

HOW CAN EDUCATION SUPPORT PREPARING STUDENTS FOR A WORKFORCE FOCUSED ON INNOVATION: A QUALITATIVE PHENOMENOLOGICAL STUDY

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Study Overview

- An overview of the study's purpose and significance
- Very brief review of the literature
- The methods & major components
- Data analysis
- Results
- Discussion of the findings
- Limitations and delimitations
- Recommendations for future research

Introduction

- From 1990's-Present: End of world polarization, start of world global economy.
- Global economic competition for innovation,. Need for innovation related skills.
- This study's goal: Gain an educator's perspective regarding developing students for an innovation-focused 21st Century workforce?
- ***Theoretical Framework / Conceptual Framework***
 - *Kolb Experiential Learning Theory* Kolb et al, 2018.
 - *Blooms Taxonomy* Bloom, 1956

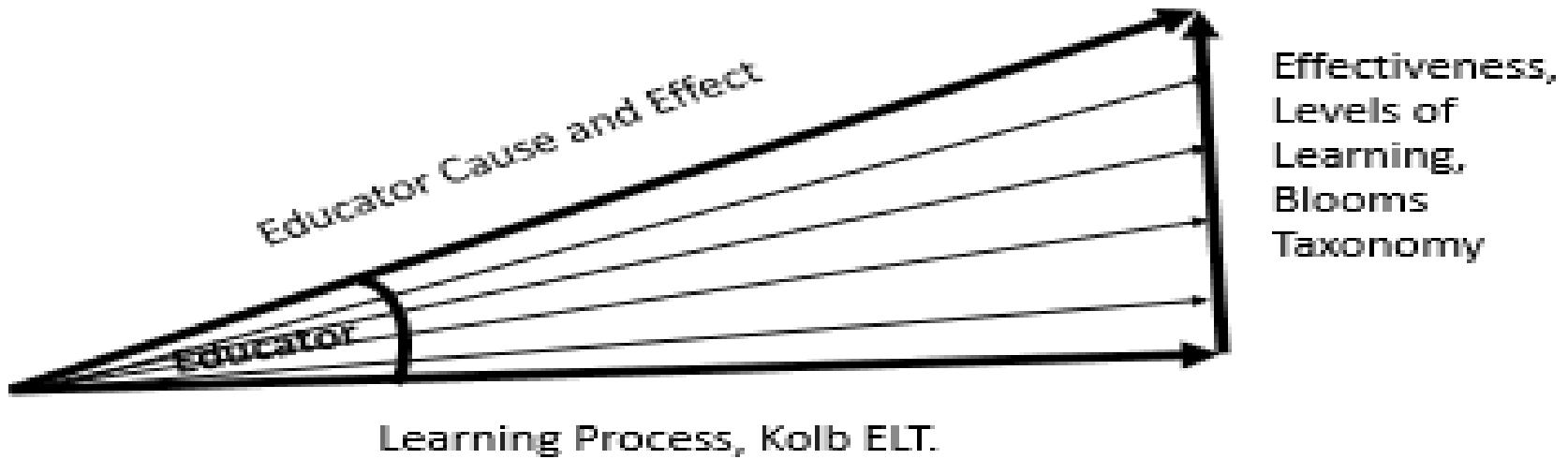
Rationale for Study

- The purpose of this hermeneutic phenomenology: Educator perspectives regarding how faculty members and administrators describe their experiences for preparing their students for an innovation-focused 21st Century workforce.
- Practical significance: From the educator's critical perspective, this study provided valuable evidence of feedback regarding developing students for the innovation focused global economy.
- Empirical significance: There was a high demand for production, innovation, and organizational success for individuals, especially new graduates.

Educator, the Cause and Effect Between the Learning Process and Learning Levels

Figure 1

Educator Cause and Effect of the Learning Process and Effectiveness



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Literature Review

Skills and Innovation:

- Innovation and innovation-related skills Teixeira & Shin, 2020
- Increasing complexity of systems Collier et al., 2020

Skills and the Global Economy:

- Workforce skills translate into organizational success Haour, 2016
- Stakeholders value education to develop workforce Shakarishvili, 2019

Skills Need in the Workforce:

- Developing students Fosnot, 2015
- Give students a transformational experience Omeodu, 2020

Skills for the 21st Century Workforce :

- The right skills for innovation Jerman, 2021
- Not what employees know , but what they can do Bowen & Johnson, 2020

Literature Review

Development of Workforce Skills:

- Importance of student applied skills Keith, 2018
- Positive learning environment promote student motivation and achievement Premo et al., 2018

