Student Outcome Assessment: Improving Student Learning through University/Industry Collaboration at the University of Nebraska at Kearney, Department of Industrial Technology

Stanley L. Lightner, Ed.D., Richard A. Meznarich, Ph.D.
University of Nebraska at Kearney
lightnersl@unk.edu
meznarichra@unk.edu

Abstract

It is the intent of the authors to present an assessment model that can be utilized by other departments seeking accreditation by presenting the process utilized by the Industrial Technology Department at the University of Nebraska at Kearney. The department assesses its accredited programs to assure effective student learning through a comprehensive assessment process directly tied to student outcome statements.

Quantitative and qualitative data collected from each assessment instrument are evaluated by department faculty, industry representatives, and industry program advisory committees to determine changes that may be required in the curriculum. Five assessments are utilized.

Final Evaluation of Intern by Work Site Supervisor: The intern's industry supervisor documents work performance and evaluates training plan objectives set at the beginning of the internship.

Comprehensive Exam: Administered to graduating seniors to determine the level of technical and non-technical knowledge mastered by the student.

Employer Survey: Industrial employers provide information about graduates' initial hire position, current position, increased responsibility, work performance, productivity, business techniques, personal characteristics, and the employer's overall satisfaction with the graduate.

Graduate Survey: Administered to graduates one and five years after graduation. This survey collects data pertaining to the success and advancement of graduates in the workplace.

Student Confidence Scale: Correlating directly to student outcome statements and administered prior to graduation, it provides an understanding of how confident students feel about being prepared to successfully enter the workplace in terms of their knowledge, skills, and abilities.

To assure a continuous cycle of curriculum improvement, faculty and industrial advisory committees, who play an integral role in assessing data and making recommendations to faculty for curriculum improvement, regularly meet to assess the data. Changes to assessment methods, instruments, and curriculum are made as appropriate to continuously improve student learning.

Introduction

The Industrial Technology (ITEC) Department at the University of Nebraska at Kearney (UNK) conducts direct and indirect assessment measures to verify the continued viability of its programs and the success of its graduates to determine if it is succeeding in preparing its graduates for professional positions in Industrial Technology. Program assessment is an essential element in the assessment process [1] and within the ITEC department it is a faculty-held belief that you cannot improve upon that which you cannot measure. Assessment measures are the medium upon which progress is nurtured. As the authors are professors in the Industrial Distribution program, one of four departmental programs, this article relates most closely to that program. It is the authors hope the assessment model presented can be useful to other departments in their assessment efforts.

The department is not only part of an institution of higher learning, within the College of Business and Technology, but is a business as well. And as with any good business, the department constantly re-evaluates itself in order to remain up-to-date and competitive. As the department's programs are not part of the required general studies curriculum, they exist only to the extent that business and industry recruit and hire the department's graduates. Departmental "output" consists of the graduates and one of the most important assessments of the "output" is the extent to which industrial partners recruit, hire, and retain said graduates. The industrial partners are essential elements of the department's programs whose opinions are important and taken quite sincerely.

Assessment or accountability of educational programs has gained importance in higher education during the last two decades [2]. However, at least as far back as the Morrill Act of 1862, assessment was mandated to demonstrate that the stakeholders' funds utilized for higher education are being used judiciously and efficiently. Section 5 paragraph 4 of the Morrill Act of *1862 (12 Stat. 503)* states:

> *An annual report shall be made regarding the progress of each college, recording any improvements and experiments made, with their cost and results, and such other matters, including State industrial and economical statistics, as may be supposed useful; one copy of which shall be transmitted by mail free, by each, to all the other colleges which may be endowed under the provisions of this act, and also one copy to the Secretary of the Interior* [3].

Since this is the very act that established the Land Grant Universities including "such branches of learning as are related to agriculture and the mechanic arts" [3], assessment of engineering and technical programs should not be foreign to those engaged in the teaching of these subjects. While the concept is not new, the formal processes employed certainly have been refined over time.

A review of relevant accrediting associations also reveals strong support for assessment. ABET Criterion 3 of the 2006 – 2007 Criteria for Accrediting Engineering Technology Programs states:

> *Each program must utilize multiple assessment measures in a process that provides documented results to demonstrate that the program objectives and outcomes are being met* [4].

