DOCUMENT RESUME

ED 357 771 JC 920 207

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TITLE Professional Development from a Learning Point of View.
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PUB DATE [91]
NOTE 35p.
PUB TYPE Reports - Descriptive (141)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Activity Units; Carpentry; Cognitive Style; Community Colleges; Course Content; *Curriculum Design; *Curriculum Development; *Experiential Learning; Foreign Countries; Holistic Approach; Learning Theories; Participative Decision Making; Self Evaluation (Individuals); Two Year Colleges; Units of Study; Vocational Education; Workshops
IDENTIFIERS *Eastern Community College NF Clarenville Campus

ABSTRACT

An overview is provided of the curriculum design and implementation process developed and implemented at Eastern College of Applied Arts, Technology and Continuing Education in Newfoundland, Canada. Following introductory comments, the philosophical background to the model is outlined, underscoring its reliance upon the assumption that learning is natural, holistic, cumulative, and lifelong. After comparing traditional, outcomes-based, and experiential models of learning, the paper offers a rationale for the developmental and experiential approach adopted by Eastern College. Six practical applications of the experiential learning model are identified: an articulated curriculum, clear expectations, multi-dimensional learning experiences, integrated learning methodologies, quality-based learning assessment, and learning support. Next, the curriculum planning process is outlined, focusing on the development of course catalogs that provide a developmental framework for each unit, and of learning guides that present students with concise, clear, straightforward directions for completing each learning experience. After explaining the use of resource files, student self-evaluation systems, and formal problem-solving procedures to maintain daily control, the paper describes the components of the learning support system briefiy. The implementation strategy, which involves regional and departmental committees, learning management workshops, curriculum planning, and daily control, is reviewed next. Concluding comments stress the orientation toward success incorporated in the experiential learning model. A 32-item bibliography and samples of instructional/curriculum materials from a carpentry program are appended. (PAA)

Professional Development

From A Learning Point of View

Presented by

Walter Smith

Eastern Community College

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From a Learning Point of View is a professional development process in curriculum design and implementation that has been developed at Eastern Community College to individualize instruction. Instructors are seconded from their regular duties for a period of 6 to 8 weeks to organize their programs in preparation for the new delivery system.

The learning management system is unique, not because any new ideas about education are introduced, but because a fresh perspective on learning design has been developed through the use of quality planning and management. Since each educational program is an entity in itself, we are doing this on a program by program basis.

Through its mission statement and goals, Eastern Community College is firmly committed to providing accessible educational programs. There are three types of barriers to this accessibility:

1. Financial Barriers
2. Program Barriers (inflexible scheduling of courses)
3. Learning Barriers (rigid learning system)

While financial limitations will always exist in education, we felt that the other two barriers could be overcome through flexible scheduling and an accommodating

learning system.

Philosophical Background

The development of the model began with the following assumptions:

1. Learning is a natural thing that human beings do with or without assistance
2. Learning is holistic by nature
3. Learning is cumulative
4. Human beings continue learning all their lives.

From the above premises we reasoned that the most effective learning system would be one that resembled the natural learning process. In order to develop an institutionalized version of natural learning, it was necessary to identify a practical definition of the process.

Models of Learning

Research indicates that educational models may be divided into three fundamental groups: (1) traditional, (2) outcome-based, and (3) experiential.

The traditional model was devised 2000 years ago by the Greeks. It is based on the concept that intelligence is innate and is characterized by the logical organization of knowledge.

Outcome-based models of learning immerged as a preparation for industrial and business occupations. Those educational programs are characterized by an emphasis on practical skills.

In the past century, educators such as Jean Piaget, Kurt Lewin, and John

Dewey attempted to integrate traditional and outcome-based philosophies into an holistic model which resembled natural learning. David Kolb and his associates at Case Western Reserve University in Cleveland are continuing this work. Their experiential learning cycle identifies four types of learning experience:

1. Practical
2. Communication (Verbal and Print)
3. Rationalization (Arranging ideas in relation to experience)
4. Creativity (Experimentation, Problem Solving, Risk Taking)

This developmental approach suggests that learning takes place as a series of meaningful activities. It provides us with a reasonable definition of learning that can be used (as Arthur Chickering describes) to design successful learning programs.

