

# Learning Outcomes and the Educational Value of Cooperative Education

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Presenters Cheryl Cates and Patricia Jones will discuss the importance of designing higher education co-op programs to enhance learning outcomes. Stipulating that co-op's purpose is individualized student learning, Cates and Jones will use examples and guidelines on how to maximize learning and measure outcomes. Group discussion will center on co-op program goals and objectives, methods and benefits of designing a learning workplace, learning theories, the importance of an academic orientation to cooperative education, strategies to build a co-op program around principles for maximum student learning, and authentic assessment strategies. This session was created with the co-op practitioner in mind, but is also relevant to employers interested in the aspects of co-op that differentiate it from job placement.

Cates and Jones have authored the book, *Learning Outcomes and the Educational Value of Cooperative Education*, which will be published by CEA in time for the conference. The book will be available for purchase after the session. At the time this was being written, the book is a work in progress. However, some excerpts are available:

## EXCERPTS FROM CHAPTER 1: How do Students Learn?

What is it about cooperative education that makes it so exciting to those involved? Talk to anyone connected to the process—students, employers and educators—and you will likely receive glowing recommendations and strong endorsements of cooperative education as the most comprehensive methodology for educating students

in both the theory of their profession and the practice of today's marketplace. But why is cooperative education such an effective teaching methodology?

If we in the field of cooperative education want to promote the educational value of cooperative education, perhaps we should start with the basics of how students learn. By developing an expertise of our own on relevant learning theories and their connection to cooperative education, we will be in the best position to teach others.

There are several theories on how students learn. Some of these theories attack the learning process from a systemic point of view. Others look at each of the individual aspects of learning. We will look at several of these theories to gain insight into the complex process of educating the co-op student and the implications these theories have in cooperative education.

Robert Gagne's Conditions of Learning

Howard Gardner's Theory of Multiple Intelligence

Benjamin Bloom's Taxonomy of Educational Objectives

Atkinson's Model of Achievement Motivation

Jean Piaget's Cognitive Development Theory

Albert Bandura's Social Learning Theory

David Kolb's Experiential Learning Model.

As co-op professionals become more familiar with the theories related to student learning they will be able to more effectively convey the learning benefits of cooperative education. They will also be able to structure the co-op program around student learning.

## EXCERPTS FROM CHAPTER 2: Building a Co-op Program Around the Principles for Effective Student Learning

From the Student's Perspective—One of the ways to think about structuring the cooperative education program is to consider

the teaching methods which improve student information processing, motivate students and get students involved in their own learning. Over the last twenty years there have been numerous studies to determine ways in which more effective teaching differs from less effective teaching. We will discuss the teaching behaviors that have been identified as essential for good teaching based upon these studies. To ensure that your co-op program is built around the principles for student learning, behaviors that maximize student learning could be build into co-op programs. Some of the behaviors to guide student learning through cooperative education are:

**Set Expectations:** Make sure that the students understand what is expected of them and what they can expect from the cooperative education program.

**Expectancy for Success:** Students are motivated when they have a high expectation of success and believe that the difficulty of the task is reasonable. An excellent technique is to use senior co-ops as role models for junior co-ops.

**Transfer of Knowledge:** Co-op professionals can develop tools, methods and instruments to facilitate a transfer of knowledge and monitor that transfer through individual meetings.

**Encourage Feedback:** Students should receive both formal and informal feedback from their co-op employer. Co-op professionals should establish an organized system to document student learning and performance during the co-op work term.

**From the University's Perspective—**Design your cooperative education program using the academic model of designing a course. The first step is to define your educational purpose. This could become somewhat of an educational mission statement that defines what your purpose is in terms of educating students. The next step is to establish goals. These are specific learning outcomes that you want your students to achieve through their co-op edu-

cation. Make sure that your goals are in line with the goals of the institution and the academic departments. Next, select and arrange content of your program that should support your mission and goals and maximize student learning. Next, write a syllabus. Cooperative education should be described to students using the academic language with which they are familiar—the syllabus. Last, gather feedback. Every good teacher uses feedback to improve his or her teaching, so too should the co-op educator.

**From the Employer's Perspective—**Develop your co-op program to maximize student learning. There are some simple activities that you can build into the program that will help students learn. Some of these are:

- Provide students with a “just-in-time” education on those specialized areas that have not been covered by their classroom studies during individual one-on-one sessions.
- Create special seminars for co-op students to provide specific industry knowledge that their coursework will not cover.
- Allow them to attend seminars and workshops that are already in place for regular full-time employees.
- Create a library of useful information that co-op students can reference to learn independently.
- Talk to the students about their elective courses and encourage them to take the electives that you see as most valuable to their growth and development.

These will be discussed in further detail, along with additional activities. Each of these activities will help students learn and develop their skills and at the same time give employers the opportunity to view students performance and assess them as future leaders of the company.