The National Association of Industrial Technology (NAIT) provides assessment criteria to improve the quality of industrial technology programs through an ongoing evaluation process, which is the association that accredited the UNK ITEC Department. Section 6.16 of the NAIT accrediting standards likewise includes language that requires an assessment plan.

> **6.16 Assessment:** *An assessment plan shall be comprised of, but not limited to, the following for each program: (1) program mission statement, (2) the desired program outcomes/student competencies, (3) evidence that the program incorporates these outcomes/student competencies, (4) the assessment measures used to evaluate student mastery of the student competencies stated, (5) compilation of the results of the assessment measures, and (6) evidence that these results are used to improve the program* [5].

The North Central Accreditation Agency also calls for "an assessment system that is broad in scope and appropriate to document student development" [6]. There are universal threads which intertwine through these different accreditation models. One is an accent on student achievement; which the authors believe should be the principal concern of all educators. Another universal component is a set of general guiding principles, which includes various procedures or approaches to data gathering that allow for both quantitative and qualitative data, rather than a rigid assessment plan. A third aspect, but by no means absolute, is the use of this data to refine and advance the educational programs.

This third aspect is analogous to concepts contained within ISO 9000 [7], Baldrige-style organizational evaluation [8], and any other soundly planned strategic planning model. Most planners concur an organization which does not undergo cyclic examinations will not grow, and most likely will decay. If growth does occur, it will not be persistent, and will not automatically assist the organization in meeting its goals.

The authors have heard the complaints of other educators inquiring "why assessment?" and comments that it has been dictated by "them." Given the broad leeway of the earlier noted accrediting bodies, the authors believe it is not difficult to devise an assessment plan, especially not as complex as one may originally believe. When the decision was made to seek departmental accreditation, it became clear an official assessment plan needed to be developed. However, when the department was originally accredited in 2002, one of the criteria cited as deficient was the assessment plan. Through a series of faculty meetings and collaboration with the campus Coordinator of Assessment, it became obvious it was not necessary to "reinvent the wheel" but to employ aspects of programs that were, for the most part, already in place.

Amos [9] discusses the application of assessment techniques to measure industry desired competencies. Industry required competencies are what engineering and industrial technology educators value most, as it is what the industry partners value most. It is for those very competencies that the industry partners seek out the graduates - the departmental "output."

The programs within the department have a broad set of student outcome statements (competencies) that are evaluated to assure the programs meet the department's mission and objectives. For the Industrial Distribution program these competencies were initially identified in the Delphi study *Essential Competencies and Traits for Industrial Distribution Careers* [10]. Competencies for the other programs have been identified via other means, but in all instances, appropriate industrial input was drawn upon and is employed on a continuing basis to maintain the programs' alignment with contemporary industrial practices.

Overview of Assessment Instruments

An analysis of the literature indicates a seemingly infinite range of methods to assess student learning outcomes and program triumphs. Among the approaches used to assess students and programs are the use of certification exams, student, alumni, and employer surveys, and a capstone experience [11]. Each of these approaches, in addition to others, have been used at UNK over the years, each with varying degrees of success.

In keeping with NAIT accreditation standards, the department assesses its program effectiveness. Over the past decade, through the process of evolution, five assessment measures (two direct, three indirect) directly coupled to the student outcome statements were developed and are currently utilized. Quantitative and qualitative data collected from direct and indirect assessment instruments is evaluated once a year by department faculty, industry representatives, and program advisory committees to determine if changes are required in the curriculum.

Direct measures include the *Final Evaluation of Intern by Work Site Supervisor* and the *Comprehensive Exam*. Indirect measures include the *Employer Survey*, the *Graduate Survey*, and the *Student Confidence Scale*. The Student Confidence Scale correlates directly with the Student Outcome Matrix (competencies) for each program. Advantages and disadvantages of each instrument are shown in Table 1. See Tables 2A and 2B for selected examples of the 70 competencies contained in the Industrial Distribution Student Outcome Matrix.

The data collected from each assessment instrument is summarized by degree program and evaluated by the faculty and staff, work site industry representatives, and the program advisory committees as appropriate. Feedback from the assessment instruments are used to determine what – if any – changes may be required in the curriculum.

