

# **Transfer of Learning from the Classroom to the Cooperative Education Workplace in a Baccalaureate Program in an Ontario College of Applied Arts and Technology**

Marguerite Donohue, Ph.D.  
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# Agenda

- ▶ Purpose
- ▶ Literature Review
- ▶ Conceptual Framework
- ▶ Research Design and Methodology
- ▶ Findings, Conclusions, and Recommendations
- ▶ Future Research

# Purpose of the Research

- ▶ To examine the
  - Transfer of learning from the classroom to the cooperative education workplace
  - Relationship between students' learning styles and this transfer
  
- ▶ Case:
  - 2<sup>nd</sup> year class in a bachelor's degree in an applied area of study in an Ontario College of Applied Arts and Technology: Bachelor of Applied Business
  - 6 of 21 eligible students participated (28.6%)

# Research Questions

- ▶ What is the extent of transfer of learning from the classroom to the cooperative education workplace in the Bachelor of Applied Business program?
- ▶ What are the differences in the types of learning outcomes that students with differing learning styles transfer from the classroom to the cooperative education workplace?
- ▶ What are the enablers and barriers to transfer of learning identified by the students? Are there differences in enablers and/or barriers depending on the student's learning style?
- ▶ What planned learning is in place in the program's curriculum to promote transfer of learning from the classroom to the cooperative education workplace?

