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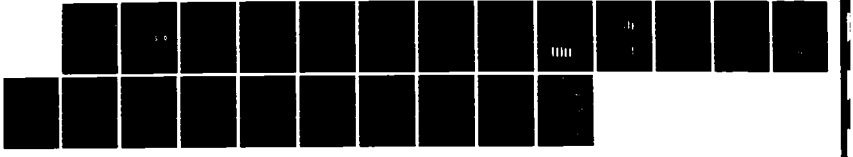

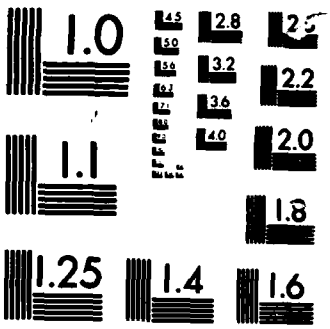

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THE SHIPBOARD INDEPENDENT DUTY HOSPITAL CORPSMAN I: ADVANCE HOSPITAL CORPS SCHOOL ATTITUDES AND PERCEPTIONS

T. F. HILTON

REPORT NO. 86-4

NAVAL HEALTH RESEARCH CENTER
P.O. BOX 85122
SAN DIEGO, CALIFORNIA 92138-9174

NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND
BETHESDA, MARYLAND

The Shipboard Independent Duty Hospital Corpsman I:

Advance Hospital Corps School Attitudes and Perceptions

LT Thomas F. Hilton, MSC, USN

Naval Health Research Center
San Diego, California

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The Shipboard Independent Duty Hospital Corpsman I:

Advance Hospital Corps School Attitudes and Perceptions

Summary

This study examined the quality of the training and curriculum of Advanced Hospital Corps School (AHCS) as part of a larger study of the training and effectiveness of Shipboard Independent Duty Hospital Corpsmen (IDCs). During the Spring of 1984, a survey of instructor and student training program attitudes and perceptions was conducted at the three AHCSs where IDCs are trained. This survey addressed perceptions of the content relevance of the IDC curriculum, the adequacy of classroom and practical training, and attitudes toward various qualitative aspects of the training environment (learning atmosphere).

It must be noted that the curriculum at all three schools studied is under constant revision to meet the changing needs of the Fleet. This report acknowledges that it addresses a "moving target," and has attempted to focus on aspects of the program that are relatively enduring, such as student reactions to topical relevance, impressions of training adequacy, and attitudes toward the quality of the learning environment provided by each school.

As a whole, results indicated that both instructors and students viewed the curriculum to be generally above average in relevance, and both classroom and practical training was evaluated to be adequate. The learning atmosphere was rated, on the whole, as being highly structured and not very open to student input. These atmosphere ratings correlated negatively with training-related satisfaction, Navy job satisfaction, and intent to remain in the Navy. Overall results suggest that the task-training interface was good; however, a few areas for improvements were identified.

In order to foster an increase in the psychological involvement of students, revision of the current IDC training program structure was recommended. Revision efforts might focus on ways to permit instructors increased latitude in how material is presented, and how student performance feedback is provided prior to examinations (e.g., quizzes, presentations, term papers, etc.).

The Shipboard Independent Duty Hospital Corpsman I: Advance Hospital Corps School Attitudes and Perceptions

In 1983, the Navy embarked on an in-depth study to examine the training and effectiveness of shipboard Independent Duty Hospital Corpsmen (IDCs). As one element of that larger study, a school-based survey was designed to augment information collected from IDCs in the Fleet operating forces. The instructors and students assigned to all three occupational training facilities for IDCs were surveyed in the Spring of 1984. That survey addressed three primary areas: perceptions of the relevance of the curriculum, perceptions of the quality of the occupational training environment, and overall satisfaction with IDC training and with the occupation of Navy Corpsman.

BACKGROUND

The IDC corpsman is typically the sole provider of health services for approximately two-thirds of Navy ships when they put to sea. He is responsible for the treatment of illness and injury for as many as 300 or more crew members. He administers the ship's occupational health and preventive medicine programs, maintains the crew's health records, and submits reports of medical incidents to higher authority.