> *"There is no question that issues raised by experiential learning go to the heart of the academic enterprise. Experiential learning leads us to question the assumptions and conventions underlying many of our practices. It turns us away from credit hours and calendar time toward competence, working knowledge, and information pertinent to jobs, family relationships, community responsibilities, and broad social concerns. It reminds us that higher education can do more than develop verbal skills and deposit information in those storage tanks between the ears. It can contribute to more complex kinds of intellectual development and to more pervasive dimensions of human development required for effective citizenship. It can help students cope with shifting developmental tasks imposed by the life cycle and rapid social change.*
>
> *Fixed time units set by semester, trimester, or quarter systems stretch some learning to the point of transparency and and lop off other learning at the head or foot. Experiential learning systems will be supplemented by flexible scheduling options that tailor time to the working realities of various*

experiential opportunities.

We will recognize the key significance of differences among students, not only in verbal skills and academic preparation, but also in learning styles, capacity for independent work, self-understanding, social awareness and human values" (Arthur Chickering).

Eastern Community College's Comprehensive Experiential Learning Model attempts to put this theory into practice. We analyzed many practical educational models to find ways and means of accomplishing this objective. We looked at Back-To Basics, Accountability, TESA, Learning Styles, CBE, Effective Schools, ITIP, Inquiry Teaching, Whole Language, 4-MAT, Cooperative Education, Cooperative Learning, ODDM, Writing Across the Curriculum, Mastery Learning, Effective Teaching Research, Empowerment, and Self-Directed Learning. Through the use of affinity diagrams, we identified six practical applications of the experiential learning model:

1. An Articulated Curriculum. Learning experiences are clearly defined in terms of learner needs.

2. Clear Expectations. Learning expectations are clearly defined in terms of what is to be done.

3. Multi-Dimensional Learning Experiences. Cognitive, psychomotor and affective learning dimensions are integrated to provide a natural setting for experimentation, risk taking, and problem solving.

4. Integrated Learning Methodologies. Learning styles, the learning cycle, and mastery learning concepts are used by students to develop a personalized systematic approach to accumulating learning experience.

5. Quality-Based Learning Assessment. The evaluation system rewards the continuous improvement of self-direction in learning.

6. Learning Support. A formalized problem solving procedure is used to identify needs and ensure effective use of the learning support system.

Curriculum Planning

The development of a new program begins with an advisory committee of practitioners. Planning is done using brainstorming sessions; but information from similar programs may be used to help generate ideas. Affinity diagrams are constructed using 3 x 5 3M Post-It Notes placed on a large wall. Ideas are grouped according to the natural relationships among items. This is a creative process which gets people to react from the gut level.

Course Catalogue

The affinity diagrams are formalized in a course catalogue (Appendix A) which outlines the courses and provides a developmental framework for each unit (Appendix B) to assist instructors in completing the program development.

The course catalogue is designed around learning experiences which we designate as services. A service is defined as a comprehensive unit of work which meets an identifiable need. The catalogue provides a straight forward means of communicating course content so that potential learners can make informed decisions as to whether or not the program meets their current needs.

Learning Guides

Learning guides are formalized tree diagrams which provide students with concise, clear, straight forward directions to follow in completing each learning experience. Appendix C is an example of a unit from a learning guide. Over 1000 similar units have been developed by instructors at Eastern Community College in such diverse subjects as carpentry, the piping trades, hairstylist, welding, accounting, computer applications, secretarial studies, mathematics, statistics, communications, literacy, chemistry, physics, biology, psychology, economics, and marketing.

The learning guides define expectations; they are not learning activity packages. In order to achieve expectations, students may select from a variety of learning resources which may include learning activity packages, reference books, audiovisual materials, computer assisted learning materials, learning kits, etc.

The learning guides are designed around the four categories of the experiential learning cycle: (1) learning methodology for rationalization or meaningful organization of the whole experience, (2) procedural guidelines for practical experience, (3) knowledge questions for communications experience, and (4) projects for creative application.

Methodology. This section of the learning guide directs students in rationalization (or meaningful organization) of the learning experience. They use a computerized learning styles inventory to identify their learning preferences which then enables them to select the most appropriate initial learning activities.