Table 1: Assessment Instruments

Method	Advantages	Disadvantages
Final Evaluation of Intern by Work Site Supervisor	Direct measure. Measures soft skills. Measures long term personal development. Easy to administer.	Can be subjective – depends on supervisor's definition of survey terms. Lack of uniformity from supervisor to supervisor.
Comprehensive Exam	Direct measure. Easy to administer. Subjectivity or bias is less likely. Over time validity and reliability can be established.	May not measure employer's requirements. Time lag between course work and administration of exam may skew results.
Employer Survey	Indirect measure. Correlates with Intern Evaluation. Large data base over time.	Lack of uniformity from employer to employer. Does not measure cognitive capabilities.
Graduate Survey	Indirect measure. Measures attitudes toward university, college, department, and major.	Difficult to maintain contact over time.
Student Confidence Scale	Captive population makes it easy to administer.	Without work experience judgments may be unreliable.

Final Evaluation of Intern by Work Site Supervisor (Direct Measure):

An internship is mandatory for all departmental Construction Management, Industrial Distribution and Telecommunications Management students and the Final Evaluation of Intern by Work Site Supervisor is an obligatory element of the internship. The evaluation is completed by the intern's supervisor at the end of the 12 credit-hour (480 work hours) internship, typically completed between the student's junior and senior years. The evaluation must be signed by the student and the employer.

The rationale behind this measure is to document the intern's work performance progress since their midterm evaluation and to evaluate the training plan objectives set at the beginning of the internship. Each internship training plan is unique; however, there is a standard group of questions in the Final Evaluation of Intern by Work Site Supervisor instrument covering the areas of Productivity, Business Techniques, and Personal (Table 3). The questions address the "soft" skills necessary for success in the profession. These qualities are predisposed to be the most difficult to teach and are those which highly impact the success or failure of the individual. Given the consequence of these skills, or lack thereof, it was determined by Envick and Envick [10] that assessment was necessary.

Table 2A: Student Outcome Matrix

Competency	Introduction to Technology ITEC 110	Engineering Design Graphics ITEC 120	Technology Today ITEC 130	Electricity/Electronics ITEC 220	Machine Tool Products & Application ITEC 251	Industrial Products & Applications I ITEC 271	Industrial Products & Applications II ITEC 272	Training & Instructional Systems ITEC 290	Applied electronics ITEC 320	Automated Devices & Systems ITEC 351	Manufacturing/Distribution Relationships ITEC 451	Industrial Distribution Branch Operations ITEC 452	Occupational Safety & Health SFED 435	Industrial Management ITEC 308	Leadership in Business & Technology ITEC 408	Industrial Distribution Seminar ITEC 490	Beginning Accounting I BACC 250	Business Communication BSED 320	Principles of Marketing BMKT 300	Principles of Selling BMKT 331	Internship ITEC 475	Economics General Studies ECON GS	Telecommunications Literacy ITEC 150
I. Professional																							
Describe marketing and selling as related to other organizational activities.							X	X			X								X	X			
Describe the sales management function and process											X	X								X			
Practice good decisions that involve ethical problems.											X								X	X			
Describe industrial distributor operations as related to other organizational activities.						X	X									X							
Describe the industrial distributor operations management function and process.												X		X		X							
II. Applied Science and Technology																							
Understand manufacturing processes.					X					X	X												
Apply appropriate mathematical and scientific information to the solution of problems.			X						X	X													
Demonstrate technical expertise.		X		X					X	X													
Apply trouble shooting skills.				X	X				X	X													

Table 2B: Student Outcome Matrix

Competency	Introduction to Technology	Engineering Design Graphics	Technology Today	Electricity/Electronics	Machine Tool Products &	Industrial Products &	Industrial Products &	Training & Instructional	Applied electronics	Automated Devices & Systems	Manufacturing/Distribution	Industrial Distribution Branch	Occupational Safety & Health	Industrial Management	Leadership in Business &	Industrial Distribution Seminar	Beginning Accounting I	Business Communication	Principles of Marketing	Principles of Selling	Internship	Economics General Studies	Telecommunications Literacy
	ITEC 110	ITEC 120	ITEC 130	ITEC 220	ITEC 251	ITEC 271	ITEC 272	ITEC 290	ITEC 320	ITEC 351	ITEC 451	ITEC 452	SFED 435	ITEC 308	ITEC 408	ITEC 490	BACC 250	BSED 320	BMKT 300	BMKT 331	ITEC 475	ECON GS	ITEC 150
III. BUSINESS																							
Understand the principles of selling.						X	X				X									X			
Comprehend industrial marketing.						X	X												X				
Understand total quality management							X											X					
Understand human motivation and behavior.											X	X		X					X	X			
Comprehend the principles of economics																						X	
IV. ORAL AND WRITTEN COMMUNICATION																							
Speak in a professional and convincing manner.								X		X				X	X								
Write concise and professional business letters and reports.																		X					
Use appropriate vocabulary.	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Speak the language of industry.					X	X	X			X	X				X			X	X				
Convey organized thought patterns.						X	X	X		X	X						X			X	X		