Because of the complexity and scope of responsibilities that IDCs currently must undertake, it is reasonable to inquire as to whether or not the Navy is providing occupational training that is both relevant and adequate to the demands of the job. In addition, because occupational training currently extends for up to 12 months, it would be useful to determine whether or not the training environment provided by the schools is maximally conducive to the effective acquisition of requisite medical skills and knowledge. A school-based survey was chosen as one method for addressing such issues.

Factors Affecting the Quality of Occupational Training

There are several factors likely to influence the quality of occupational training. One is the degree of task-training interface from the perspective of experienced subject matter experts. Another factor is the students' perceptions and beliefs about the occupational training program and its content. Although students lack a job-relevant experience base, their perceptions might effect their receptiveness to the training provided. Such perceptions and beliefs extend not only to the perceived relevance and adequacy of the curriculum, but to the classroom environment as well.

Training Relevance and Adequacy. Educational research has suggested that if students do not view their training as relevant to their occupational goals, motivation to learn and classroom attention can be adversely affected (Blum & Naylor, 1968; Hinrichs, 1970). Moreover, if the curriculum is, in fact, irrelevant or inadequate to enable topic mastery, graduates will be unprepared to perform the duties of their assigned jobs. One way to assess the question of relevance and adequacy is to compare ratings from subject matter experts with ratings from students enrolled in IDC training (Bownas, Bosshardt and Donnelly, 1985).[1] Those teaching at the three IDC schools, having successfully performed IDC duties aboard ship, comprise a group of experienced experts.

Quality of the Occupational Training Environment. Even if an occupational training program provides relevant training, and in adequate amounts, acquisition and retention of skills and knowledge may be influenced by the psychosocial characteristics of the training environment (Fraser

& Walberg, 1981; Moos, 1979a; Walberg 1969). Psychosocial characteristics refer to qualitative aspects of the learning environment such as innovativeness of classroom presentations, instructor-student relations, and the quality of learning resources. One of the more popular methods for the assessment of occupational training environments involves comparisons of instructor and student perceptions of the psychosocial atmosphere of the school (Moos, 1979b).

Occupational Training and Occupational Satisfaction. Expectancy theory has suggested that motivation to excel in job-related tasks may also be linked to occupational satisfaction (e.g., Vroom, 1964). One might conclude from expectancy theory that the more satisfied an individual is with his or her job; the better the acquisition and retention of occupational skills and knowledge related to that job; and the greater the likelihood that trainees will choose to remain in that job.

Study Goals

The goals of the present study were (a) to appraise the relevance and adequacy of the IDC curriculum, (b) to examine the degree to which the training environment was conducive to the acquisition and retention of requisite IDC job skills and knowledge, and (c) to determine the impact of occupational training-related variables on satisfaction, career goals, and Navy career retention.

To assess the relevance and adequacy of IDC training, instructor ratings served as a comparison reference for trainee evaluations. Either the presence of significant divergence between instructor and student ratings of curriculum relevance or adequacy, or convergence on negative ratings would be indicative of possible training program trouble spots.

Regardless of curriculum ratings, the atmosphere or climate of the occupational training environment for facilitating the learning process might vary from school to school. Therefore, this study attempted to ascertain the degree to which each school was perceived as providing a facilitative learning atmosphere. The impact of learning climate on satisfaction with both the content and quality of training, as well as Navy job satisfaction and career intentions were examined. In addition, the relationship between job satisfaction, training satisfaction, and intent to remain in the Navy were examined.

METHODS

Subjects

Subjects consisted of 36 instructors and 171 students assigned to one of three IDC occupational training programs: (a) The Naval Undersea Medical Institute (NUMI), Groton, CT, (b) Advanced Hospital Corps School (AHCS), San Diego, and (c) AHCS, Portsmouth, VA. Participation was voluntary and anonymous. Student participation overall was 82%, and instructor participation was 68%. Both instructors and students were provided time during the work day to participate. Surveys were completed in lecture rooms. Students at NUMI had all graduated from either the San Diego or Portsmouth programs as a prerequisite to specialized training for submarine duty.

Instruments

Occupational Training Curriculum Ratings. A list of 46 distinct curriculum elements were extracted from the lesson plans of all three IDC schools. Each element was validated through interviews with various key staff members at each of the three schools. Instructor and student respondents were asked to rate, on a five point Likert-type scale, their perceptions of each curriculum element with regard to (a) relevance for occupational success, (b) adequacy of the classroom

training, and (c) the adequacy of the practical or laboratory training provided. Students were instructed to skip curriculum dimensions to which they had not yet been exposed.