Applied Student Development:

- Positive outcomes for at-risk students McFarland, et al., 2016
- Student interest and motivation Chell, 2018

Criticality of Thought:

- Applied learning strategies Awoyemi, 2018
- Developing critical thinking skills Dhir, 2019

Skills and the Workforce:

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Positive impacts on student motivation Torff, 2018



Research Questions

- **Central Question:** How do faculty members and administrators describe their experiences in preparing their students for an innovation-focused 21st Century workforce?
- **Sub-question One:** What do faculty members and administrators understand as skills expectations of the workplace for graduate students?
- **Sub-question Two:** How are skills expectations of the workplace developed in college courses?
- **Sub-question Three:** How do faculty members develop their understanding of the needs of the field for student's skill development?

Qualitative Data Analysis

- **A holistic analysis approach** Creswell & Poth, 2018; Yin, 2018
- **Data triangulation** Yin & Campbell, 2018
- **Researcher bias:** Interest with applied teaching-learning methods.
- **Research Design:** Hermeneutic Phenomenology Study Moussakas,, 1994.
- **Research Data Collection:** Interviews, Focus Groups and Journal Prompts Yin, 2018.
- **Sample Size:** Ten University Business Professor Participants Creswell & Poth, 2018.
- **Study Time:** Data collection 10 weeks, data analysis 6 weeks.

Hermeneutic Qualitative Triangulated Findings (Interviews, Focus Groups and Journal Prompts): Key Themes for the Study

Figure 2

Study Key Findings

Innovation is Important

- Innovation is Important for society.
- Innovation is Important for Systems of Education.

Innovation and Education

- Educator/student empathy and motivation.
- Educator innovation focus.
- Educator innovation experience.

Develop and Practice Student Skills

- Develop foundational skills.
- Develop general innovation skills.
- Practice student skills while in college.

Develop Industry Education Relationship

- Develop education industry communication.
- Develop education industry partnerships.

Outlier Data and Findings

- Potential for skills development to close or prevent gaps.
- Need for education-industry partnerships.



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Innovation is Important

- **Important for Industry.**
- **Important for Society.**
- **Important for Education.**
- **Some Participant Perspectives:**

“Not everyone was going to participate in innovation at a high level actively. Still, everyone has been affected by innovation at some level. Still, educators have been affected by innovation and were proponents of innovation to help develop our students”. *Professor Jenny, 2021*

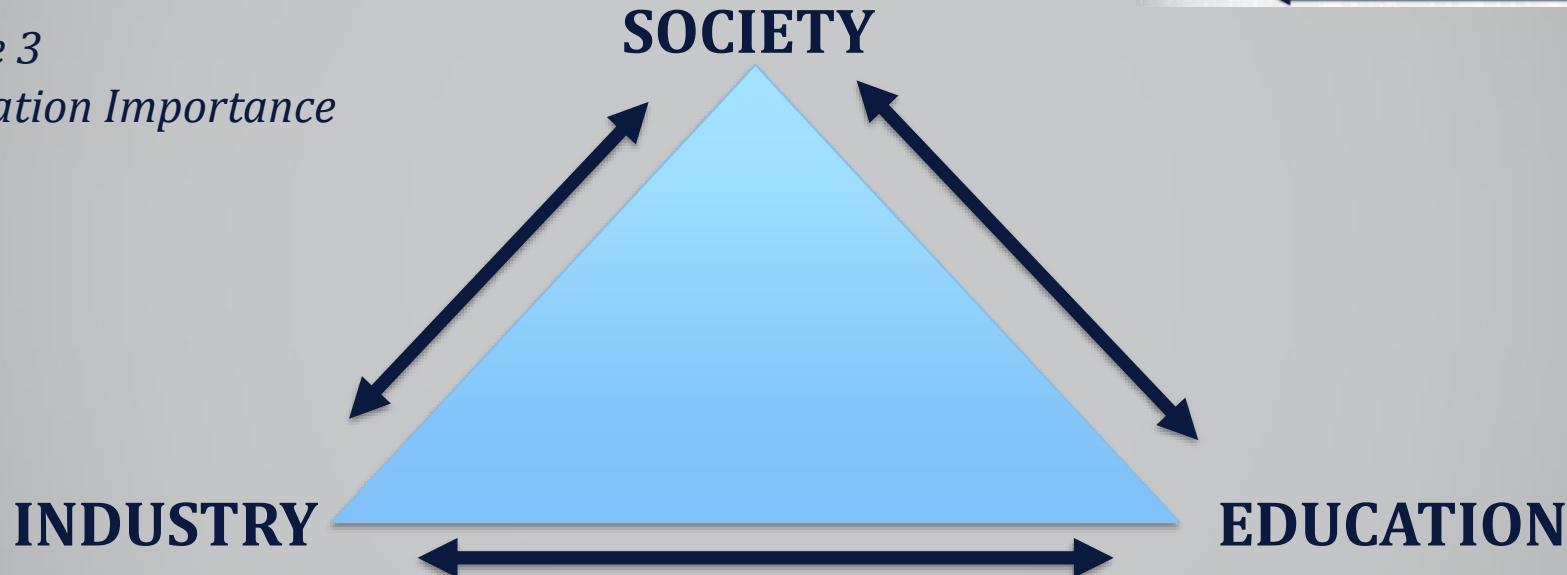
“It was not a buzzword, what is very true in the industry if you are not innovative, there was a good chance you will not be around.” *Professor Betty, 2021*