Table 3: Work Performance Evaluation

Productivity Volume of work Quality of work Steadiness Knowledge of work Interest in work Attention to detail Organizing efficiently	**Personal** Appearance/Dress Initiative Tact Accuracy Judgment Patience Creativity Self-Confidence Cooperation Flexibility Dependability Leadership Motivation Tolerance for stress Independence Willingness to work
Business Techniques Meeting People Working harmoniously with others Telephone techniques Following instructions Accepting criticism Oral communication Written communication Listening Relationship to Supervisor Relationship with Co-workers	**Comments** Allows for employer and/or student comments

Many of the soft skill topics are also addressed in departmental student run organizations, making them a fundamental part of the curriculum. The information gathered through the Final Evaluation of Intern by Work Site Supervisor instrument is summarized and distributed to faculty, industry representatives, and advisory committee personnel for review.

Comprehensive Exam (Direct Measure)

Each program developed and administered a comprehensive exam during the spring semester 2006. Graduating seniors participated in the exam to determine the knowledge level mastered, both technical and non-technical. Prior to the development of the comprehensive exam, one approach the department considered was to use a nationally normed exam. Four quite distinct programs make up the department, and although a core group of classes is required for all majors, it was determined to be impossible to purchase or to produce a "one size fits all" exam that would address each program. Instruments such as the Society of Manufacturing Engineer's Certified Manufacturing Technologist exam or NAIT's Certified Industrial Technologist exam would not satisfactorily cover the subject matter of the different programs. In due course, the decision was made to develop a bank of questions from the core classes to be given in conjunction with program specific technical questions. As the exam has only been administered

once, a comprehensive study of the results is not complete and it is not possible to evaluate the data in a longitudinal manner.

Graduate Survey (Indirect Measure)

Graduates receive the Graduate Survey one and five years after graduation, administered through Opinio, a Web based survey software package. In addition to its ease of use, one of the principal reasons for using Opinio software for the Graduate and Employer surveys is its ability to compile the data as it is collected and to import the data into a spreadsheet facilitating the analysis of the data. The analysis assists the department and the advisory committees to gauge the success and advancement of graduates in business and to appraise the strengths and weaknesses of the program from the graduates' viewpoint. Information is sought on graduate employment status, salary, advancement information, and on how satisfied the graduates are with the quality of instruction received, quality of facilities, equipment, and academic services.

Employer Survey (Indirect Measure)

The Graduate Survey provides the option for the graduate to identify their current employer. If this option is selected an Employer Survey is sent to the graduate's employer, also using Opinio. As with the Graduate Survey, the Employer Survey is conducted at the one and five year anniversaries of the student's graduation, in part to meet NAIT accreditation requirements. Employers are requested to provide information concerning the graduate in terms of their initial hire position, current position, and the degree to which they have been awarded increased responsibility, work performance, productivity, business techniques, personal characteristics, and the employers' overall satisfaction with the graduate. The questions are virtually the same as those in the Final Evaluation of Intern by Work Site Supervisor instrument. The rational for this is to be able to compare and contrast the student's performance as an intern versus their performance as an employee. Ratings as to how well satisfied the industrial partners (employers) are with the graduates after hire is of the utmost importance to the department.

Student Confidence Scale (Indirect Measure)

The Student Confidence Scale is administered to all graduating seniors immediately preceding graduation and assists curriculum planners within the department develop an understanding of the confidence level of the students regarding their preparation in terms of knowledge, skills, and abilities to successfully enter the workplace. The Student Confidence Scale is correlated with the Student Outcome Matrix (Table 2) of each program.

Assessment Process

The most important part of the process is the analysis and evaluation of the assessment data. It would be pointless to implement an assessment process, collect detailed data, and do nothing with the data, other than to place it on a shelf. To assure a continuous cycle of curriculum improvement faculty, staff, industry partners, and advisory committees meet annually to review the assessment data. It is important again to stress that the advisory committees, comprised of industrial partners, play an integral role in reviewing and analyzing the assessment data and

making recommendations to faculty for curriculum improvement. The authors believe that industry involvement is what contributes to successful engineering and industrial technology programs.

