received by each participant, and placed in separate spreadsheets.

### **Data Analysis**

Survey results were placed in a spreadsheet and organized into pivot tables to compare training and feedback with the level of systems thinking. Participants were asked about perceived impact of work, and each selection made was assigned points. The sum of points for each participant were assigned a level of systems thinking from none to high (see Table 1 and Table 2). The smaller the perceived impact of work, the lower the points awarded to that selection, and visa-versa. “My university as an institution” and “the students within my university” are the same level of perceived impact and were both awarded the same number of points (three). The sums of perceived impact selections were translated to a level of systems thinking from none to high (see Table 2).

#### **Table 1**

*Levels of Perceived Impact and Points Awarded Per Choice*

<b>My work has an impact on the following</b>	<b>Points</b>
My working team	1
My office or department	2
My university as an institution	3
The students within my university	3
The community in which my university is located	4
None of these	0

**Table 2***Sum of Perceived Impact Points, and Systems Thinking Level*

<b>Sum of perceived impact</b>	<b>Systems thinking level</b>
0	None
1-4	Low
5-8	Developing
9-13	High

Age and amount of time in the current on-campus employment position were separately compared to systems thinking level. Each individual type of training and feedback was compared to the level of systems thinking for the student employees. Some training and feedback types did not have enough data to make a comparison between participants who had and had not experienced that type of training or feedback. For example, only one participant (5%) experienced online personal development as training. That one participant also displayed a high level of systems thinking. There is not enough data to reliably connect the type of training to the systems thinking outcome.

### **Summary**

Through this survey low risk data was collected from campus-employed college students within Generation Z. The data was analyzed by the researcher to identify themes of work experiences surrounding training and feedback and understanding of systems thinking. This is helpful for higher education institutions as they more effectively use on-campus employment as a learning opportunity for student employees to prepare for the workforce after college. The following chapter includes the results of the research.

## Chapter 4: Results

### Introduction

The following chapter outlines the survey results, specifically how different types of training and feedback relate to the levels of systems thinking reported by participants. One of 19 participants opted into the interview portion of research. Interview responses were not heavily considered in the results of this study. The highlights of the single interview included in research are included below.

### Demographic Information

Nineteen students between the ages of 18 and 26 and holding on-campus jobs at a four-year public school in Minnesota completed this survey. Forty-seven percent held their on-campus job for 0 to 1 years, 16% held their on-campus job for 1.5 to 2 years, 16% held their on-campus job 2.5 to 3 years, and 21% held their on-campus job 3.5 to 4 years. Twenty-three students started the survey and did not complete it. One participant participated in the interview, and the rest declined to participate in an interview.

The relationship between demographics and systems thinking levels are shown in the tables below. Table 4 shows birth year and systems thinking levels, and Table 3 shows the number of years in the current job and systems thinking level.

The most represented birth year was 1999 (ages 21-22), and 50% (4 of 8) of those in that age group displayed high levels of systems thinking. Strictly by percentage, those born in 2001 and 2002 (ages 18-20) showed the highest level of systems thinking at 100% of the age group, however fewer participants were in each age group. There were three participants in the 2001 age group (18-19), and two participants in the 2002 age group (19-20) (see Table 3).

**Table 3***Birth Year and Systems Thinking (ST) Level*

<b>Birth year</b>	<b>ST none</b>		<b>ST low</b>		<b>ST developing</b>		<b>ST high</b>	
	<b>Percent of age group</b>	<b>Count</b>						
1998	100%	1	0%	0	0%	0	0%	0
1999	0%	0	25%	2	25%	2	50%	4
2000	0%	0	20%	1	20%	1	60%	3
2001	0%	0	0%	0	0%	0	100%	3
2002	0%	0	0%	0	0%	0	100%	2

The largest representation in terms of time in the current job was for those who had been in their job for around 0.5 years. Fifty percent (3 of 6) of that demographic displayed a high level of systems thinking, 33% (2 of 6) displayed a developing level of systems thinking, and 17% (1 of 6) displayed a low level of systems thinking. Those who had worked at their jobs from 1.5 to 2.5 years had the highest percentage of high systems thinking levels at 100% each, however 1.5 and 2 years of experience only had one participant in each demographic category, while 2.5 years of experience only had 2 participants (see table 4).

