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## A Study to Determine the Learning Preference of Blood Bank Technologist and Technicians

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A STUDY TO DETERMINE THE LEARNING PREFERENCE  
OF BLOOD BANK TECHNOLOGIST AND TECHNICIANS

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A RESEARCH PROJECT  
PRESENTED TO  
GRADUATE FACULTY  
OLD DOMINION UNIVERSITY

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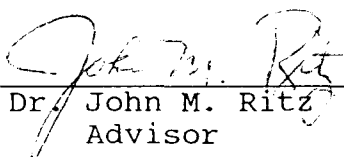
IN PARTIAL FULFILLMENT  
OF THE REQUIREMENTS FOR THE DEGREE  
MASTER OF SCIENCE, ADULT EDUCATION

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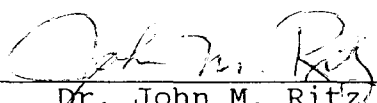
By  
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December 1992

This project was prepared by Tracey Theresa Skeete under the direction of Dr. John Ritz in OTED 636, Problems in Education. It was submitted to the Graduate Program Director as partial fulfillment of the requirements for the Master of Science in Education degree

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## CHAPTER I

## INTRODUCTION

The continuing education concerns for the health professions in the 1990's have taken priority in most major health care organizations, particularly hospitals. There are several reasons for this development. Firstly, "the half-life of the knowledge, skills, attitudes, and values", as described by a proponent of adult education, acquired by allied health professionals during formal training diminishes at an alarming rate if not maintained through practice in his or her chosen field (Knowles, 1990, p.297). Secondly, the public is extremely informed due to the body of knowledge available to them through the technology of mass media, e.g. cable health care programs. Thirdly, the constant threat of fatal or near fatal exposure to HIV resulting in AIDS has created a need for health care professionals to be on top of new developments in treatment and procedures of their respective professions. These three developments have created a need for hospitals to place the continuing education needs of their workers at the forefront of their agenda for the 1990's.

The blood banks in our nations are among the many facets of the health care system who have undergone rapid changes in standards and procedures within the last five years. Out of all of the three causes mentioned above, the one with greatest impact has



been the threat and transmission of the virus which causes AIDS via blood products resulting in a possible subsequent infection both to the health care workers and to the general public.

The Portsmouth Naval Hospital and Sentara Norfolk General Hospital are both major providers of health care for the Hampton Roads area. The Tidewater Chapter of the American Red Cross is a supplier of blood and blood derivatives to Hampton Roads and its surrounding area. The blood banks in these facilities are responsible for providing safe blood and blood components (e.g. albumin) to patients 365 days of the year.

The laboratory workers in the blood bank of The Portsmouth Naval Hospital, Sentara Norfolk General Hospital and The Tidewater Chapter of the American Red Cross were the subjects of this research project which investigated the preferred learning methods of continuing education in their profession.

This study focused on continuing education for the laboratory professional in the blood bank because they represent a health care worker population which have been directly effected by major changes within the last five years. These changes have resulted from technological advances, new regulations, and newly identified disease states, all of which must be presented to the laboratorian in an organized, cost and time efficient manner. The person in charge of disseminating information, usually the lab manager or education coordinator, must face the additional burden of personnel shortages which makes it even more difficult to train the blood bank staff.

### Statement of the Problem

The problem investigated through this study was to determine the preferred learning methods of adults who work in a blood bank in order to develop better continuing education programs and increase participation in these programs.

### Research Goals

The research questions used in this study were as follows:

1. What is the most preferred method of continuing education among laboratory professionals?
2. What is the least preferred method of continuing education among laboratory professionals?

### Background and Significance

The Technical Manual of the American Association of Blood Banks state "personnel should participate in some form of continuing education. This should include individuals on all shifts and those who work only part-time in the blood bank not just fulltime daytime employees." (AABB, 1989, p.370) It also suggests that competence be demonstrated in specific procedures on a consistent and continual basis.

Unfortunately this requirement by the recognized peer professional blood bank agency can be difficult to fulfill in an environment which is plagued with short staff and high turnover rate of employees. Rapid technological advances of immunohematology

(the scientific name for the area of blood banking), creates in added dimensions that must be addressed by the program developers and designers for the department. The AIDS epidemic has caused the blood bank to be inundated with a number of new test procedures, standards and regulations, all demanding some form of training. The Director of Government and Legal Affairs for the American Association of Blood Banks, the professional agency for blood banks, describes the changes.