Occupational Training Climate. Occupational training climate differs somewhat in a conceptual sense from the learning climate of educational settings in that occupational training programs tend to be more job-specific, of shorter duration, and tend to be more structured in content than most education programs (Belitsky, 1969). Because no acceptable measure of occupational training climate could be found, training atmosphere was measured using scales, presented on Table 1, taken from two learning climate questionnaires that were relatively task-specific in their curriculum. Physical resources and patterns of interaction were taken from a questionnaire developed for use in professional schools of business by Bowen and Kilmann (1975). Norms and value scales were taken from a survey published by Siegel and Kaemmerer (1978), which has been more recently used in educational settings for health professionals.[2] Individual characteristics consisted of demographic self reports.

Table 1

Description of Scales Included in The Occupational Training Climate Questionnaire

Scale Name (description)		# Items	Alpha
	(Bowen & Kilmann, 1975)		
Physical Resources			
Physical Resources	(class size, space, audio-visual aids, lounges, etc.)	7	.81
Interaction			
Training Influence	(time spent on topics, method of presentation, etc.)	4	.82
Grading Influence	(time for tests, qualitative evaluation, etc.)	4	.85
Instructor-Student Interaction	(availability to students, respect for students, etc.)	7	.81
	(Siegel & Kaemmerer, 1978)		
Norms			
Rigidity	(tolerance for diversity, organizational flexibility)	6	.75
Procedure-Goal Consistency	(interface between goals and methods of attainment)	6	.75
Values			
School Identification	(sense of commitment, pride of association with program)	8	.79
Innovativeness	(emphasis on improving content and methods)	7	.75

Instructor-student interaction items taken from two of the Bowen and Kilmann scales (task-related and social interaction) were selectively combined, because the Navy's occupational training programs do not sponsor extra-curricular activities in the traditional sense. Responses consisted of one of three five-point Likert-type scales as appropriate to each item stem. These ratings addressed either the degree of agreement, the extent of one's influence, or the degree to which physical resources or instructor interactions were obstacles to maximally effective learning.

Satisfaction and Career Intentions. Several types of satisfaction were measured. Satisfaction with the training program was based on 6 items suggested by Bowen and Kilman (Alpha=.75). Overall satisfaction with the training institution was based on 6 items created for this study (Alpha=.79), and Navy job satisfaction was measured using 19 items developed for use in Navy settings (Jones, James, Bruni & Sells, 1977; Alpha =.76). Career intentions were measured in two ways. Reenlistment intention was measured by a single item rating the likelihood of remaining in the Navy until retirement. Occupational goal emphasis was measured by asking respondents to check whether they intended to remain in the corpsman community following IDC duty, or hoped to pursue one of five other general options which normally involved commissioned status.

Analysis

Occupational Training Relevance and Adequacy. The relevance and adequacy of the curriculum were determined on the basis of mean scale scores for each dimension measured. Criteria consisted of scales created on the basis of a components analysis of the ratings of the relevance of training for the combined instructor and student samples. Scale scores were created using the mean of the items associated with each factor having an eigenvalue greater than one. Items with split loadings were placed in the factor that permitted best interpretability. Items falling into the scree were excluded from final scores. Between-school differences in curriculum ratings were tested using two-way multivariate analysis of variance (MANOVA) to examine effects for status (student-instructor), school (San Diego, Portsmouth, and Groton/NUMI), and status by school interaction for each set of criteria.

Quality of Occupational Training Environment. The degree to which the training atmosphere was viewed by respondents to be conducive to learning was assessed by inspection of mean scale scores. Between-school differences were examined using multivariate discriminant analysis (MDA). Anderson (1982) points out in her review of the learning climate literature that there has been debate regarding whether or not climate should be defined on the basis of status (instructor-student), however Moos (1979a) has argued that both agreeing and conflicting perceptions can provide useful information about organizational goal attainment. Because both instructors and students are corpsmen in the Navy, and differ primarily in age and degree of job experience, it was anticipated that climate perceptions would not be influenced by status. Instructor-student differences were tested using one-way ANOVA. For cases in which no status differences were found, both groups were combined, and MDA were run to examine for between-school differences. In event of significant univariate instructor-student differences, data were analyzed using a status by school (2 X 3) MANOVA. Lastly, any significant climate differences found to exist between schools were further examined using correlations between climate factors and several variables tapping satisfaction and reenlistment.