#### EXCERPTS FROM CHAPTER 3:

**Tying Co-op Learning to Academic Goals**  
Cooperative education is a program primarily designed for student learning, so it

is only natural to maximize co-op's attachment to the academic world whose primary purpose is also student learning. We will discuss methods to enrich co-op by linking it with academic goals and the benefits of this approach. Then we will discuss learning-based program goals, use of instruments that guide and enhance student learning, use of a syllabus, assessment plan and evaluation of program goals, links to academic faculty, and alignment with institutional goals.

The most important benefit from linking co-op with academics is that we optimize student learning. As a second benefit, we can form and assess clearly defined goals for student learning in an academic context. This not only crystallizes our own purpose, but it allows us to do valuable outcomes assessment. A third important benefit is that the co-op program may ensure its survival in this post-Title VIII funding atmosphere by reaching for academic goals. When we can contribute to the academic mission of the campus, we may prevent being marginalized or worse, seen as redundant to the services of the placement office.

When cooperative education emphasizes learning outcomes, this necessitates an academic approach that includes emphasis on learning, use of academic assignments, planned learning experiences, and site selection based on learning opportunities. Academic components of cooperative education are linked with the application of learning theories. Together, they strengthen the co-op program and therefore are critical for maximizing learning outcomes.

#### EXCERPTS FROM CHAPTER 4: Developing a Learning Work Site

While students are at the co-op work site, they are typically learning on a continuous basis. But they may not be aware of their learning without our intervention and direction. To maximize student learning we must bring that learning into the students' conscious minds. Through a series of questions, reflection, and feedback from their colleagues, co-op students begin to create a deeper understanding of their everyday activities.

We will look at creating a learning work site from start to finish. We will review the principles of learning in the workplace, discuss the role of the co-op supervisor and the principles for facilitating learning, go through the steps for setting up a learning program at the work site, and consider the use of mentoring to maximize student learning.

As partners in the educational process, cooperative education employers are some of the most powerful instructors that co-op students will ever have. They provide a real world perspective and timely real world situations that prove invaluable to students' learning, growth and development. While it is the role of the educational institution to provide the framework for the cooperative education experience, it is up to the employers to execute and often to improve upon that framework.

#### EXCERPTS FROM CHAPTER 5: Activities to Guide Student Learning

Over nearly 100 years of co-op history, co-op programs around the world have developed a myriad of activities to guide, document, measure, and evaluate student learning. Whether or not academic credit is awarded for cooperative education, using well-designed activities will enhance student learning and offer concrete evidence of learning to the institution and to the employer. Learning outcomes can only be known from use of such instruments that make learning conscious and make the co-op job meaningful.

**Co-op Preparation Activities—**To set the stage for maximum student learning, several activities will aid in assessing learning outcomes later. They include: skills/interests/values assessment, learning objectives essays, learning contracts, and a co-op preparation seminar.

**Activities used During the Co-op Term—**During the work term, some additional activities will enhance student learning. In some cases, these instruments are best used in conjunction with co-op preparation activities. We will discuss the use of work journals, the concurrent co-op seminar, mid-term evaluation, portfolio development, and academic projects.

Reflective/Evaluative Assignments for the End of the Co-op Term—At the end of the co-op term, it is vital that students reflect on what they have learned. Assignments at the end of the term can help students gather insight from their co-op learning, apply what they have learned to their studies and their career preparation, and prepare for their next co-op assignment. Reflective/evaluative assignments take many forms such as the student evaluation form, the short-answer evaluation, the evaluation essay, and the employer evaluation.

All these activities, discussed in detail in the book, should be designed to enhance the student's learning and to demonstrate co-op learning outcomes. Of course, in order for these instruments and tools to be effective, they must be used wisely. Evaluations that students and supervisors submit must be reviewed by the co-op educator and used in consultation sessions with the student, not just put into the portfolio or file. Students need feedback on their assignments, and in many cases the co-op educator has to take the time to help students see the link between working and learning. In order to compel students to put thought and effort into the assignments, it is best that they are required, not just encouraged. They must be taken seriously by the student, the supervisor, and the co-op educator. Many different outcomes can be found if these instruments are used well.

#### EXCERPTS FROM CHAPTER 6: Specific Outcomes of Cooperative Education

Cooperative education provides students with the opportunity to develop those skills which industry has identified as critical for success. It also provides students with the opportunity to develop maturity and responsibility as they make the transition from the role of student to professional. Cooperative education is so powerful because its outcomes serve both educators and employers and all to the benefit of students. Students receive an education that is more valuable because it includes the perspectives of both educators and employers. Educators are able to provide a better overall education for their students

than would be possible in strictly a traditional classroom situation. And employers contribute to and benefit from a workforce that has the skills deemed necessary for success in the workplace.