In March 1985, the Food and Drug Administration (FDA) licensed the first human immunodeficiency virus (HIV) detection tests. In 1986 two other test were added - the alanine leucine transferase test (ALT) and the Hepatitis B core antibody (anti-HBc) test in order to reduce the incidence of non-A, non-B hepatitis. The human T-lymphocyte virus-1 (HTLV-1) test was introduced in 1988 and lastly the test to detect hepatitis C was licensed and added in the spring of 1990. (Rigney, 1990, pp. 375-376)

#### Limitations

The limitations of this study involve several factors.

1. The variation in educational attainment levels of the lab workers.
2. The variation in the professional level of the lab workers.
3. The survey was limited to two hospitals and one blood supply center which serve military and civilian population in the Hampton Roads area of Virginia.

### Assumptions

The basic assumptions related to this study were:

1. The lab workers' learning preferences were an expression of their interest in participation in organized instruction some time in the future.

This assumption was based on the logic that some personnel may or may not be currently involved in some form of organized instruction which may or may not be their learning method of choice.

2. An instrument (survey) can be devised which permits the subjects to report their preferred learning method accurately.

This assumption was based on the statement of authorities in education which observed errors and inadequacies of survey research based on choice of population, the selection of the sample, the design of the individual questions and the question as a whole, and the analysis of the resulting body of data.

(Trow, 1967 ).

3. The lab workers' preferences for learning methods were within the realm of the administrations capabilities for continuing education for that particular department.

### Procedures

Supervisors for blood bank laboratories were contacted in each of the three facilities previously mentioned. Information regarding the study was mailed to each of them along with questionnaires to be completed by all laboratorian. The completed questionnaires were collected and the data tabulated and analyzed.

### Definition of Terms

The following list of terminology and definitions are presented in order to provide clarity for the lay reader.

**Learning preference** - How an individual wants to learn; the instructional preference of an adult.

**Medical Technologist/technician (MT or MLT)** - individuals who have completed theoretical as well as clinical laboratory training in the areas of clinical chemistry, microbiology, hematology, serology, and blood bank.

**Blood bank technologist/technician** - In this study the name or title given to individuals MT or MLT who work exclusively in the area of blood banking.

**Continuing education** - post clinical training and education pertaining to a specialized area of the laboratory.

**Andragogy** - the theories and principles relating to the education of adults.

## Overview of Chapters

The blood bank profession has been presented with several developments over the recent years. Most of these challenges are related to the impact of the AIDS epidemic upon the blood supply made available to the public. New technology, new standards, and newly developed disease states have made the continuing education of the lab professional a priority. By determining the preferred learning methods of lab workers this study will contribute to the development of effective educational and training activities and materials.

The following chapter introduces previous background studies in recognition of various instructional learning methods preferred by health professionals as well as a report on educational interests of blood bank personnel.

## CHAPTER II

### REVIEW OF LITERATURE

In an effort to establish the significance of learning preference and to select critical research variables for this study a meticulous review of the literature was undertaken. An examination of the existing literature provided reports on 1) The integrity of The Rezler Learning Preference (LPI), the foremost instrument used to determine learning modes of health professionals and the model used in the construction of the research survey; 2) results of previous studies analyzing the learning preferences of health professionals and 3) the learning interest of blood bank personnel used to design a workshop based upon principles of adult education.

#### THE REZLER LEARNING PREFERENCE INVENTORY

Several studies have been done to try to determine preferred learning methods and learning interest among health professionals. Of particular interest to health care workers during the middle to late '70s was a learning preference inventory developed by two researchers in the field of education, A.Rezler and V.Rezmovic known as "The Rezler Learning Preference Inventory" (Rezler and Rezmovic,1981,p.28). Although developed in 1975 in order to identify modes of learning preferred by allied health professionals, the components of The Rezler Learning Preference Inventory (LPI) are applicable to today's population and relevant for the improvement of continuing education for the health professional.

Table 1 illustrates the six types of learning measured by the LPI.

Table 1

DESCRIPTION OF SIX TYPES OF LEARNING PREFERENCES  
FROM THE REZLER LPI

LEARNING TYPE	CHARACTERISTIC
<b>Abstract</b>	Preference for conceptual, theoretical type of learning; generating hypotheses, ideas.
<b>Concrete</b>	Preference for tangible, practical learning. Focus on learning practical tasks and skills.
<b>Teacher-Structured</b>	Preference for well-organized, teacher - structured learning.
<b>Student-Structured</b>	Preference for learning through student organized tasks.
<b>Interpersonal</b>	Preference for learning or working with others. Generally, classroom type learning or in groups or with others.
<b>Individual</b>	Preference for learning or working alone such as by reading.