Occupational Training and Occupational Satisfaction. Using multiple linear regression, both satisfaction with training factors and with the Navy were used to predict not only intention to stay in the Navy (retention), but future career goal emphasis as well.

RESULTS

Occupational Training Relevance and Adequacy

Principal components analysis of the combined instructor and student relevance ratings of the 46 curriculum elements yielded five interpretable factors with an eigenvalue greater than 1.0.

Items with split loadings were placed in the factor that permitted best interpretability. Six items fell into the scree and were excluded from analyses. The final scales were: (a) patient care (14 items), (b) programs/general administration (10 items), (c) preventive medicine (8 items), (d) radiation health (4 items), and (e) records (4 items). Table 2 presents a list of curriculum elements included in the computation of mean scale scores.

Table 2

List of Variables Comprising Curriculum Scales Scores

Patient Care:	**Programs/General Administration:**	**Preventive Medicine:**
Anatomy & Physiology	Responsibilities of IDC	Entomology & Pest Control
Physical Examinations	Communications	External Resources (clinics)
Medical Interview & History	Inspections of Med. Dept.	Principles of Health Education
Dermatology/Skin Disorders	Fiscal (AMAL, OPTAR, etc)	Preventive Medicine
Neurological Disorders	Inventory Management	Food Sanitation
Musculoskeletal Disorders	Equipment Management	Potable Water
Mental Disorders	The 3-M System	Waste & Sewage
Infectious Disorders	Industrial Hygiene & NAVOSH	Shipboard Organization
Gastrointestinal Disorders	MEDEVAC Procedures	
ENT Disorders	NBC Warfare	
Treatment of Wounds		
Principles of Pharmacology	**Records:**	**Radiation Health:**
Flight Physiology		
Laboratory Procedures	Health Records	Radiation Biology
	Service Records	Radiation Fundamentals
	Training Record	Radiation Health Program
	Department Logs	Atmosphere Control

Aggregate Curriculum. Figure 1 presents a plot of the mean scale scores for both instructor and student ratings of the overall relevance of the five curriculum areas. Student curriculum ratings fell generally in the "very relevant" category (3.0 being "Relevant" and 5.0 being "Extremely Relevant"). It is unlikely, therefore, that classroom attention would be adversely affected by any beliefs that the material was irrelevant to the job of IDC corpsman. Furthermore,

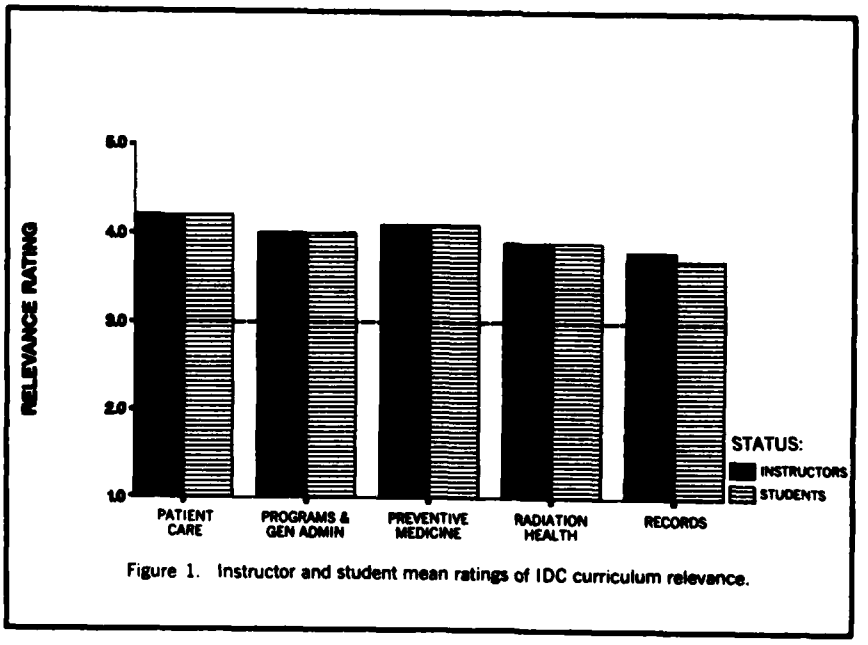

Figure 1. Instructor and student mean ratings of IDC curriculum relevance.

the fact that subject matter experts (instructors) rated the curriculum as very relevant provides support for a conclusion that the curriculum is, in fact, relevant.