**Table 4***Years in Current Job and Systems Thinking (ST) Level*

<b>Years in Job</b>	<b>ST none</b>		<b>ST low</b>		<b>ST developing</b>		<b>ST high</b>	
	<b>Percent of age group</b>	<b>Count</b>						
0.5	0%	0	17%	1	33%	2	50%	3
1	0%	0	33%	1	0%	0	67%	2
1.5	0%	0	0%	0	50%	1	50%	1
2	0%	0	0%	0	0%	0	100%	1
2.5	0%	0	0%	0	0%	0	100%	1
3	0%	0	0%	0	0%	0	100%	2
3.5	0%	0	50%	1	0%	0	50%	1
4	50%	1	0%	0	0%	0	50%	1

## **Data Analysis**

The qualitative data was analyzed using pivot tables and descriptive statistics to compare types of training and feedback with varying levels of systems thinking ability. Individual types of training were compared to levels of systems thinking (none, low, developing, or high), and individual types of feedback were compared to levels of systems thinking.

## **Survey**

### ***Demographic***

Questions one and two were demographic questions, asking for participants' year of birth and length of employment. Table 3 and Table 4 show the results of demographics questions.

### ***Feedback Experienced***

Question three asked if participants receive formal feedback, such as scheduled employee reviews, and one-on-one meetings with a supervisor or mentor. Twenty-six percent (5 of 19) of participants stated that they did receive formal feedback, and 74% (14 of 19) stated they did not receive formal feedback.

Question four asked if participants receive informal feedback, such as real-time discussions, and corrections during work. Ninety-five percent (18 of 19) of participants stated that they did receive informal feedback, and five percent (1 of 19) stated that they did not receive formal feedback.

Question five asked if positive feedback was most often provided in a public setting compared to a private setting. Sixty-three percent (12 of 19) of participants stated that positive feedback was most often provided in a public setting, and 37% (7 of 19) of participants stated positive feedback was not provided in a public setting.

Question six asked if constructive criticism was most often provided in a public setting compared to a private setting. Forty-two percent (8 of 19) of participants stated that constructive criticism was provided in a public setting, and 58% (11 of 19) of participants stated that constructive criticism was not provided in a public setting.

Results of questions relating to feedback experienced and relationship to systems thinking are shown below (see Table 5).

**Table 5**

*Feedback experienced and levels of systems thinking*

<b>Feedback</b>	<b>Count</b>	<b>None</b>	<b>Low</b>	<b>Developing</b>	<b>High</b>
I receive formal feedback					
Agree	5	0%	0%	20%	80%
Disagree	14	7%	21%	14%	57%
I receive informal feedback					
Agree	18	6%	17%	17%	61%
Disagree	1	0%	0%	0%	100%
When I receive positive feedback, it's more often in a public setting than a private setting					
Agree	12	8%	17%	25%	50%
Disagree	7	0%	14%	0%	86%
When I receive constructive criticism, it's more often in a public setting than a private setting					
Agree	8	0%	25%	25%	50%
Disagree	11	9%	9%	9%	73%

*Note.* The percentages shown on this table are from the “agree” or “disagree” row total.

### ***Onboarding Training Experienced***

Question seven asked participants to select which types of training they received upon hire (onboarding) from the following choices: specific expectations of employees in verbal forms (74%, 14 of 19), scheduled in-person training (68%, 13 of 19), informational materials such as

reference sheets or instructional handouts (68%, 13 of 19), specific expectations of employees in written form (53%, 10 of 19), an employee handbook (47%, 9 of 19), an organizational chart (47%, 9 of 19), online training videos (32%, 6 of 19), an onboarding checklist (32%, 6 of 19), or none of these (11%, 2 of 19) (see Table 6 and Table 7).