The Rezler's instrument consisted of two sections, Part I and Part II. In Part I the respondents are asked firstly to rank six words all pertaining to the learning types listed in Table 1. Part II requires them to rank six sentences also pertaining to learning type and characteristics of those particular methods.

#### PREVIOUS STUDIES

The sample population to participate in the first study using The Rezler LPI were a group of allied health students (159), all female. The breakdown of their respective occupations is given in Table 2.

**Table 2**

**Occupations of the first sample population to take the Rezler LPI**

Medical Arts	15
Medical Dietetics	24
Medical Library Sciences	26
Medical Records Administration	20
Occupational Therapy	38
Physical Therapy	38
	----
Total Sample	159

The researchers discovered an interesting linkage between individual professions and their respective learning preference.

For example, 47% of the medical record students, who work mainly with concrete facts and are given specific directions, strongly prefer concrete tasks and show a tendency to stay away from abstractions and tasks requiring student-structure. Conversely, occupational therapists the most people oriented among the six professions have the highest percentage (31%) with a strong preference for interpersonal learning. Teacher-structured learning is strongly endorsed by students in all six professions than any other learning mode. (Rezler, 1981, p.32)

During the mid 1980's the Rezler LPI was again employed in a research study. This time the objective was to identify the learning preferences of pediatricians on three separate career paths, namely Academic Medicine, Practice and Research. One of the research goals in this investigation was to determine if a relationship existed between learning preference and an individual's area of professional concentration. Seven hundred-eighty-three pediatricians responded by completing the Rezler LPI. The data gathered and compiled form the study conducted by Children's Hospital National Medical Center and the George Washington University School of Medicine and Health Sciences in Washington, D.C. is illustrated in Table 3.

Table 3  
The Learning Preference of Pediatricians

Type of Learning	Academic (%)	Practice (%)	Research (%)
Abstract	31	17	61
Concrete	52	72	26
Teacher-Structured	25	39	9
Student-Structured	30	19	48
Interpersonal	21	16	9
Individual	35	22	52

Through this investigation it was confirmed that a link existed between a person's professional concentration and their learning preference.

Pediatric specialties in Academic Medicine and Practice highly favored concrete learning methods 52% and 72% respectively. Research pediatricians favored abstract approaches to learning situations accompanied by a high preference for Individual learning, (52%). Interestingly enough, the majority of pediatricians with research concentrations did not favor teacher-structured or interpersonal learning methods. Only 9% responded favorably those preferences. (Jewett, 1987, p.37).

Again, it would be demonstrated that a persons career choice is often characterized by their learning preference. To date however no study has been done which targeted clinical laboratory specialty areas (i.e., blood bank) in order to determine learning preferences and consequently established education goals that respond to specific learning likes and dislikes.

#### LEARNING INTEREST

A questionnaire surveying learning interest based on immunohematological topics were sent out to blood bank personnel in an effort to design a technical workshop that used element of andragogy (Beck, Brown, et. al., 1989, p.236). Respondents were asked to rank a series of possible topics for the workshop. Problem solving was the highest ranking topic followed by new developments in blood banking. A review of the literature did not yield a needs assessment or study asking blood bank personnel to rank a series of possible instructional methods continuing education programs."

In order to gain a better understanding or profile of a blood bank technician/technologist one should examine his or her job related responsibilities. Some of the major tasks of these workers are listed in Table 4.

Table 4

## DUTIES OF A BLOOD BANK TECH

<u>Professional Level</u>	<u>Tasks</u>
Technician/technologist	ABO and Rh typing of donor and patient specimens (determining the exact blood type).
Technician/technologist	Selecting type compatible units for transfusion to patients.
Technician/technologist	Detecting and identifying any antibodies which would cause clinical damage if transfusion occurs.
Technologist	Investigate the causes and effects of adverse transfusion reactions.
Technologist	Communicate the interpretation of laboratory findings to physicians, nurses, and patients.
Technologist	Educating and training students to perform laboratory procedures. Provide in-service training to physicians and fellow technicians and technologist.