“It was critical you have to stay up not only with current industry trends but looking at a more global picture as well.” *Professor Ted, 2021*

Innovation is Important Cont.

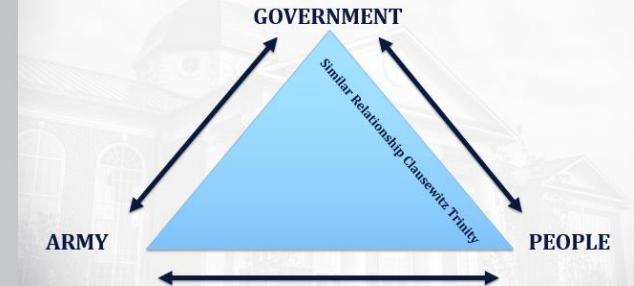
- Important for Industry, Society and Education.

Figure 3
Innovation Importance



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Innovation and Education

- **Educator-student empathy and motivation.**
- **Educator innovation focus.**
- **Educator innovation experience.**
- **Some Participant Perspectives:**

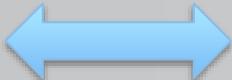
“This was also why the world looks to United States education. The United States educational system was looked at as the best in the world, and that was why people come here to get an education, and part of that was because they want to learn to innovate.” *Professor Tony, 2021*

“Vital skills, such as reading, writing, and mathematics, and things like typing. We should not sacrifice teaching the basics to teach industry-focused innovation skills because the result is skill gaps.” *Professor Wayne, 2021*

Innovation and Education Cont.

Figure 4
Innovation Importance

The
Student



The Educator (Lens)



-What is
important for
industry?

-What are the
best skills
needed for
industry?

-Important
experiences from
industry an
innovation?

-Leadership by
example.



Develop and Practice Student Skills

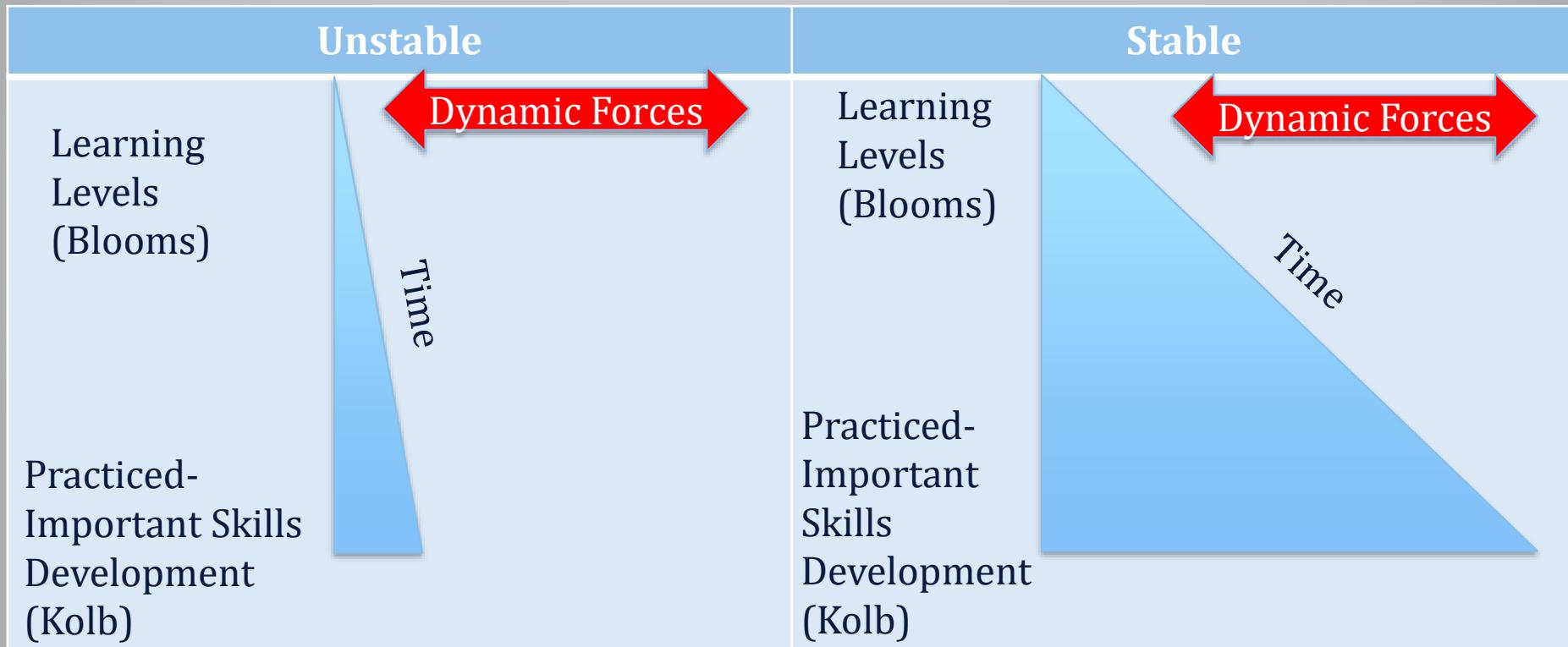
- Develop foundational skills (communication, teamwork, leadership, computer skills, mathematics, data analysis, project planning etc.).
- Practice student skills in college-university environment.
- **Some Participant Perspectives:**