They may decide to begin with practical activity, reading, discussion, answering questions, or anything they consider appropriate. The learning guide is structured so that they must eventually move through activities from all four categories of learning experience. This involvement in diverse learning activity results in the broadening of learning style. The process is followed for each unit (using the learning procedures record in Appendix C to list activities) until mastery of the standards set for each unit has been achieved.

Procedural Guidelines. The procedural guidelines provide the directions for performing the practical part of the learning experience. Students use the guidelines to do specific projects until they develop the practical skills to carry out the service.

The procedural guidelines always include employability, learning improvement, and quality assurance - attributes of workers which are not part of the technical training but are necessary for successful integration into the workforce.

Knowledge. Knowledge questions provide the basis for meaningful communication about the service.

Projects. The projects form (in Appendix C) is used by the students to choose meaningful applications of the service. The projects are designed to challenge the student's creative abilities.

The catalogue and the learning guides clearly define the educational program. Students are the consumers of this program and they should expect

quality learning activities that will enable them to achieve the expectations that have been set. But it is a shared responsibility, where instructors and administrators work with students to continuously redesign learning activities and make them responsive to individual needs.

Daily Control

Daily control is maintained using resource files, self-evaluation, and a formal problem solving procedure.

Resource Files

Instructors maintain resource files to facilitate the coaching of students through the learning cycle. The files include a variety of projects, assignments and information handouts. Alternate resources are continuously sought that will respond to the specific day-to-day needs of students.

Evaluation System

The evaluation system is designed to award students for taking on the responsibility of accumulating their own learning experience. Expectations and standards are clearly defined for each unit and students may repeat procedures as many times as necessary until they are capable of achieving the evaluation criteria. Consequently, they have control over the grade they receive. Points are reduced proportionately for second and third evaluation attempts so that interim self-evaluation is seen as the key to responsible learning. It is interesting to note the resemblence between our evaluation process and the Deming Cycle for continuous

improvement.

Problem Solving

When a problem is identified from the student's progress record, the student and the teacher and/or the student services counselor form a problem solving team. They use a formal procedure to analyze the problem and impliment a solution.

Learning Support

The learning support system maps out contingency procedures for dealing with the learning problems identified by problem solving teams.

Basic Education Services

A complete basic education program has been developed using the same format as the occupational training programs. This service can be accessed on a full-time, part-time, or "as needed" basis.

Life Skills

A life skills program is available to assist students who have problems with self-esteem and everyday living skills.

Special Needs

A special needs program is being developed to assist students identified as handicapped or disadvantaged.

Implementation Strategy

Eastern Community College's implementation strategy is designed to deal with the anxiety caused by the uncertainty associated with change. This is done through participatory management where committees are set up to make recommendations on every aspect of planning and management.

Regional Committees

Regional committees made up of department chairpersons meet regularly to keep information flowing and make recommendations to management.

Departmental Committees

Each departmental chairperson heads a committee made up of the department staff. These committees identify local problems and recommend issues for discussion at the regional level.

Learning Management Workshops

Two learning management workshops are conducted: (1) Curriculum Planning and (2) Daily Control.

Curriculum Planning. The course catalogues for new programs are developed at the advisory committee level. Course catalogues for existing programs and all learning guides are developed by instructors. The workshops are facilitated by a program coodinator who assists with the process.

Daily Control. Operational workshops are done before the new program is implemented. These workshops are conducted by the program coordinator and deal with evaluation procedures, problem solving and contingency planning.

Summary

The comprehensive experiential learning model developed by Eastern Community College creates a system where success is an expectation. It incorporates the philosophy that the system determines the quality of its outcomes. If the system is designed to permit failure, then it will happen and no one can be held accountable for it.

Educational planning should not take failure into consideration. Clear expectations, achievable goals and sensible means should be established through quality planning and management to assure that all students can have full access to the educational programs of their choice.

Bibliography

Adkins, Gary (1989). Megatrends: Author Forsees the Millennium. Educational Leadership, 47(1), 16-17.

Arredondo, Daisy and Block, James (1990). Recognizing the Connections Between Thinking Skills and Mastery Learning. Educational Leadership 47(5), 4-10.

Benjamin, Steve (1989). An Ideascape for Education: What the Furturists Recommend. Educational Leadership, 47(1), 8-12.