**Table 6**

*When I was first hired, I received the following training and information.*

<b>Training and information</b>	<b>Count</b>	<b>Percent selected</b>
Specific expectations of employees in verbal form	14	74%
Scheduled in-person training	13	68%
Informational materials such as reference sheets or instructional handouts	13	68%
Specific expectations of employees in written form	10	53%
Employee handbook	9	47%
Organizational Chart	9	47%
Online training videos	6	32%
Onboarding checklist	6	32%
None of these	2	11%

**Table 7***Training experienced upon hire and levels of systems thinking*

<b>Training and information</b>	<b>Count</b>	<b>None</b>	<b>Low</b>	<b>Developing</b>	<b>High</b>
Specific expectations of employees in verbal form					
Yes	14	7%	7%	21%	64%
No	5	0%	40%	0%	60%
Scheduled in-person training					
Yes	13	8%	0%	15%	77%
No	6	0%	50%	17%	33%
Informational materials such as reference sheets or instructional handouts					
Yes	13	8%	0%	15%	77%
No	6	0%	50%	17%	33%
Specific expectations of employees in written form					
Yes	10	10%	0%	0%	90%
No	9	0%	33%	33%	33%
Employee handbook					
Yes	9	11%	0%	11%	78%
No	10	0%	30%	20%	50%
Organizational Chart					
Yes	9	11%	0%	11%	78%
No	10	0%	30%	20%	50%
Online training videos					
Yes	6	0%	17%	17%	67%
No	13	8%	15%	15%	62%
Onboarding checklist					
Yes	6	0%	17%	17%	67%
No	13	8%	15%	15%	62%
None of these					
Yes	2	0%	100%	0%	0%
No	14	6%	6%	18%	71%

*Note.* The percentages shown on this table are from the “yes” or “no” row total.

### *Continuous Training Experienced*

Question eight asked participants to select which types of continual trainings were provided after initial training from the following choices: regular communication such as emails or posts on work-related matters (79%, 15 of 19), handouts with instructions for new or existing processes and procedures (53%, 10 of 19), regular team meetings to discuss work-related matters (21%, 4 of 19), in-person and job-specific workshops (16%, 3 of 19), videos or online modules with job-specific instructions (11%, 2 of 19), in-person personal development workshops (11%, 2 of 19), or access to professional organizations within the field (11%, 2 of 19) (see Table 8 and Table 9), videos or online modules with personal development content (5%, 1 of 19).

**Table 8**

*My employer provides the following as continual professional development.*

<b>Training and information</b>	<b>Count</b>	<b>Percent selected</b>
Regular communication such as emails or posts on work-related matters	15	79%
Handouts with instructions for new or existing processes and procedures	10	53%
Regular team meetings to discuss work-related matters	4	21%
In person and job-specific workshops	3	16%
Videos or online modules with job-specific instructions	2	11%
In person personal development workshops (this includes skills that can be used within or outside of your job, such as communication or time management skills.)	2	11%
Access to professional organizations within the field	2	11%
Videos or online modules with personal development content (this includes skills that can be used within or outside of your job, such as communication or time management skills.)	1	5%

**Table 9***Continuous training experienced and levels of system thinking*

<b>Training and information</b>	<b>Count</b>	<b>None</b>	<b>Low</b>	<b>Developing</b>	<b>High</b>
Regular communication such as emails or posts on work-related matters					
Yes	15	7%	13%	7%	73%
No	4	0%	25%	50%	25%
Handouts with instructions for new or existing processes and procedures					
Yes	10	10%	10%	20%	60%
No	9	0%	22%	11%	67%
Regular team meetings to discuss work-related matters					
Yes	4	0%	0%	25%	75%
No	15	7%	20%	13%	60%
In person and job-specific workshops					
Yes	3	0%	33%	0%	67%
No	15	6%	13%	19%	63%
Videos or online modules with job-specific instructions					
Yes	2	0%	0%	0%	100%
No	17	6%	18%	18%	59%
In person personal development workshops (this includes skills that can be used within or outside of your job, such as communication or time management skills.)					
Yes	2	50%	0%	0%	50%
No	17	0%	18%	18%	65%
Access to professional organizations within the field					
Yes	2	50%	50%	0%	0%
No	17	0%	12%	18%	71%
Videos or online modules with personal development content (this includes skills that can be used within or outside of your job, such as communication or time management skills.)					
Yes	1	0%	0%	0%	100%
No	18	6%	17%	17%	61%

*Note.* The percentages shown on this table are from the “yes” or “no” row total.