“Like in a pool, be willing to get in the shallow end and work with students before moving on to the deep end.” *Professor Jenny, 2021*

“I think NASA said, ‘We can train anybody, with the hard skills, but we cannot train them on soft skills.’” *Professor Jenny, 2021*

Develop and Practice Student Skills Cont.

Figure 5
Develop Student Skills



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Develop Industry Education Relationship

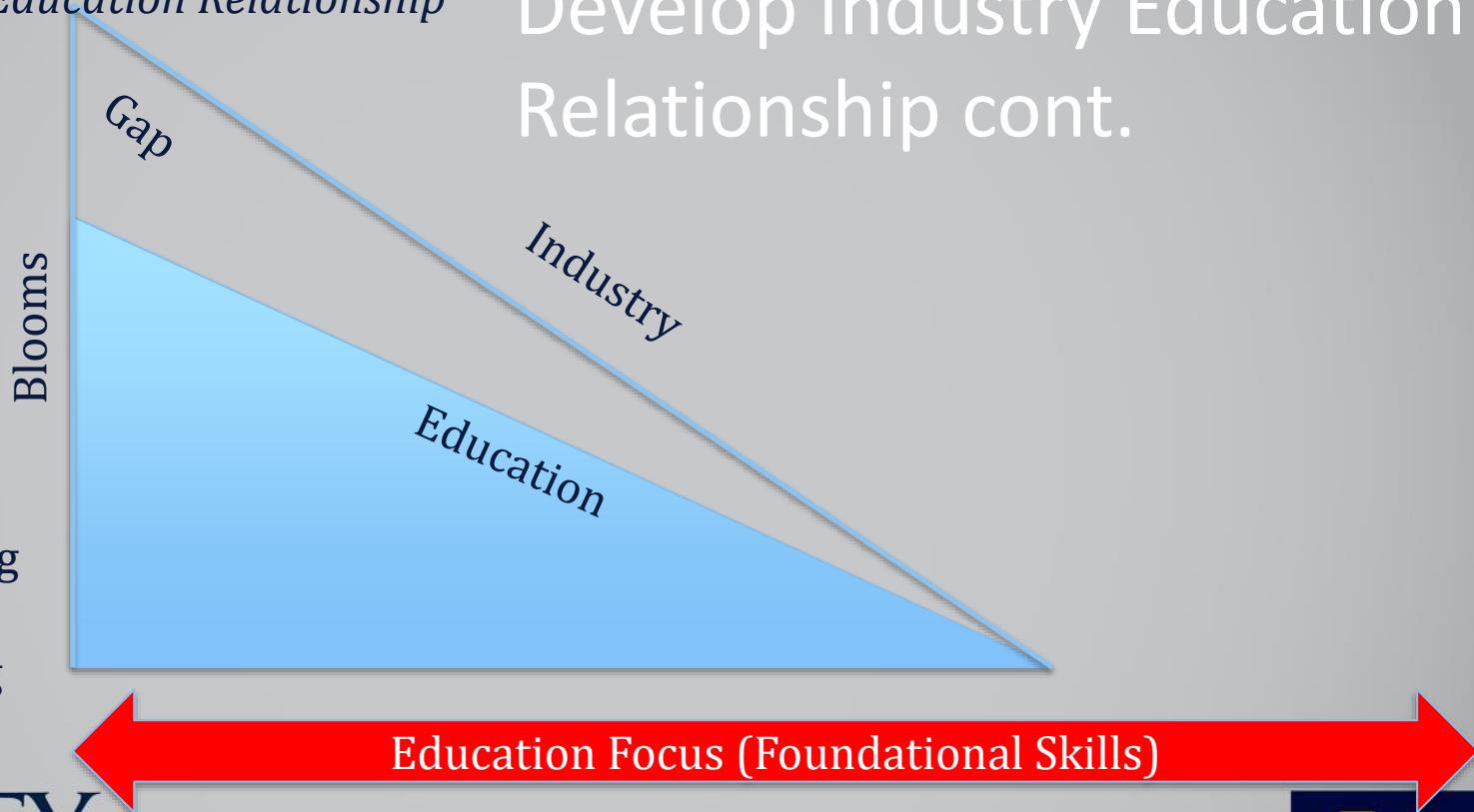
- Relationships such as internships programs.
- Industry Advisory Councils.
- **Some Participant Perspectives:**