Block, James (Ed.) (1971). Mastery Learning. New York: Holt, Rinehart & Winston

Bloom, Benjamin (1976). Human Characteristics and School Learning. New York: McGraw-Hill Book Company.

Brundage, Don & MacKeracher Dorothy (1980). Adult Learning Principles and Their Application to Program Planning. Toronto: Ministry of Education.

Caine, Renate and Caine, Geoffrey (1991). Making Connections: Teaching and the Human Brain. Alexandria, Virginia: Association for Supervision and Curriculum Development.

Carroll, John (1963). A Model of School Learning. Teachers College Record,64, 723-733.

Carwile, Nancy (1990). Punching Wholes Into Parts, Or Beating the Percentile Averages. Educational Leadership, 47(5), 79-80.

Chickering, Arthur (1977). Experience and Learning: An Introduction toExperiential Learning. New Rochelle, New York: Change Magazine Press.

Dewey, John (1938). Experience and Education. New York: Collier Books.

Goldberg, Mark (1990). Potrait of Dennis Littky. Educational Leadership,47(8), 28-31.

Griffith, Raymond (August,1989). The Lesson of the Fireplace. Vocational Education Journal, 23-24.

Keep It Simple (May, 1975). The Royal Bank of Canada Monthly Letter, 56(5).

Kidd, Robert (1973). How Adults Learn. New York: Association Press.

King, Bob (1989). Hoshin Planning: The Developmental Approach. GOAL/QPC.

Knowles, Malcolm (1975). Self Directed Learning: A Guide for Learners and Teachers. Chicago: Follett Publishing Co.

Kolb, David (1984). Experiential Learning. Englewood Cliffs, New Jersey: Prentice Hall Inc.

Lewin, Kurt (1951). Field Theory in the Social Sciences. New York: Harper and Row.

Lifelong Learning (December, 1974). The Royal Bank of Canada Monthly Letter,22(12)

Lowe, Ted and Mazzeo, Joseph (September, 1986). Crosby, Deming, Juran: Three Preachers, One Religion. Quality. Hitchcock Publishing Company.

Mammary, Al. Outcomes-Driven Developmental Model. New York, Johnson City Schools District.

Marzano, Robert and Ewy, Robert (August, 1989). Thinking For Tomorrow. Vocational Education Journal, 23-31.

Maslow, Abraham (1970). Motivation and Personality. New York: Harper and Row.

Moore, David Thornton (1981). Discovering the Pedagogy of Experience. Harvard Educational Review, 51(2), 286-300.

On Saying What You Mean (May 1987). The Royal Bank of Canada Monthly Letter, 58(5).

Pfeiffer and Jones (1975 & 1980). Experiential Learning. Annual Handbook for Group Facilitators. University Associates, San Diego, CA.

Paiget, Jean (1970). Genetic Epistemology. New York: Columbia University Press.

Put It In Writing (January, 1972). The Royal Bank of Canada Monthly Letter,53(1).

Reneau, Fred (August, 1989). Framing the A+ Test. Vocational Educational Journal, 34-35.

Rogers, Carl (1969). Freedom to Learn. Columbus, Ohio: Charles Merrill Publishing Co.

Smith, Robert (1982). Learning How to Learn: Applied Theory for Adults. New York: Cambridge.

Appendix A

Carpentry Course Catalogue

CARPENTRY

COURSE CATALOGUE

Introduction

This course catalogue is organized from a "needs" perspective. It lists the services that you will be able to provide when you have completed the carpentry program.

This program, like other individualized programs at Eastern Community College, is designed for accessibility through the scheduling of courses and through an accommodating learning system.

You may challenge competencies acquired through previous experience and transfer credit from similar courses you may have done. This program is available on an open entry/open exit basis, through full-time and part-time study, and through cooperative education.

The learning system is designed to accommodate your learning needs. You will be able to select the activities that best enable you to accomplish your learning goals.

This program is competency-based with standards set by the construction industry. Courses are developed around practical projects that simulate actual working conditions.

Although this program is self-paced, reasonable time frames are set for courses to enable you to manage your time more effectively.