Question eight asked participants to select which areas are impacted by their work from the following choices: my office or department (68%, 13 of 19), the students within my university (68%, 13 of 19), my working team (58%, 11 of 19), my university as an institution (53%, 10 of 19), the community in which my university is located (42%, 8 of 19), or none of these (5%, 1 of 19) (see Table 10).

**Table 10**

*My work has had an impact on the following.*

Survey options	Count	Percent selected
My office or department	13	68%
The students within my university	13	68%
My working team	11	58%
My university as an institution	10	53%
The community in which my university is located	8	42%
None of these	1	5%

### **Interview**

The single interview participants' responses indicated that they do not often see the impact of their work outside their immediate department. The level of training provided was minimal and led by peers rather than supervisors. Feedback was all informal. Although this is not enough data to come to any conclusions, this does demonstrate a student employee with little training and feedback, and low systems thinking levels.

### **Summary**

Data collected was from a small sample of Generation Z student employees, and showed in-person training, clearly communicated expectations, resources for future reference, continuous communication, and formal feedback all closely relate to high levels of systems thinking. The following chapter discusses the conclusions that can be drawn from these findings.

## **Chapter 5: Discussion**

### **Introduction**

This final chapter highlights takeaways and conclusions drawn from the research exploring how training and feedback can help develop systems thinking skills in Generation Z student employees. The discussion about the literature review, study, and conclusions reached after reviewing the data is followed by suggestions of how leaders can use this information to improve the systems thinking skills in Generation Z student employees on their campuses, and a summary of the research.

### **Discussions and Conclusions**

Organizations want employees to understand the vision and purpose of the work being done, how to contribute to the system, how to work with others, and how to grow as a professional within the organization. These are all elements of systems thinking. It can be concluded that systems thinking, and the skills that come along with systems thinking such as working in teams, problem solving, and self-directed learning are valuable to employers.

The nature of a college campus, with multiple departments working collaboratively, is an ideal place to begin to develop systems thinking skills. Current curriculum and degree requirements utilize field experience as a professional setting in which students can learn, however the opportunity of on-campus employment as a complimentary educational experience is often overlooked and underutilized to develop systems thinking skills in Generation Z. The proximity to classroom learning, the preference Generation Z has toward experiential learning (Schroth, 2019), and a low-risk environment to move toward adult learning skills make on-campus employment an ideal place to learn systems thinking. The high number of Generation Z students who continue to higher education after high school, the existence of student

employment, and the limited preparation for the professional world Generation Z typically acquires before college graduation show that many of the structures and demands are already in place to provide this learning opportunity.

Generation Z specifically values experiential, problem-based (Maloni et al., 2019), and team-centered training in the workplace (Iorgulescu, 2016). The students of Generation Z also expect and value close connections and regular communication from their supervisors. Finally, Generation Z seeks stability in an employer and are ready to commit in the place that they feel competent and engaged (Iorgulescu, 2016; Titko et al., 2020). There is an element of self-motivated and self-directed learning that Generation Z needs to understand in order to effectively integrate into a new organization and professional role. This self-motivated and self-directed learning style closely relates to adult learning, which Generation Z college students have not yet had the opportunity to develop.

It was shown through the research that systems thinking levels generally increase as a student spends more time in their on-campus job. It would benefit on-campus employers to target new students and intentionally build upon training during their years as a student employee. It was clear in the research that lack of training is closely related to low levels of systems thinking, so it is important that employers provide appropriate onboarding and continual training opportunities for their student employees.