“The most effective teaching methods were engaging since they allow them to have real-life experiences and connect the content with what was happening in the industry. The students learn in a safe environment from those experiences and have no exposure to potential harm. To the extent that our universities can make partnerships with influential companies that partnership help everyone. It was a win-win for the universities, industry, and students”. *Nick, 2021*

Figure 6

Develop Industry Education Relationship

- Create
- Evaluate
- Analyze
- Applying
- Understanding
- Remembering



Outlier Findings

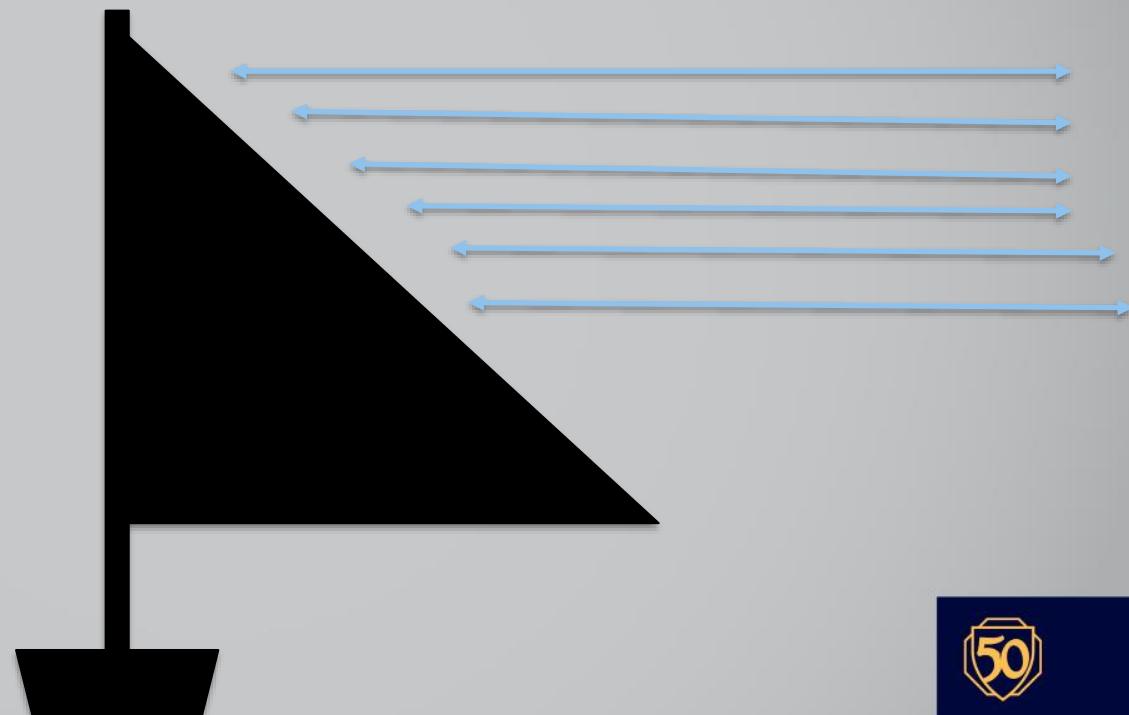
- Potential for Skill Development Focus to close gaps (education focus on foundational skills and industry focus on specialized skills)
- Need for education-industry partnerships.
- **Some Participant Perspectives:**
- “Education focus on foundational skills for all the students.” *Professor Wayne, 2021*
- “Industry needs are very focus and specialized skills.” *Professor Tony, 2021*

Outlier Findings Cont.