While there is communication among laboratorian, supervisors and physicians, much of the "bench work" is performed independently and does not require direct contact with anyone while tests are being performed. Although each blood bank possess it own atmosphere, the purposes and functions of facilities are for the most part consistent among laboratories.

#### SUMMARY

In summary, The Rezler LPI was instrumental in obtaining learning interests of health care professionals including physicians. The six elements or parameters - abstract, concrete, teacher-structured, student-structured, interpersonal and individual learning help create a learning preference profile of the respondent. Each study noted the learning preference of participants were somewhat characteristic of an individual's career or professional concentration. Professional workshops for blood bank workers have been developed with the needs of the participants in mind, however, no study to date has been undertaken to discover the learning preferences of blood bank technologist or technicians.

The next chapter describes the method and procedure used in obtaining data from the three target facilities. By assessing and ascertaining the preferred methods of instruction of laboratory workers in the blood bank, education coordinators create effective and meaningful programs which do two things 1) Expand the knowledge base of the blood bank professional and 2) Maintain and improve competence.

### CHAPTER III

#### METHODS AND PROCEDURES

In order to determine the learning preference of blood bank technologist and technologist in the Hampton Roads area, a six (6) question questionnaire was designed. In this chapter, the population, questionnaire design, methods for collecting data, and procedures for analyzing the data are discussed.

#### POPULATION

The population consisted of medical technologist (four year college degrees) and medical technicians (two year college degrees) in three area facilities: Portsmouth Naval Hospitals, Sentara Norfolk General Hospital, and the Tidewater Chapter of the American Red Cross. A total of 27 people responded and completed the questionnaire. A list of each blood bank facility and their respective supervisors are documented in Appendix C.

#### INSTRUMENT DESIGN

In order to determine the learning preferences of blood bank technologist and technicians in the Hampton Roads area, a questionnaire was designed and administered to the workers in several laboratories. The questionnaire contained three sections. The first part was designed to gather information on the respondent's primary duties in the lab, level of educational

attainment, and type of national certification. The second part consisted of six statements related to learning. The statements were based upon the six type of learning categories described by Rezler; Abstract, Concrete, Teacher-Structured Learning, Student-Structured Learning, Interpersonal Learning, Individual Learning. The respondent was asked to read each statement and then mark a response according to the following key:

Not at all typical of me	- marked a	worth	<b>1 point</b>
Not very typical of me	- marked b	"	<b>2 points</b>
Somewhat typical of me	- marked c	"	<b>3 points</b>
Fairly typical of me	- marked d	"	<b>4 points</b>
Very much typical of me	- marked e	"	<b>5 points</b>

Each response was worth a specified number of points.

The respondent was to rate his or herself according to how well the statement describes them. At the end of the questionnaire the respondent was asked what type of continuing education program he or she would like to see in the Hampton Road's area.



#### METHODS FOR COLLECTING DATA

The questionnaires (see Appendix B), along with a cover letter explaining purpose of the study, (see Appendix A) were mailed to each blood bank supervisor who in turn administered the questionnaire to each worker. A copy of the questionnaire was left for the 3pm-11pm and the 11pm-7am shifts along with a cover letter explaining the purpose of the study.

#### ANALYSIS OF DATA

Upon receiving completed questionnaires, each one was scored according to the respondent's answer to each of the six statements - each one representative of a learning preference (see Appendix B). For example, the second statement reads, "I enjoy learning practical skills and tasks that I can put to use immediately or in the in the near future on my job." If the respondent marked "e"(very much typical of me) he\she received 5 points for that particular statement which incidently corresponds to the concrete form of learning. The number of points received for each learning category was totaled and recorded for all respondents. The results of the survey were tabulated and summarized. The findings of the study are presented in Chapter IV.

#### SUMMARY

This chapter presented the methods and procedures used to secure the data for this study. A questionnaire was presented to blood bank technologist and technicians in three Hampton Roads area facilities.

The findings of the questionnaire will be presented in the following chapter. Based on the findings, the learning preference of blood bank technologist and technicians in the Hampton Roads area will be determined.

## Chapter IV

### FINDINGS

This chapter presents the data collected in order to determine the learning preference of blood bank personnel. The supervisor of each target facility received a research packet which consisted of a cover letter and several three page questionnaires. The questionnaire attempted to ascertain the following information:

1. The primary responsibility of the respondent.
2. The highest educational degree attained by the respondent
3. The national professional certification attained by the respondent.
4. The learning method(s) favored or not favored by the respondent.
5. The specific continuing education desires of the respondent.