The most notable finding was that, for onboarding, in-person trainings are closely related to high levels of systems thinking. The literature review supports this finding through the learning preferences of Generation Z, and their eagerness to move away from virtual interactions for more in-person activities (Schroth, 2019; Rickes, 2016). Although team learning in the classroom is not valued by Generation Z, teamwork in a professional setting is valued

(Iorgulescu, 2016). If students have not been receptive to learning how to work with others in the classroom, employment during on-campus jobs is the next best opportunity to expose student employees to this type of working environment. The limited soft-skill development in Generation Z is another reason why in-person training is valuable for these students. It provides the experience of interacting with others in real time, working with multiple personalities and strengths, and relying on relationships and collaboration to accomplish a goal.

Student employees who received expectations of employees in either written or verbal form displayed high levels of systems thinking, and participants who had never received any expectations of employees displayed low levels of systems thinking. There was not much difference between the effectiveness of written and verbal communication, so either or both are good options for on-campus employers.

Regular communication about work-related items was also shown to be related to high levels of systems thinking, especially compared to those who did not receive regular communications. Considering the high expectations Generation Z has of connection to supervisors (Chicca & Shellengbarger, 2018), it's not surprising that regular communication creates more informed and prepared Generation Z employees. Regular team meetings resulted in more high-level systems thinkers and fewer low-level systems thinkers. Meetings are an option for regular communication.

Access to informational material that can be referenced repeatedly and is provided during onboarding is closely related to high levels of systems thinking. This could be instructions on processes or procedures, explanations of various types of events or office lingo, or an employee handbook that clearly collects expectations, processes and procedures, organizational charts, and resources all in one place. Only about half of the participants experienced employee handbooks

and organizational charts. An opportunity exists to provide handbooks and organizational charts for the future reference of student employees. Resources such as these encourage self-motivated learning, and problem-solving opportunities in real time when student employees know how to find and use them. A good understanding of how to use resources like an employee handbook or informational training handouts is a good foundation for adult learning skills that students will soon need as new professionals after college graduation.

This research showed that only a quarter of student employees experience formal feedback such as scheduled employee reviews or meetings with a supervisor. Those who did receive formal feedback had high levels of systems thinking, and on-campus employers would benefit from offering more structured forms of feedback for student employees. Generation Z wants to see the results of their work, and formal feedback can provide them with an understanding of the impact they are having through day-to-day job responsibilities.

Informal feedback is much more common in on-campus employment, and student employees who experienced informal feedback displayed a variety of systems thinking levels. Being that Generation Z values experiential learning (Maloni et al., 2019), needs an explanation when they are told “no” (Bradbury, 2019), and needs to learn how to problem-solve on the job, informal feedback is certainly not a harmful strategy. When the feedback is helpful to accomplish a task at hand and focuses on how to use the resources available to solve a problem, Generation Z student employees will benefit. If the feedback is constructive criticism, it is more socially acceptable to provide this in a private setting, and this research showed that constructive criticism shared in a private setting is related to higher levels of systems thinking.

Training and feedback strategies that seemed to have little effect on systems thinking levels were online training videos and checklists for onboarding, informational handouts sent for

continual training, and whether positive feedback was provided in a public or private setting.

To bring the focus back to the original research questions, the following conclusions can be reached:

RQ1: What types of on-campus workplace onboarding training strategies develop systems thinking skills in Generation Z college students?

In-person training, clearly stated expectations of employees in written and or verbal form, and reference materials such as an employee handbook are valuable onboarding strategies for Generation Z college student employees to develop systems thinking skills.

RQ2: What types of on-campus workplace continuous training strategies develop systems thinking skills in Generation Z college students?

Regular communications such as emails, posts, or meetings about work-related items were shown to be the most effective continuous training strategies for Generation Z student employees to develop systems thinking skills.

RQ3: What types of on-campus workplace feedback develop systems thinking skills in Generation Z college students?

Specifically focusing on formal feedback can increase systems thinking levels in student employees. Informal feedback as students work through problems or experience new challenges might also be helpful to develop systems thinking skills. Constructive criticism should be offered in a private setting to increase systems thinking skills in Generation Z.