Figure 7

Specific vs Foundational Skills

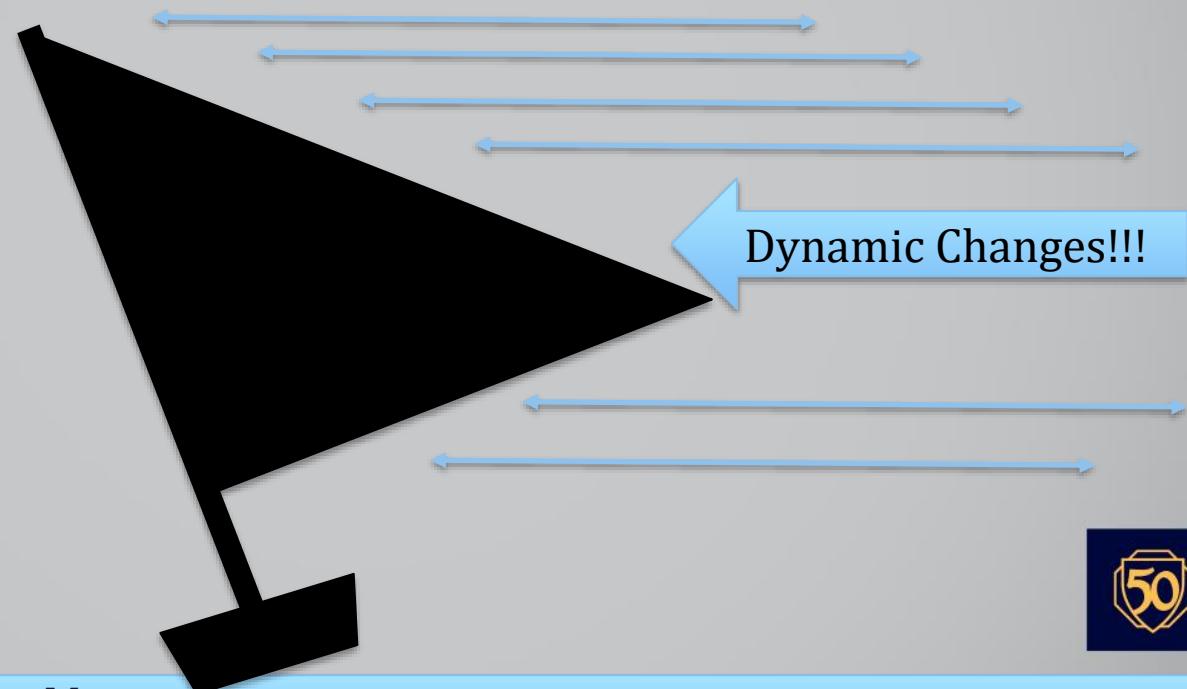
High level skills are great, but just a focus on specific high level skills without a solid foundation of education, can cause instability!!!



Outlier Findings Cont.

*Figure 8
Importance of Foundational Skills*

Sacrificing foundational skills for a few very specialized skills might temporarily create benefits, until dynamic changes make the very specialized skills obsolete, than instability!!!