The total number of respondents from all three facilities were 27. The results of this section are illustrated in Table 5.

#### PRIMARY RESPONSIBILITY

The professional positions and duties varied among the respondents with the majority falling under the heading of medical technologist or technician. These participants (13) perform the majority of the "bench work" in the laboratory. Blood bank administrators (3) prepare budgets, oversee marketing and approve lab equipment and supplies. Section supervisors usually prepare

work assignments and schedules as well as hire personnel.

A total of 11 respondents come under this category. Only two of the individuals surveyed considered education of laboratory professionals and students to be their primary responsibility in the blood bank.

#### EDUCATIONAL ATTAINMENT

Six (6) respondents have completed the requirements for an associates degree. The majority of individuals have the bachelors degree (17). Four participants possess their masters degree.

#### NATIONAL CERTIFICATION

Certification is the process by which an individual's qualifications are recognized by a non-governmental organization or agency (Beck, 1988, 27). Although certification is a voluntary process, most clinical laboratory employees prefer to hire an individual who is certified or certifiable by a national agency. The most highly recognized agencies are The American Society of Clinical Pathologist and The National Certification Agency for Medical Laboratory Personnel.

Among the participants of this study 14, were medical technologist MT(ASCP) and 7 are medical lab technicians. Six (6) respondents were Specialist in Blood Banking and certified by The American Society of Clinical pathologist as SBB(ASCP). Several participants held more than one certification. (See Table 5)

### LEARNING PREFERENCE

The scores of each category of learning were tabulated for each individual. The results of all 27 respondents were tabulated to determine the most and the least preferred type of learning (See Table 6). From most favored to least favored they are concrete, abstract, teacher-structured, student-structured, individual and interpersonal. Sentara Norfolk General Hospital favored abstract and concrete equally (38). The least favored among all the facilities is the interpersonal or group learning methods of instruction.

### SUGGESTIONS FOR THE FUTURE

A total of 17 respondents answered the last question regarding future continuing education for blood bank technicians and technologist. Twelve (12) of the 17 stated that they would like to see a Specialist in Blood Banking Program instituted. Other suggestions were a Master's Degree program in immunohematology and technical wet workshops.

### SUMMARY

This chapter presented the data gathered through survey research in order to determine the learning preference of laboratory workers in Hampton Roads. Data was assessed and presented in narrative and table form. The conclusion and recommendations will be covered in Chapter V.

TABLE 5  
RESULTS OF PART I OF QUESTIONNAIRE

PRIMARY RESPONSIBILITY

Blood Bank Administration .....	3
Section Supervisors.....	11
Medical Technologist/Technicians .....	13
Education .....	2

EDUCATIONAL ATTAINMENT

Associates Degree .....	5
Bachelors Degree .....	18
Masters Degree .....	4
PhD .....	0

NATIONAL CERTIFICATION

MLT(ASCP) .....	7
MT(ASCP) .....	14
SBB(ASCP) .....	6
Military Trained .....	1

TABLE 6  
LEARNING PREFERENCE OF PARTICIPANTS

<u>LEARNING METHODS</u>	<u>SCORES</u>
<u>Abstract</u>	<u>115</u>
<u>Concrete</u>	<u>118</u>
<u>Teacher-Structured</u>	<u>83</u>
<u>Student-Structured</u>	<u>83</u>
<u>Individual</u>	<u>92</u>
<u>Interpersonal</u>	<u>71</u>

CHAPTER V  
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY

The problem of this study was to determine the preferred learning methods of adults who work in a blood bank in order to develop continuing education programs and increase participation in these programs. The research goals of this study were stated in the form of questions.

1. What is the most preferred method of continuing education among blood bank laboratory?
2. What is the least preferred method of education among blood bank laboratory?

A three part questionnaire was designed and modeled after the Rezler Learning Preference Inventory; an instrument used in obtaining learning preference of health care professionals. The research questionnaire gathered information on the respondent regarding:

- 1) primary job responsibility
- 2) educational attainment
- 3) national certification
- 4) learning preference and
- 5) suggestions for continuing education programs.



The survey was distributed to three blood bank facilities in the Hampton Roads area including, Sentara Norfolk Hospital, Portsmouth Naval Hospital and the Tidewater Chapter of the American Red Cross.

### CONCLUSIONS

The following conclusions were made based on the information gathered through the research questionnaire.