Graduate Survey - Analysis

Fifty-six people were invited to answer the Graduate Survey. Thirty-six responded for a return rate of 64%. Eighty percent of the respondent Industrial Distribution alumni indicated their chief purpose for attending UNK was to prepare for immediate entry into a profession with over 77% saying they achieved the objective. Over 94% rated their learning experience as good to excellent. Program quality is evident as over 91% of the alumni would recommend UNK to others.

Within the *UNK Student Services* category, students were most satisfied with Career Planning and Job Resources, speaking highly for the program as it conducts two career fairs each year for Industrial Distribution majors. They were least satisfied with UNK Financial Aid Services.

Within the *Academic Service Categories*, students were most satisfied with Faculty Concern for Students, Courses in the Major, and Faculty Availability. Again, these findings speak highly for the faculty. General Studies Courses received the lowest satisfaction scores from the students.

The majority of the respondents were satisfied with the facilities and equipment in the department. Eighty percent started their job without delay following graduation. Only one respondent was unemployed indicating they were not in the job market. Companies offering an internship gain a competitive edge when making employment offers. Almost 46% of the graduates are employed with the company where they fulfilled their internships. The respondents to the survey resided in 13 states, with 47% accepting jobs in Nebraska, followed by Kansas, Missouri, California, and Colorado.

Employer Survey - Analysis

Fifteen people received requests to answer the Employer Survey. A total of nine responses were received for a return rate of 60%. The respondents indicated most alumni graduates are performing in an outstanding manner in terms of volume and quality of work. Graduates work best at meeting people and working harmoniously with others, in comparison with graduates of other schools, but only ranked average to good at accepting criticism. Out of the 17 *Work Performance Characteristics*, graduates were ranked highest in initiative, self-confidence, dependability, and willingness to work. While still receiving good ratings, their capability to deal with stress, having patience, and being tactful were ranked the lowest. The graduates received an overall average score of 4.78 on a 1 to 5 Likert scale with 5 being very satisfied with the employee. Employer overall approval data from 2005 is shown in Table 4.

Table 4: Industry's Reaction to Industrial Distribution Graduates (2005)

How would you rate your overall satisfaction with this employee?						
	Not Satisfied 1	2	3	4	Very Satisfied 5	Total
Count	0	0	0	2	7	9
Percent	0	0	0	22.22	77.78	100
Average: 4.78		Minimum Value: 4		Variance: 0.19		
Median: 5.0		Maximum Value: 5		Std Deviation: 0.44		

Student Confidence Scale - Analysis

Seventeen students were invited to reply to the Student Confidence Scale Survey with a total of 16 responses for a return rate of 94%. The respondents were asked to evaluate their ability to carry out 70 tasks. A seven point Likert scale was used with 1 indicating insufficient ability and 7 signifying excellent ability. Scores ranged from a low of 4.59 to a high of 6.29. Overall, the department is pleased with the outcomes and is addressing the causes of the lower scores. For example, the respondents rated their ability to "describe finance and accounting as related to other organizational activities" as 4.65. While this score is acceptable, and after consulting advisory committee members, the Industrial Distribution Branch Operations course was supplemented with a new curricular unit in Distributor Economics.

Final Evaluation of Intern by Work Site Supervisor - Analysis

Fifty six work site supervisors were asked to complete the evaluation instrument: Final Evaluation of Intern by Work Site Supervisor. Because of workplace changes (changing of supervisors) a total of 53 responses were received giving a return rate of 95%. The Final Evaluations of Interns by Work Site Supervisor is a synopsis of individual comments and appraisal of work performance in terms of productivity, business techniques, and personal behaviors. In the Productivity Category, interns were rated highest in interest in work and volume of work performed. Interns ranked lowest in organizing efficiently, while still rating in the good to outstanding categories. In the Business Techniques Category, interns ranked highest in their ability to work harmoniously with others and in meeting people. While most scores were good to outstanding, they rated lowest in telephone techniques and accepting criticism. In the category of Personal Behaviors, the interns ranked highest in dependability, flexibility, cooperation, and willingness to work. While most scores were good to outstanding, they rated lowest in leadership and judgment.