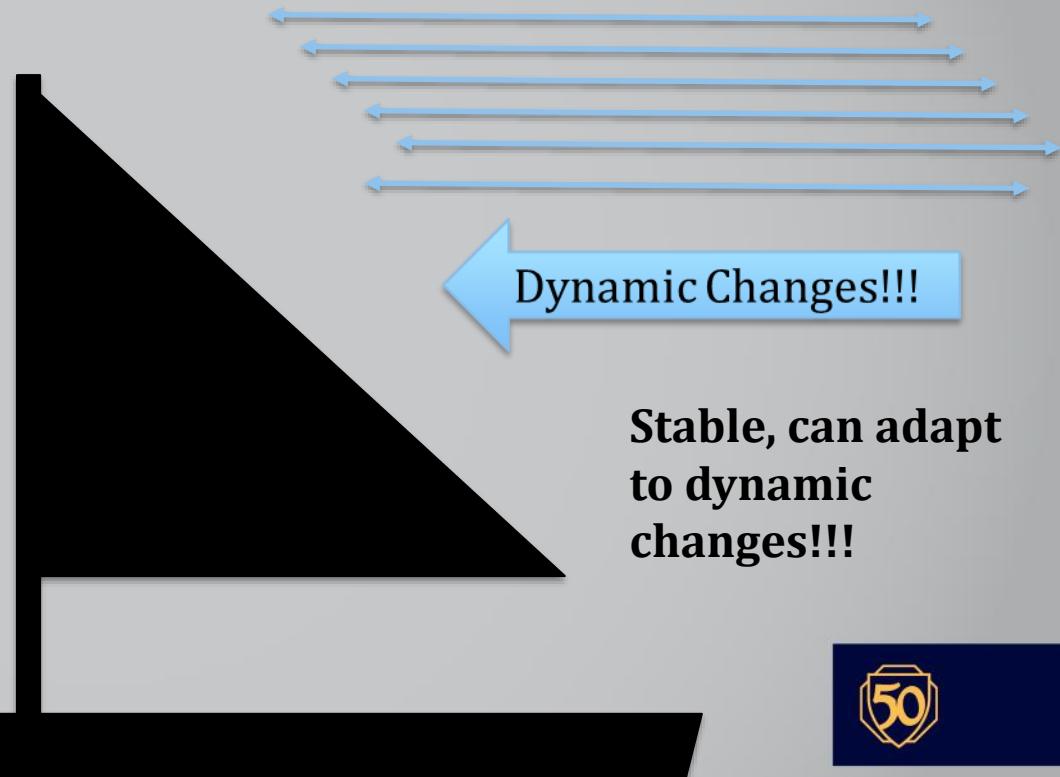
Outlier Findings Cont.

Figure 9

Importance of Foundational Stability

A solid educational foundation can develop stability for the student/employee, as they will be adaptable to **dynamic and ever changing high level skills!!!**

This is the value of a good foundational education!!!

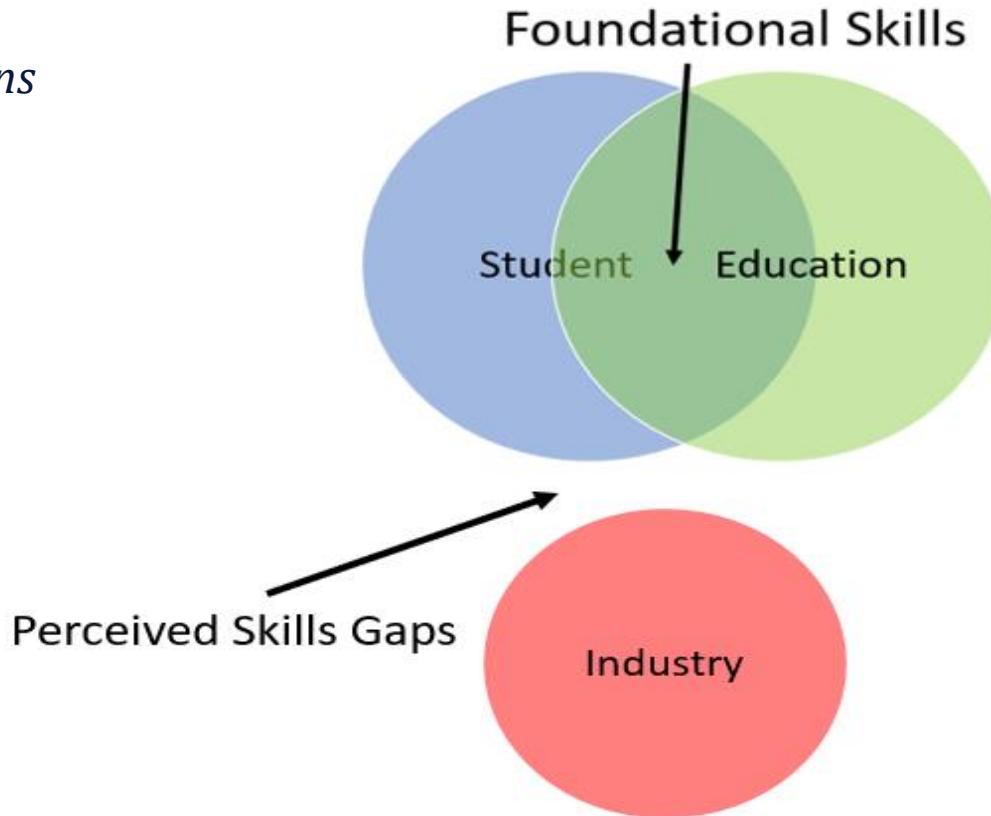


Recommendations

- Educators should make foundation skill the priority.
- Educators should have students practice the foundation skills, such as: teamwork, leadership, computers, data analysis and project planning, in a realistic scenario based environment.
- Educators should look for ways to partner with industry to develop specific students skill and experiences needed by industry; however, do not sacrifice the foundational skills for the very specific industry skills.
- For future research, conduct this same study with different academic disciplines (science, engineering, biology, and medical).