The most preferred method of continuing education among blood bank professionals is the concrete learning method. This type of learning focuses upon skills and practical tasks.

The least preferred method of continuing education among blood bank professionals is the interpersonal method. This type of learning focuses upon working with others in order to reach a common goal.

Because much of blood banking involves completing tasks which require manual dexterity along with a working knowledge of immunohematological principles and concepts, it is no wonder that the most preferred method of continuing education among blood bank workers surveyed would be concrete learning. As described earlier,

concrete methods involve learning tangible, practical tasks and skills. Incidentally, it is common among adults to favor continuing education activities that relate to their current occupations. (Cross, 1981, p.201)

Abstract learning, the preference conceptual theoretical type learning was the second highest favored method of learning. Problem solving tasks are a major component of blood banking. An example of a problem solving task is resolving an ABO discrepancy. A patient may have a previous history as being O positive yet another more recent grouping turns up as A positive. This is known as an ABO discrepancy and can be serological in nature (due to the immunologic composition of either the previous or current sample) The discrepancy may be attributed to a clerical error on the part of the laboratorian. In any case, the technologist or technician must be prepared intellectually and technically to meet these types of challenges. It would therefore stand to reason that abstract learning would also be highly favored among technologists and technicians.

Most blood banks operate by designating assignment stations to each technologist or technician. For instance, ABO and Rh typing, compatibility testing may be performed at a station by an assigned technician, while antibody identification and cord bloods are done at another station in the same laboratory. This type of set up limits the amount of interpersonal communication in the lab

while one is completing his or her assigned task. Therefore it is no surprise that the least preferred method of learning among the target population happens to be interpersonal or group learning.

### Recommendations

Many technologists suggested a Specialist in Blood Banking (SBB) Program be reintroduced to the Hampton Roads area. The American Red Cross discontinued one such program during the late 1980's due to lack of sufficient funding. Nationally, there has been a "dramatic decrease", of this form of education. The number of SBB programs went from 56 and 142 graduates in 1980 to 34 programs and 48 graduates in 1989. (Karni, 1991, p.290) Essentially 12 months are devoted to rotating through all departments of a blood bank which include: donor and patient services and laboratory management, education, etc. At the completion of training the participant is eligible to take a national certification examination. Teaching is based on practical, everyday experiences in respective departments.

An SBB program is a costly endeavor on both the student and the host institution. Some hospital based programs (e.g. John Hopkins University in Baltimore, Maryland) offer students the salary of a starting technologist - \$22-23,000. Michael L. Baldwin (personal communication, May 22, 1990) This is a decrease in income for anyone who has been in the field for a substantial amount of

time. One suggestion would be to form a university based program in cooperation with blood bank facilities such as the ones who participated in this study. That way costs are shared between institutions thus helping to ensure the longevity of the program. Those persons desiring masters degree may matriculate through the university and pay tuition costs.

This study took an diagnostic approach in determining the continuing education needs of the blood bank professional. A competent, well informed technologist\technician is not only a laboratory's most valuable asset but also serves as a health guardian of blood and other life saving components in a generation that is under constant threat by the transmission of disease.

## BIBLIOGRAPHY

- American Society of Clinical Pathologist. (1989). Careers in Medical Laboratory Technology. Chicago: ASCP.
- Beck, Susan J. and Vicky A. Legrys. (1988). Clinical Laboratory Education. Norwalk, CT: Appleton & Lange.
- Cross, Patricia K. (1990). Adults As Learners. San Francisco: Jossey-Bass.
- Hardman, J.T., Kowalski, M.A., Brown, P.J., Hardman, P.K., & Beck, M. (1989). Andragogical Model for Technical Workshop. Clinical Laboratory Science, 2, 235-239.
- Jewett, L.S., Greenberg, L.W., Leibowitz, Z.B., Einhorn, A.H., & Cohen, L.F. (1987). Learning Preference In Academic Medicine, Practice and Research Career Paths. Proceedings of the 26th Annual Conference on Research in Medical Education, 34-39.
- Karni, Karen R. (1991). Educating Medical Technologist To Minimize Errors in Blood Banking. Transfusion, 31, 290-292.
- Knowles, Malcolm S. (1990). Andragogy In Action. San Francisco: Jossey-Bass.
- Rezler, Agnes R. and Rezmovic, V. (1981). The Learning Preference Inventory. Journal of Allied Health, 10, 28-34.
- Rigney, Robert P. (1990). Blood Banking and the Regulatory Environment in the 1990's. Clinical Laboratory Science, 3, 375-378.
- Trow, M. (1967). Education and Survey Research in Research In Education. New York: Harcourt, Brace, Jovanovich.
- Widmann, Frances K. (1985). Technical Manual. Arlington, VA: American Association of Blood Banks.