CARPENTRY COURSE CATALOGUE

Carpentry 1109

1. Saw Horse
2. Tool Box
3. Straight Edge
4. Ladder
5. Miter Box
6. Spirit Level Case
7. Oil Stone Case
8. Door Jack
9. Concrete Wood Float

Carpentry 1205

1. Construction Shack
2. Electrical Service Support
3. Wooden Walkway
4. Lumber Storage

Carpentry 1304

1. Building Corner Points and Lines
2. Batter Boards and Lines
3. Footing Forms
4. Foundation Drainage

Carpentry 1407

1. Wall Forms
2. Runways
3. Ramps
4. Splash Boards

5. Chutes
6. Stair Forms
7. Stripping Concrete Forms

Carpentry 1505

1. Column, Beam and Slab Forms
2. Bents
3. Special Forms
4. Shoring and Underpinning
5. Concrete

Carpentry 1604

1. Sills
2. Beams
3. Columns
4. Floor Framing

Carpentry 1705

1. Exterior Walls
2. Bracing
3. Exterior Wall Sheathing
4. Non-Bearing Partitions

Carpentry 1802

1. Post and Beam Timber Framework
2. Plankwall Construction

Carpentry 1902

1. Common Type Scaffolds
2. Special Scaffolds

Carpentry 2003

1. Trussed Rafters (Build)
2. Trussed Rafters (Install)
3. Roof Sheathing

Carpentry 2103

1. Shed Roof
2. Gable Roof
3. Hip Roof

Carpentry 2203

1. Intersecting Equal Pitch Roofs
2. Intersecting Unequal Pitch Roofs
3. Unusual Pitch Roofs (Architects Design)

Carpentry 2303

1. Gambrel Roof
2. Mansard Roof
3. Flat Roof

Carpentry 2402

1. Timber Truss (Build)
2. Timber Truss (Install)

Carpentry 2503

1. Cornices
2. Common Roof Coverings
3. Special Roof Coverings

Carpentry 2602

1. Exterior Frames (Windows and Doors)
2. Special Exterior Wall Trim

Carpentry 2706

1. Wood Sidings
2. Metal Sidings
3. Vinyl Sidings
4. Fiberboard Sidings
5. Stucco Finish
6. Retrofit Siding

Carpentry 2803

1. Insulation
2. Vapor Barrier
3. Sealants

Carpentry 2903

1. Ceiling Strapping
2. Ceiling Tiles
3. Drop Ceiling

Carpentry 3005

1. Gypsum Drywall
2. Decorative Panels
3. Special Interior Wall Coverings
4. Plaster Grounds and Base
5. Accoustic Materials

Carpentry 3105

1. Interior Door Jambs
2. Standard Doors
3. Special Jambs or Frames
4. Special Doors
5. Interior Trim

Carpentry 3203

1. Underlayment
2. Strip Flooring
3. Special Wood Floors

Carpentry 3302

1. Rough Bucks (In Masonry)
2. Metal Frames (In Masonry)

Carpentry 3403

1. Shelving and Bookcases
2. Kitchen Cabinets
3. Special Purpose Fixtures

Carpentry 3503

1. Basement Stairs and Exterior Steps
2. Finish Stairs
3. Geometrical Stairs

Procedures Manuals

1. Employability
2. Learning Improvement
3. Quality Assurance

Appendix B

Developmental Framework

Sills

Objective: Install sills.

Conditions:

1. Lumber
2. Nails
3. Anchor Bolts
4. Sill Sealer
5. Wood Preservative
6. Termite Shield
7. Carpenter's Tool Kit

Procedure:

1. Follow employability guidelines.
2. Follow learning improvement guidelines.
3. Follow quality assurance guidelines.
4. Obtain blueprints and specifications.
5. Verify that foundation is straight, level and square.
6. Verify foundation measurements.
7. Select sill stock.
8. Layout anchor bolts on the sill.
9. Drill anchor bolt holes.
10. Treat sill with wood preservative.
11. Install sill.

Knowledge:

1. Terminology
2. Wood Preservation
3. Code Requirements
4. Safety Precautions

Appendix C

Sample Unit from Learning Guide

Carpentry 1604

Table of Contents

UNIT ONE

SILLS

INTRODUCTION

The sill is normally the first wood member that rests on the foundation wall. It is anchored to the foundation to prevent movement of the upper structure. The sill also provides a nailing support for the floor section, and it can be used to correct inaccuracies in the foundation.