### **Connection to Theoretical Framework**

Perry's Theory of Intellectual and Ethical Development suggest that throughout the years of an on-campus job, student employees will begin to better understand the complexities of the system in which they work and begin to develop their own opinions and priorities (Locklin,

2013). The research lined up with this theory when it showed that systems thinking levels increased through time in an on-campus job. Various types of training that focused on informal feedback in real-time, in-person interactions, and formal feedback that demonstrates the greater impact of their work were also helpful to increase systems thinking. This directly relates to Kolb's Experiential Learning Model as a method to help student employees move through different levels of intellectual and ethical development during their time in on-campus jobs. As student employees move through intellectual and ethical development, they will begin to develop their opinions of the system through an objective understanding of the reason behind processes and the connection different departments and jobs have to each other and the greater goal (Locklin, 2013). Student employees will be able to identify the areas of opportunity for personal development, and once they understand their own priorities will take ownership over their own growth.

Using Kolb's Experiential Learning Model to help student employees move through the stages of Perry's Theory of Intellectual and Ethical Development, on-campus employment can increase systems thinking levels in student employees and move them closer to the Adult Learning Theory that will be helpful in the workplace after college graduation. Students will better understand how to access and digest the information that is timely and applicable to learn the job at hand, solve the problems that do not yet exist, and take ownership over their own personal and professional growth.

### **Leadership Implications**

There is great potential to leverage on-campus employment as an opportunity for Generation Z to learn systems thinking skills. Creating a consistent and intentional student employee experience across campus can benefit students and institutions alike. To neglect to

offer onboarding, continuous training, and formal feedback to student employees is to lose an opportunity to better prepare our students for life after graduation.

Leadership at higher education institutions should encourage their department heads or student employee supervisors to prioritize student employee training and feedback systems and provide the resources to support departments in this effort. Professional staff need to understand the current generation of students, their preferred learning style and their values. For example, it might come as a surprise to student employee supervisors that Generation Z does not necessarily prefer to communicate or learn virtually, and that they crave in-person interactions and activities. Leadership can prepare professional staff to appropriately work with this next generation of professionals.

Other ways campus leadership could support this effort to improve student employee programs are to offer campus-wide in-person trainings for all new student employees, a template for a student employee handbook that each office can tailor to their own processes, procedures and expectations, regularly updated organizational charts that show how departments and offices relate to one another, a common process for formal student employee evaluations, and funding to pay students and professional staff for time spent on developing and implementing training and providing feedback.

### **Recommendations for Future Research**

The research surrounding systems thinking development of Generation Z student employees can be expanded. More knowledge about how systems thinking skills are developed, and the observation of Generation Z as they begin to enter the workforce would complement these recommendations for future research questions. Based on the conclusions, the following research questions could further research on this subject. How can formal feedback in on-campus

jobs be used to advance systems thinking in Generation Z? What models of on-campus student employment have developed college graduates with systems thinking skills?

### **Summary**

There is evidence to support that strategic onboarding that includes in-person training, clear expectations of employees, and resources for future reference can increase levels of systems thinking in Generation Z student employees. Continuous communication with student employees about work-related matters is the best way to continually train and develop Generation Z student employees in terms of systems thinking skills. Finally, implementing formal feedback processes and continuing informal feedback while student employees learn are both ways to increase systems thinking levels in Generation Z student employees. On-campus employment is a tool not fully utilized as an educational experience for to prepare students for life after graduation, and higher education leaders should spend more time and resources developing and implementing quality and consistent student employment programs on their campuses.

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## Appendix A

### Survey Questions

1. Birth Year

1995, 1996, 1997, 1998, 1999, 2000, 2001, 2001, 2003 (I am already 18), 2003 (I am not yet 18), Other.

Note: If 2003 (I am not yet 18) or Other are chosen, the survey ends.

2. Number of years in main on-campus job

Zero to 4 years

3. I receive formal feedback. (For example: scheduled employee evaluations, or one-on-one meetings with your supervisor or mentor.)