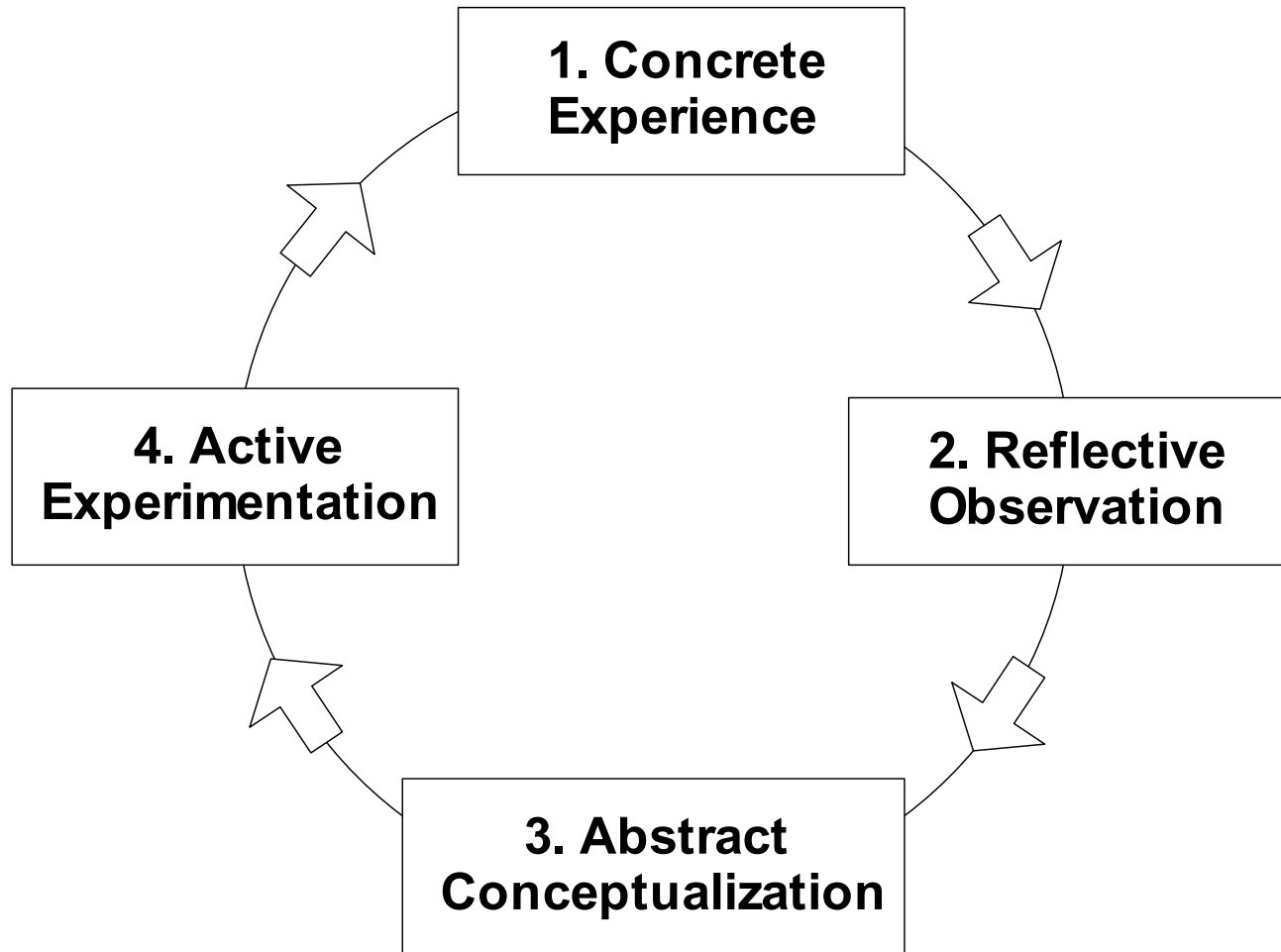
# Literature Review

- ▶ Cooperative Education
  - Historical Perspectives
  - Types of Programs
  - Benefits
- ▶ Research Related to Cooperative Education
  - Skill Development
  - Applying Knowledge in Practice
  - Academic Performance
  - Learning in the Co-op Workplace

# Conceptual Framework

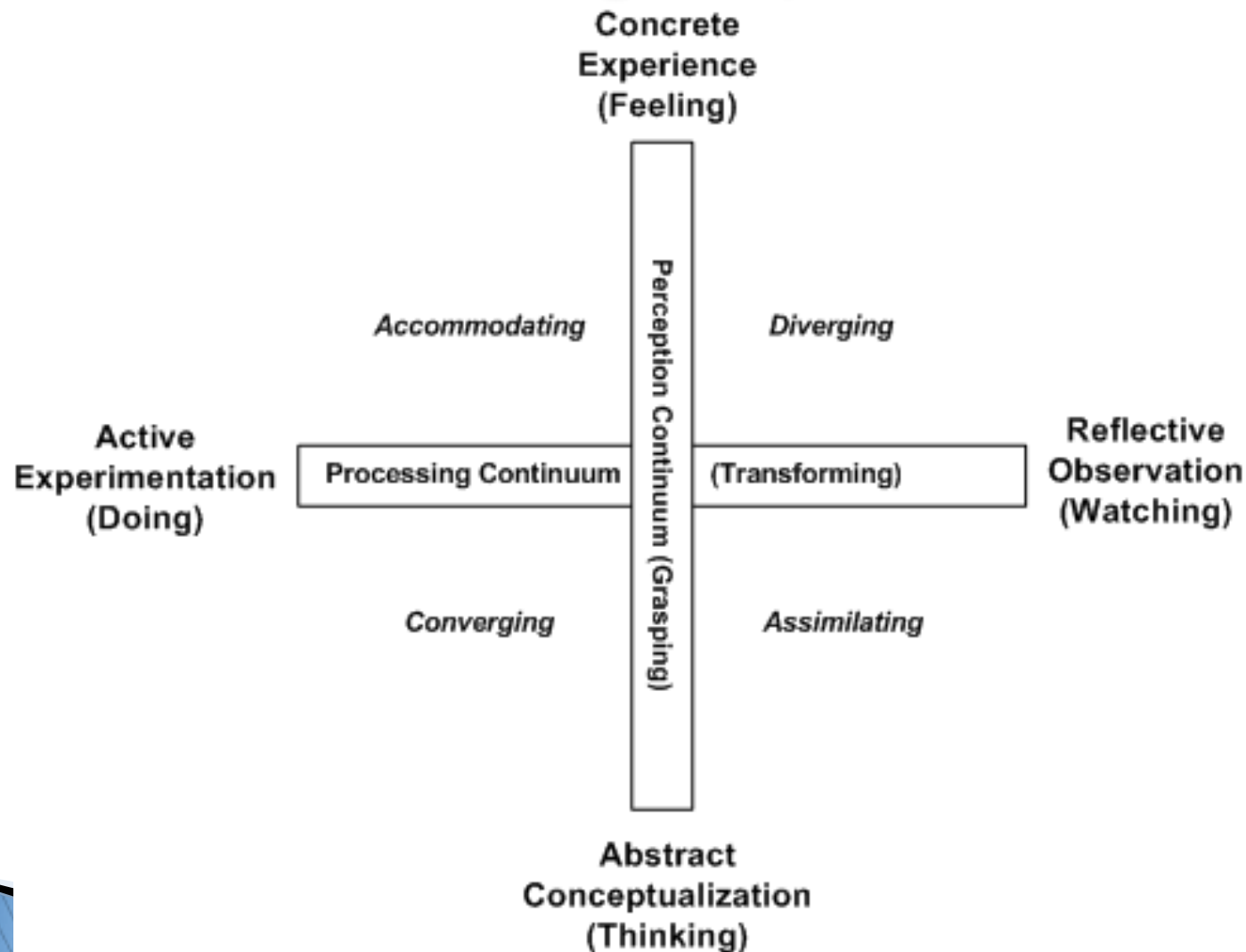
- ▶ Experiential Learning Theory and Cooperative Education
- ▶ Experiential Learning Theory
  - Dewey
  - Kolb
    - Learning Cycle
    - Learning Styles
    - Learning Styles Inventory