Recommendations

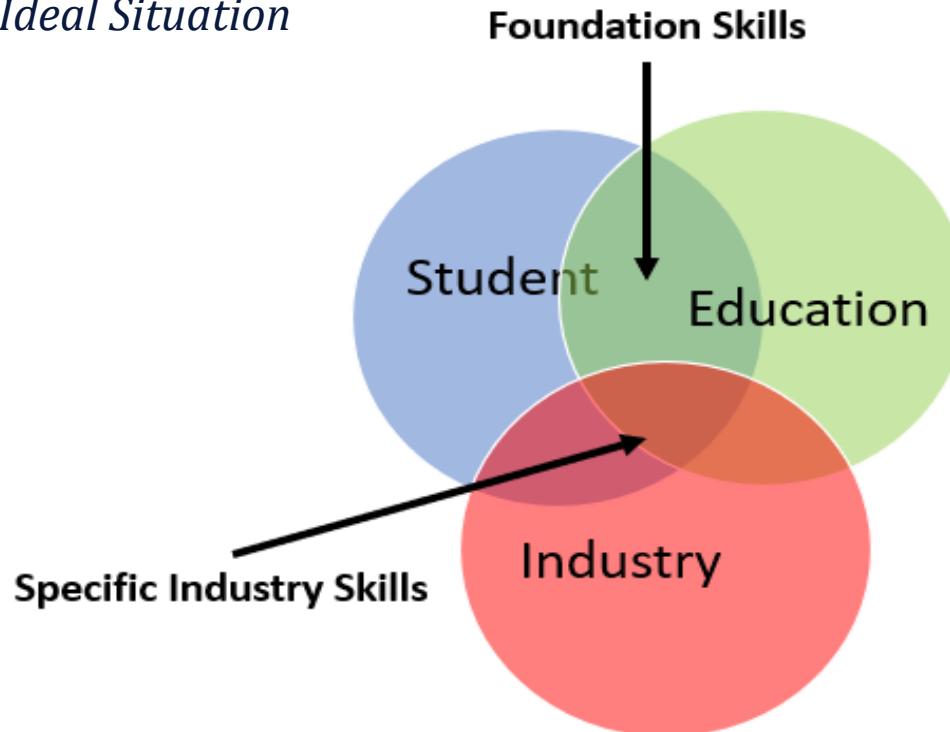
Figure 10
Recommendations



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Recommendations

*Figure 11
Recommendations Ideal Situation*



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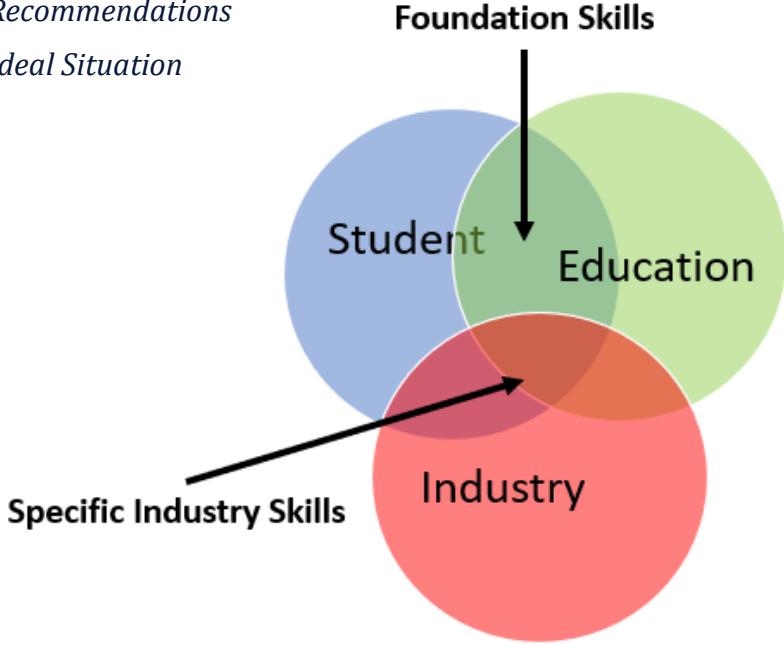
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Questions

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*Figure 11
Recommendations
Ideal Situation*



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