Figure 2 presents the mean instructor and student ratings of the adequacy of the classroom training, and Figure 3 presents the adequacy ratings for practical training for each of the five curriculum areas. Both the instructors and students rated the curriculum to be adequate.

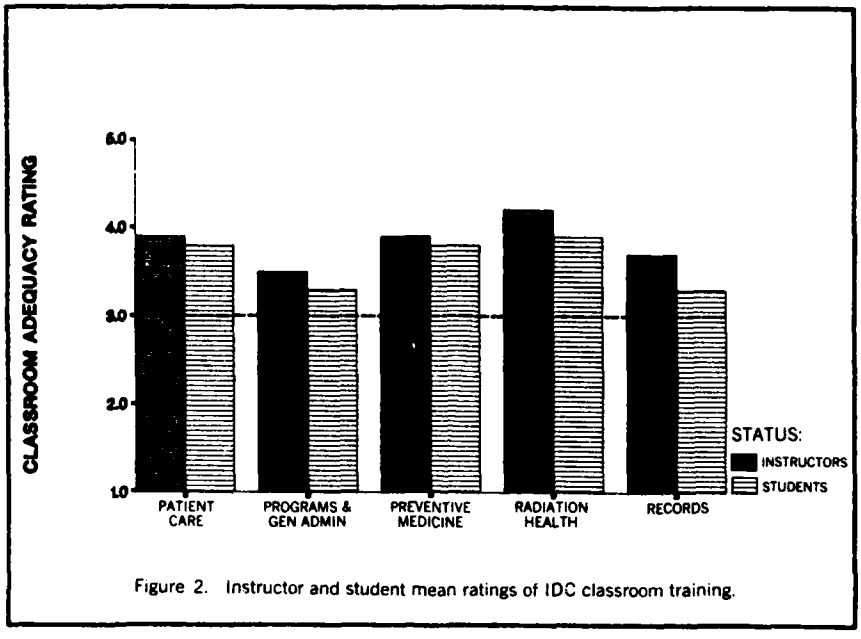

Figure 2. Instructor and student mean ratings of IDC classroom training.

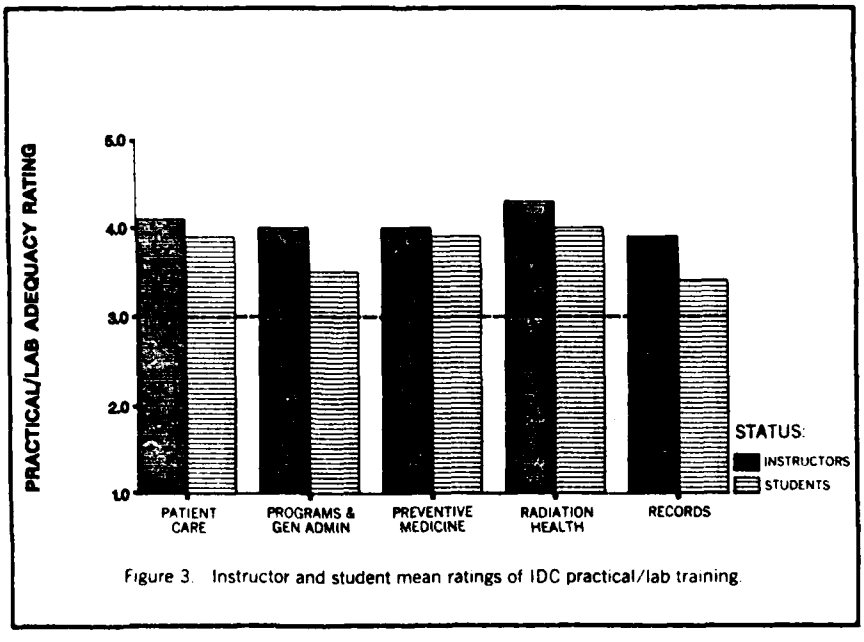

Figure 3. Instructor and student mean ratings of IDC practical/lab training.