# Kolb's Learning Cycle



Adapted from D.A. Kolb, 1984

# Kolb's Learning Styles



Adapted from Chapman, 2006 and Raschick, et al., 1998 8

# Research Design and Methodology

- ▶ Case study
- ▶ Qualitative and quantitative research tools
- ▶ Purposive, convenience sampling

# Research Instruments

Instrument	Research Question Addressed
Course Learning Outcomes Questionnaire	1, 2
Kolb Learning Style Inventory	1, 2, 3
Cooperative Education Work Term Documentation	1, 2, 3
Course Outlines	4
Interviews	1, 2, 3, 4

# Possible Limitations

- ▶ Possibility of researcher bias
- ▶ Timing of research
- ▶ Number of participants
- ▶ Potential for participants to be less than candid
- ▶ Focus on transfer of learning from the classroom to the co-op workplace but not from the co-op workplace to the classroom

# Ethical Considerations

- ▶ Informed consent
- ▶ Voluntary participation
- ▶ Anonymity
- ▶ Impact of participation

# **FINDINGS, CONCLUSIONS, and RECOMMENDATIONS**

# Participants' Learning Styles

## Participants' Learning Styles

	Learning Style			
	Diverging	Assimilating	Converging	Accommodating
Number of participants	0	2	0	4

- Assimilating learning style: tend to prefer a concise, logical approach; are more concerned with abstract ideas and concepts.
  - Did not favour Concept CLOs
- Accommodating learning style: tend to use a more practical, hands-on approach; they like to do things.
  - Did not favour Skill CLOs

# Conclusion

- The co-op work term experience itself, including the workplace environment and culture, is more important than the student's learning style in explaining the learning from the classroom that a student is able to transfer to the co-op workplace.

# Recommendation

- Provide learning experiences that approach situations in a variety of ways during the academic courses in a co-op program such that students have the opportunity to build their capabilities in each of the four learning modes: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

# CLOs Reported as Used

CLOs reported as used in co-op on questionnaire (p. 107)

	Total CLOs Used*	Course Learning Outcome Types	
		Application of Concept	Application of Skill
<b>Total CLOs</b>	<b>134 (100%)</b>	<b>90 (67.2%)</b>	<b>44 (32.8%)</b>
<b>CLO “Used at Least Once” or “Used Regularly” by all participants</b>	<b>11 (8.2%)</b>	<b>2 (1.5%)</b>	<b>9 (6.7%)</b>
<b>CLO use reported by majority (at least 4 of 6) of participants</b>	<b>26 (19.4%)</b>	<b>19 (14.2%)</b>	<b>7 (5.2%)</b>
<b>CLO use reported by at least one participant</b>	<b>62 (46.3%)</b>	<b>44 (33.8%)</b>	<b>18 (13.4%)</b>
<b>Total CLOs reported used</b>	<b>99 (73.9%)</b>	<b>65 (48.5%)</b>	<b>34 (25.4%)</b>
<b>“No Opportunity” to use CLO reported by all participants</b>	<b>35 (26.1%)</b>	<b>25 (18.7%)</b>	<b>10 (7.5%)</b>

# Conclusion

- Foundation skills learned in the classroom, such as communication and technical skills, and in this case general business concepts, are used in all of the cooperative education workplace experiences in this study.

# Recommendation

- Reinforce the importance of communication and technical skills for success in the cooperative education workplace experience with students.