Are there specific learning outcomes that each student receives through cooperative education? Can we isolate the learning acquired and skills developed through cooperative education? Many have attempted to answer these questions, and there seem to be several recurrent themes in those attempts to define cooperative education learning outcomes. These are:

**Learning that is Related to the Student's Curriculum:** Co-op provides students with the opportunity to develop specific competencies, professional skills and technical knowledge related to their academic majors. Students learn from professionals in the field for which their disciplines are preparing them.

**Learning that is Related to the "World of Work":** Through cooperative education, students are able to develop a better understanding of how to interact with others in the workplace. They develop an understanding of the culture, technology, and practices of employing organizations.

**Developing Connections Between Theory and Practice:** The coordination of work experiences with the campus educational program provides a closer relationship between theory and practice therefore students find more meaning in their studies. Students develop greater clarity about their academic goals because they have been able to see the connections between academic theory and workplace practice.

**The Ability to Test Aptitudes and Career Goals:** Cooperative education provides students with the ability to learn about options as they define career plans and clarify their career goals. They are able to explore their abilities and determine their strengths and weaknesses.

**The Transition from Student to Professional:** During the transition from student to full-fledged professional employee, co-op students are developing a sense of responsibility and maturity. They are learning to rely on their own judgements and

learning to view themselves less as a student and more as a professional.

From the standpoint of educators in the field of cooperative education, co-op develops several learning outcomes to the benefit of our students. But what are the learning outcomes that industry requires? Does cooperative education address those needs? Major research studies to determine skills and competencies that are and will be required of industry to create an effective workforce will be discussed.

#### EXCERPTS FROM CHAPTER 7: Co-op as a Model for Authentic Assessment of Student Learning Outcomes

Educators have paid surprisingly little attention to the assessment traditions and practices of experiential education. But co-op in particular has much to contribute to the on-going debate over assessment in higher education, especially with respect to the utility of authentic assessment techniques. In fact, cooperative education provides a model for assessing learning outcomes in higher education.

The hallmarks of assessment are readily found in co-op. They include multiple methods of data collection, multiple perspectives, student-constructed evaluation, program-based assessment, portfolios, and feedback loops. A further dynamic of assessment is that it takes place throughout the student's contact with the co-op program. Students are developing personally and professionally at all phases. Co-op is uniquely equipped to sense subtle changes and document development of students' skills.

Assessment in co-op can be helpful in many ways. Co-op professionals should consider the benefits of assessment to:

- The students: When evaluation instruments sense and document their own developing skills, students can appreciate and build on what they are learning.
- The co-op program: Gathering feedback can improve the program, and publiciz-

- ing assessment data that documents student learning gives the program clout.
- The institution: Co-op assessment data includes excellent external feedback that can be helpful for accreditation and for program reviews.

The session discussion will conclude with the steps that co-op programs should take to create and use an assessment strategy:

- Define the co-op program's goals, keeping in mind our connection to the mission and goals of our academic units and institution.
- Establish specific learning outcomes that students will be achieving through participation in your co-op program.
- Design evaluation instruments to measure these specific learning outcomes and capture students' achievements.
- Gather results of evaluation on a regular and systematic schedule for use in measuring student learning as well as program evaluation.
- Use the results of your evaluation process to promote the value of cooperative education.



Presenters: Cheryl Cates is an Associate Professor at the University of Cincinnati with nine years of experience in cooperative education. She has been an active member of the Ohio Cooperative Education Association and is currently Secretary of that organization. She has presented at the World Association for Cooperative Education, the Cooperative Education Association, and the Cooperative Education Division of the American Society of Engineering and the Ohio Cooperative Education Association. She has been awarded the MCEA and OCEA Research Grants for 1999.

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and Emerging Leaders Program. She is currently the Region IV representative on the CEA board, and has served several years on the board for MCEA and the Michigan Council for Cooperative. In addition, she has been involved in career planning and education for 14 years and in co-op for 10 years. She has a Master of Public Administration degree

Differences in educational outcomes might be attributable to individual differences in intelligence, creativity, motivation, and aspects of self such as self-concept, self-esteem, and self-efficacy. Research concerning the bases of individual differences has been highly influential in education. For example, Strenze (2007) concluded that psychometric (g) intelligence is a powerful predictor of educational, occupational, and financial success. Although teachers do not routinely test their students' intelligence, a number of alternative models of intelligence, such as Howard Gardner's The Desired Outcomes of Education (DOE)<sup>1</sup> are attributes that educators aspire for every Singaporean to have by the completion of his formal education. These outcomes establish a common purpose for educators, drive our policies and programmes, and allow us to determine how well our education system is doing.Â a self-directed learner who takes responsibility for his own learning, who questions, reflects and perseveres in the pursuit of learning; an active contributor who is able to work effectively in teams, exercises initiative, takes calculated risks, is innovative and strives for excellence; andÂ The Key Stage Outcomes spell out what the Education Service aspires to develop in our students through Primary, Secondary, and Post-Secondary<sup>2</sup> education.