OBJECTIVE

Install sills.

TIME MANAGEMENT

The maximum time allocation for this unit is 25 hours. Initial evaluation should be attempted well before the maximum time allocation deadline because extra practice or remedial work may be required to achieve the standards set.

METHODOLOGY

Use your learning styles chart to complete the learning procedures form. Follow the learning cycle until you have mastered the criteria set in the checklist and the knowledge tests.

CONDITIONS

1. Lumber
2. Nails
3. Anchor Bolts
4. Sill Sealer
5. Wood Preservative
6. Termite Shield
7. Carpenter's Tool Kit

PROCEDURAL GUIDELINES

1. Follow employability guidelines.
   (a) See Employability Guide (if necessary).

2. Follow learning improvement guidelines.
   (a) See Learning Improvement Guide (if necessary).

3. Follow quality assurance guidelines.
   (a) See Quality Assurance Guide (if necessary).

4. Obtain blueprints and specifications.

5. Verify that the foundation is straight, level and square.
   (a) Stretch a line tight and use feeler blocks or sighting.
   (b) Use level and straight edge, surveyors level or water hose.

6. Verify foundation measurements.
   (a) Measure with 30 m steel tape.

7. Select sill stock.
   (a) Check for defects (straightness and rot).
   (b) Choose long pieces (less joints).

8. Layout anchor bolt locations on the sill.
   (a) Place sill next to bolts and transfer with a square.
   (b) Place sill on top of bolts and tap to leave marks.
   (c) Transfer to sill using measurements.
   (d) Check for alignment of sill in relation to wall (flush or set back).

9. Drill anchor bolt holes.
   (a) Oversize holes (about 3 mm larger).
   (b) Holes must be drilled straight through.

10. Treat with wood preservative.
    (a) Brush, dip or spray.

11. Install sill.
    (a) Install termite shield (caulk underneath).
    (b) Install sill sealer.
    (c) Install sill over anchor bolts.
    (d) Check for straight, level, aligned and square.
    (e) Shim or notch sill, or chip foundation (if necessary).
    (f) Place nuts and washers and tighten with wrench.

KNOWLEDGE

1. What is the purpose of the sill plate?

2. What kinds of defects may be present in sills?

3. What is the purpose of anchor bolts?

4. Why are anchor bolt holes drilled oversize?

5. Describe the following: sill sealer, termite shield, diagonal, foundation wall, and embedded sill.

6. List the building code requirements for installing sills.

7. Why is wood preservative used?

8. What safety precautions should be taken while installing sills?

RESOURCE REFERENCES

1. Carpentry and Building Construction; John Feirer, Gilbert Hutchings, Peter Wilson, SI Metric Ed., 1982, Copp Clark Pittman.

2. Canadian Wood Frame House Construction; 2nd Metric Ed., 1989, Canada Mortgage and Housing Corporation.

3. Building Trades Blueprint Reading; Ronald K. Strinholm, Canadian SI ed., 1982, Copp Clark Pittman.

4. National Building Code of Canada; 1990, National Research Council of Canada.

5. Occupational Health and Safety Regulations; 1989, Department of Employment and Labor Relations, Newfoundland.

STANDARDS

The standards set for this project are as follows:

Practical Test: Checklist

1. Anchored
2. Level
3. Straight
4. Aligned
5. Square
6. Sealed
7. Treated
8. Code Requirements
9. Joints

Knowledge Test: 80%

You will have to repeat practical and/or knowledge tests when minimum standards have not been met.

GRADING

A total of 100 points is allocated for this unit. The points are distributed and awarded as follows:

1. Practical Test

First attempt.....80 points maximum
Second attempt.....64 points maximum
Third attempt.....51 points maximum

2. Knowledge Test

First attempt.....20 points maximum
Second Attempt.....16 points maximum
Third attempt.....13 points maximum

REPORTING

Points will be totalled for each unit and averaged for the course. Ratings will be reported as follows:

80 - 100 points	A Rating
65 - 79 points	B Rating
50 - 64 points	C Rating
0 - 49 points	Incomplete