# CLOs Used From Each

CLOs reported as used in co-op by semester (p. 137)

	Total CLOs in Program	Semester				
		01	02	03	04	05
<b>Total number of CLOs in the semester</b>	<b>134</b>	<b>26</b>	<b>19</b>	<b>37</b>	<b>28</b>	<b>24</b>
<b>Total number of CLOs reported used</b>	<b>99</b>	<b>26</b>	<b>18</b>	<b>27</b>	<b>21</b>	<b>7</b>
<b>Total percent CLOs reported used</b>	<b>73.9%</b>	<b>100%</b>	<b>94.7%</b>	<b>72.9%</b>	<b>75%</b>	<b>29.2%</b>

# Conclusion

- Co-op experience may not challenge students to the level they may be capable of with respect to what they have learned in class.

# Recommendation

- Select cooperative education workplace experiences for students carefully to ensure alignment between the students' knowledge and abilities and the opportunities available to transfer the knowledge and skills learned in the classroom to the co-op workplace experience.

# Planned and Unplanned Learning

- ▶ 31 CLOs were identified in the work term learning plan
- ▶ Evidence of all of these CLOs was found
- ▶ Evidence of an additional 68 CLOs was also found

# Enablers to Transfer of Learning

1. Developing a plan to use the knowledge and skills learned in the classroom in the co-op workplace.
2. Having the opportunity to use the knowledge and skills learned in the classroom in the co-op workplace.
3. Working in an environment that is supportive and provides breadth and depth of experience for co-op students.
4. Experiencing a positive change in self-perception.

# Conclusion

- A co-op work term learning plan, opportunity to use previous learning, and a supportive co-op environment are important for students to be able to transfer their learning from the classroom to the cooperative education workplace experience.

# Recommendation

- Align the guidelines for the work term learning plan with the curriculum for the program and guide students to use the CLOs from the academic courses studied prior to the particular co-op work term experience as a tool in developing co-op work term learning plans with the goal of greater use and reinforcement of higher level classroom learning.

# Recommendations

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- Add a planning and assessment tool to the cooperative education workplace experience that allows the student to both plan for and identify the CLOs transferred to the co-op work term.

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- Add a planning and assessment tool to the cooperative education workplace experience that allows the student to both plan for and identify the CLOs transferred to the co-op work term.
- Provide formal orientation and training to cooperative education employer supervisors to help them to understand their role, the program curriculum, and the level of the student more clearly.

# Barriers to Transfer of

1. Working in a co-op position that is specialized.
2. Dealing with organizational factors.

# Conclusion

- Perceived barriers to transfer of learning also provide the opportunity for learning experiences.

# CLOs and EKS Linked to Transfer

CLOs and embedded knowledge and skills (EKS) linked to transfer of learning in co-op courses (p. 163)

<b>Course Title</b>	<b>Course Learning Outcomes</b>		<b>Embedded Knowledge and Skills</b>	
	<b>Total</b>	<b>Linked to Transfer</b>	<b>Total</b>	<b>Linked to Transfer</b>
<b>Co-op Work Term I</b>	<b>2</b>	<b>2</b>	<b>10</b>	<b>6</b>
<b>Co-op Work Term II</b>	<b>2</b>	<b>2</b>	<b>12</b>	<b>9</b>

CLOs in Courses in Semesters 01-05: The only classroom based course with CLOs or embedded knowledge and skills linked to co-op workplace experience was the Co-op Preparation course.

# Conclusion

- The program curriculum design plays a role in enabling transfer of learning.

# Recommendation

- Design the academic course curriculum to link classroom learning with the cooperative education workplace experience to enable the students to transfer this learning more effectively.

# Future Research

- ▶ Include students from all levels of one program
- ▶ Study these questions in:
  - University co-op degree programs
  - Other baccalaureate degrees in applied areas of study
  - College diploma co-op programs
- ▶ Compare mandatory and non-mandatory co-op programs
- ▶ Examine others' perspectives
  - Employers
  - College faculty and staff members

# Concluding Remarks

# Questions?

## Contact Information:

Marguerite Donohue, Ph.D.

Dean, Academic Development, Algonquin College

[donohum@algonquincollege.com](mailto:donohum@algonquincollege.com)

## Reference:

Donohue, M. M. (2010) Transfer of Learning from the Classroom to the Cooperative Education Workplace in a Baccalaureate Program in an Ontario College of Applied Arts and Technology. Unpublished Doctoral Dissertation, University of Toronto. <http://hdl.handle.net/1807/26169>