APPENDIX A



June 1, 1992

Dear Supervisor:

I am currently a master of science candidate in the College of Education at Old Dominion University and am working on a project dealing with medical technologists. The purpose of my study is to assist clinical laboratory educators in developing continuing education programs for the health professional that provide maximum benefits to its participants.

Office of the Dean  
804-683-1960

Community Health  
Education  
683-4109

Cytotechnology  
683-3589

Dental Assisting  
683-4310

Dental Hygiene  
683-4310

Environmental Health  
683-3611

Gerontology  
683-4409

Histotechnology  
683-3589

Medical Technology  
683-3589

Nuclear Medicine  
Technology  
683-3589

Nursing  
683-4297

Ophthalmic Technology  
628-2100

Physical Therapy  
683-4519

Ph.D. Health  
Services  
683-4259

Professional  
Continuing  
Education  
683-4256

I am asking you to have each of the technologist/technicians you supervise complete the enclosed questionnaire during the course his or her assigned shift and return the completed form to you. I will in turn pick up the completed forms at a later date.

Your institution will be identified in the study however the name of your technologists/technicians will not be. Under no circumstances will the identity of participants be revealed.

I deeply appreciate your cooperation and support of you and your staff. This research project will hopefully shed light on the improvement of continuing education activities developed for the health care professional. When the study is completed I will provide you with a description of the results.

If you have any further questions please feel free to call me at 420-7924.

Sincerely,

Tracey T. Skeete

Encl./ts

**LEARNING PREFERENCE FOR CONTINUING EDUCATION SURVEY**

You have been selected to participate in a survey design to determine the type of educational activities that are most/least preferred by technologist/technicians who work in a blood bank. Please take a moment to complete this questionnaire and return to it your supervisor as soon as possible. Your cooperation is greatly appreciated. Thank you in advance for your prompt reply.

## 1. Primary responsibility - check one

- a. ☐ Blood Bank Administration
- b. ☐ Section Supervisor
- c. ☐ Medical Technologist/Technician
- d. ☐ Education/Teaching

## 2. Degrees - Check highest degree attained and specify major concentration

- a. ☐ PhD \_\_\_\_\_
- b. ☐ MA/MS \_\_\_\_\_
- c. ☐ BA/BS \_\_\_\_\_
- d. ☐ AA/AS \_\_\_\_\_

## 3. Certification

- a. ☐ MT(ASCP)
- b. ☐ MT(ASCP)BB
- c. ☐ BB(ASCP)
- d. ☐ MT(ASCP)SBB
- e. ☐ Other

Please rank the following statements concerning learning methods according to the following scale:

- a. Not at all typical of me (This statement would be true of you in rare instances)
- b. Not very typical of me (This statement would not be true of you)
- c. Somewhat typical of me (This statement would be true of your about half the time)
- d. Fairly typical of me (This statement is generally true of you)
- e. very much typical of me (This statement is would be true of you most of the time)

Please circle the appropriate letter following each statement.

1. When I attend workshops or seminars, I enjoy hearing about new concepts and theories in blood banking.

a b c d e

2. I enjoy learning practical skills and tasks that I can put to use immediately or in the near future on my job.

a b c d e

3. My favorite learning environments are those where the instructor does the majority of the of the teaching (eg. lectures, shows videotapes, demonstrations etc.)

a b c d e

4. I enjoy being assigned a topic or subject and designing my own learning project by researching of a particular area of interest. (ie., reading a textbook or self-instructional packet)

a b c d e

5. I prefer to work alone on learning activities and/or tasks that are assigned to me.

a b c d e

6. I prefer to work within a group when I am assigned to do a task or project (ie., An in-service training session or proficiency test)

a b c d e



7. What types of educational programs (SBB, Masters in immunohematology) would you like to see instituted in the Hampton Roads area?

**Facility**

Portsmouth Naval Hospital  
Sentara Norfolk General  
Tidewater Chapter of the  
American Red Cross

**Supervisor**

Deborah Harrell  
Nora Leonard  
Page Gambill