Agree or disagree

4. I receive informal feedback. (For example: real-time discussions and corrections while I work.)

Agree or disagree

5. When I receive positive feedback, it's more often in a public setting than a private setting.

Agree or disagree

6. When I receive constructive criticism, it's more often in a public setting than a private setting.

Agree or disagree

7. When I was first hired, I received the following training and information. For the sake of this study, consider video conferencing with real time interaction to be in-person. Select all that apply:

Scheduled in-person training, online training videos, onboarding checklist, employee handbook, informational materials such as reference sheets or instructional handouts, specific expectations of employees in written form, specific expectations of employees in verbal form, organizational chart, none of these

8. My employer provides the following as continual professional development (separate from the training and instruction received when first hired). For the sake of this study, consider video conferencing with real time interaction to be in-person. Select all that apply:

In-person and job-specific workshops, videos or online modules with job-specific instructions, in-person personal development workshops (this includes skills that can be used within or outside of your job, such as communication or time management skills), Videos or online modules with personal development content (this includes skills that can be used within or outside of your job, such as communication or time management skills), handouts with instructions for new or existing processes and procedures, regular team meetings to discuss work-related matters, regular communications such as emails or posts on work-related matters, access to professional organizations within the field

9. My work has an impact on the following. Select all that apply.

My working team, my office or department, my university as an institution, the students within my university, the community in which my university is located, none of these

10. The second portion of this research is a 10-minute interview (Zoom or in person) to share your experience with training and feedback as a student employee. If you're willing, please enter your email below, and watch for a follow-up email to schedule an interview time. If you are not willing to participate in this brief interview, please enter "pass".

## **Appendix B**

### **Interview Questions**

1. Tell me a story about a time when you gained an understanding of how your job impacts others who work in your office or work elsewhere on campus.
  - a. Why did it make sense at that point?
  - b. Did it change how you did your job afterward?

Prompts: structured training or not, was this the first time they'd been coached on this concept, and have they been able to apply that learning since then.

2. When have you received feedback that empowered you to be more confident in your skills and competence at work?

Prompts: Was it formal feedback or presented in passing. Ask how often they experience this type of feeling at work.

3. Tell me about a time when you felt or saw the impact of your work after a significant amount of time had passed. (6+ months after the work was done.)
4. Are there any other stories you want to share about on-the job experiences that made you feel like you'd grown?

## **Appendix C**

### **Survey Consent**

This study is designed to provide a foundational understanding of how on-campus employers can leverage training and feedback to provide meaningful work experiences and a development of conceptual leadership skills for Generation Z. The researcher wants to look at formal and informal feedback and training within the workplace, and student employees' response in terms of professional development. This research is being completed as a research project for an Organizational Leadership graduate student's capstone thesis at Winona State University.

If you decide to participate, you will be asked to complete a 5-minute/17-question survey regarding workplace training and feedback, along with your conceptual leadership development. You will then be asked to join a 20- to 30-minute one-on-one interview with the researcher to talk about your experience as a student employee. Participation will require approximately 35 minutes in total.

All data collected for this study is confidential and anonymous. The interview participants will be coded as participant 1, participant 2, etc.. The interviews will be held on Zoom video conferencing and recorded for the researcher's reference.

Emails submitted in the survey will be saved in a separate file and will not be connected to the survey responses. The only purpose of asking for the email is to schedule an interview with the student.

Participation in this study is voluntary and you may stop at any time. You may decide not to participate or to discontinue participation at any time without penalty or loss of benefits. A decision not to participate or withdraw will not affect your current or future relationship with the researcher, or your on-campus employer or peers.

There are no benefits for participating and no consequences for choosing not to participate.

There are no risks associated with this study.

If you have any questions about the study or your participation, contact Kim

Fisher [kim.fisher@go.winona.edu](mailto:kim.fisher@go.winona.edu), or Theresa Waterbury [twaterbury@winona.edu](mailto:twaterbury@winona.edu).

If you have questions about your rights as a participant, contact Human Protections

Administrator Brett Ayers at 507-457-5519 or [bayers@winona.edu](mailto:bayers@winona.edu). This project has been reviewed by the Winona State University Institutional Review Board for the protection of human subjects.

If you agree to participate, responding to the survey questions constitutes your consent. If you do not wish to consent, you may stop participating at any time.