Conclusion - Assessment of the Assessment Process

In keeping with the philosophy of W. Edward Deming [12] of continuous improvement, the assessment model undergoes annual review. Therefore, each spring semester, the faculty of the department reflects on the following points:

1. Are the desired outcomes for graduates of the department relevant and defensible?
2. Do the current means of assessing actually assess the department's desired outcomes for graduates and provide information that allows for continuous improvement of departmental programs?
3. Is the scope and focus of the assessment process reasonable?
4. Do we need to discontinue or add any assessment activities?

After the spring 2005 review of the student outcomes and the measures used to assess the outcomes, the faculty of the department concluded the outcomes for graduates are relevant and defensible. It is important to note that with each step of the assessment process, the program advisory committees are an integral part of the review process. Given that the process evaluates at the course level, at the end of the internship, and after graduation; the faculty believes the data collected contributes to program improvement.

The department has been collecting data for several years and the survey instruments have been refined as the assessment process has evolved. The process is time consuming; however it is increasingly more reliable. The faculty constantly evaluates the curriculum, internship program, and assessment activities, and considers the assessment practices strong and providers of excellent feedback to the program. The assessment activities resulted in a positive and measurable impact in improving the department's programs and were instrumental in the department obtaining NAIT accreditation. It is the authors hope and desire that the model presented can be useful to other departments seeking accreditation.

Bibliography

[1] Boser, R., Stier, K.W., *Implementation of Program Assessment in a Technical ITEC Department*. Journal of Industrial Technology, Volume 21, Number 2, April 2005 through June 2005.

[2] Frye, R., *Assessment, Accountability, and Student Learning Outcomes*, June 2002, Available online: http://www.ac.wwu.edu/~dialogue/issue2.html

[3] Morrill Act of 1862: *Donating Lands for Colleges of Agriculture and Mechanic Arts: An ACT Donating public lands to the several States and Territories which may provide colleges for the benefit of agriculture and the mechanic arts*, July 2, 1862 (12 Stat. 503).

[4] ABET Technology Accreditation Commission, *Criteria for Accrediting Engineering Technology Programs,* 2006-2007 Accreditation Criteria, Available Online: http://www.abet.org

[5] National Association of Industrial Technology, *Accreditation Handbook 2006*, downloaded June 2, 2006, from: http://www.nait.org/accred/2006accreditationhandbookcomp.pdf

[6] North Central Association Commission on Accreditation and School Improvement, *Standard and Criteria For Accreditation of Schools Approved for Postsecondary Education*, downloaded June 2, 2006, from: http://www.ncacasi.org/postsecondary/resource/doc/PS_Criteria_April2006.doc

[7] Hoyle, D., *ISO 9000 Quality Systems Handbook*, 2006, 5th Ed., Oxford: Butterworth-Heinemann Ltd.

[8] Latham J., Vinyard, J., *Baldrige User's Guide: Organizational Diagnosis, Design, and Transformation*, 2006 2nd Ed., New Jersey: Wiley.

[9] Amos, S.J. *Assessment Techniques for Industry Desired Competencies in Construction Education*, 1998 ASEE Annual Conference Proceedings.

[10] Envick, D.D., Envick, B.R. *Essential Competencies and Traits for Industrial Distribution Careers* 1996, Don Envick and Associates, Inc.

[11] Nichols, J.O., Nicholas, K.W., *A Road Map for Improvement of Student Learning and Support Services through Assessment.*, 2005, New York: Agathon Press.

[12] Deming, W. E., *What Every U.S. Business Person Should Know About Successful Management and Bringing Quality Back Home.*, 1990, New York: Simon Schuster.

Biographies

STANLEY L. LIGHTNER is Associate Professor of Industrial Technology at the University of Nebraska at Kearney. He earned his Ed.D. (Occupational and Adult Education, 1997) degree from Oklahoma State University. He worked in industry for a number of years and joined the UNK faculty in 2001. He teaches professional and manufacturing courses within the Industrial Distribution program.

RICHARD A. MEZNARICH is Assistant Professor of Industrial Technology at the University of Nebraska at Kearney. He earned his Ph.D. (Industrial Education, 1978) degree from Texas A&M University. After a successful 25 year career in business and industry he joined the UNK faculty in 2004. He teaches electronics and professional courses within the Industrial Distribution program.