Although Figures 1 through 3 reflect that, in the aggregate, training was viewed as both adequate and very relevant, some schools were seen as being relatively stronger or weaker in certain areas. The results of the MANOVA examining between-school differences in ratings of the relevance of the curriculum are presented in Table 3.

Table 3

Multivariate Analysis of Variance of Relevance Ratings of the IDC Training Curriculum

Multivariate Summary Table

Effect	Wilks Lambda	Degrees Freedom	F-Ratio	(Probability)
Status	.9793	5,180	0.762	(.578)
School	.7557	**10,360**	**5.413**	**(.000)**
Status X School	.9029	10,360	1.890	(.046)

Univariate Summary Table F-Ratio (Probability)

Effect	Degrees Freedom	Patcare	Prog/Adm	Prevmed	Radhlth	Records
Status	1	0.034(.854)	0.630(.428)	0.081(.776)	0.187(.666)	0.323(.571)
School	2	1.358(.260)	**10.197(.000)**	**3.173(.044)**	3.326(.101)	**3.273(.040)**
Status X School	2	0.946(.390)	3.682(.027)	3.402(.035)	0.699(.498)	0.038(.963)
(Error)	184					

Mean Scores

Variables	Students S.D. Mean	Students PORT Mean	Students NUMI Mean	Instructors S.D. Mean	Instructors PORT Mean	Instructors NUMI Mean	Combined S.D. Mean	Combined PORT Mean	Combined NUMI Mean
Patient Care	4.21	4.36	4.27	4.44	4.43	4.07	4.32	4.39	4.17
Programs/Admin	4.05	4.25	3.90	4.32	4.36	3.45	4.18	4.30	**3.67**
Preventive Med	4.19	4.20	4.05	4.72	4.28	3.76	**4.45**	4.24	3.91
Radiation Hlth	3.83	4.00	4.30	4.04	4.06	4.02	3.93	4.03	4.17
Records	3.69	3.81	3.37	3.77	3.98	3.57	3.73	3.89	**3.47**
(N of Ss)	(70)	(65)	(24)	(08)	(12)	(11)	(78)	(77)	(35)

Note: Bold type highlights significant multivariate or univariate effects.

Between-School Curriculum Relevance. The multivariate data summary in Table 3 shows no significant differences in ratings of curriculum relevance due to instructor-student status, therefore, interpretation of univariate status effects was not warranted. There was, however, a significant between-school effect. Inspection of the univariate data summary for combined status (instructor and student) shows between-school differences in the perceived relevance of (a) programs/general administration, (b) preventive medicine, and (c) records. Examination of the bold-faced mean breakdown of the combined instructor and student scores, when compared to both instructor and student perceptions at the other two schools, indicates that NUMI placed significantly lower relevance on programs/general administration, as well as medical department records. Furthermore, the San Diego program was perceived as placing significantly higher relevance on preventive medicine than those the other schools.

Between-School Classroom Training Adequacy. Table 4 presents the results of the MANOVA examining between-school differences in instructor and student ratings of the adequacy of the classroom training. The multivariate data summary again reflects only a significant between-schools effect. Inspection of the univariate mean data summary for combined status ratings shows between-school differences in classroom presentation of all curriculum areas except radiation health.

Examination of the bold-faced mean breakdown combined for status reflects that the NUMI instructors and students perceived their classroom training in medical department records to be significantly less adequate than at the other two schools. Remaining differences show that Portsmouth ratings were significantly higher than either San Diego or NUMI on adequacy of classroom training in patient care, programs/general administration, and preventive medicine.

Table 4

Multivariate Analysis of Variance of Ratings of the Adequacy of IDC Classroom Training

Multivariate Summary Table

Effect	Wilks Lambda	Degrees Freedom	F-Ratio	(Probability)
Status	.9355	5,111	1.531	(.186)
School	**.4576**	**10,222**	**10.616**	**(.000)**
Status X School	.8534	10,222	1.760	(.069)

Univariate Summary Table F-Ratio (Probability)

Effect	Degrees Freedom	Patcare	Prog/Adm	Prevmed	Radhlth	Records
Status	1	1.39(.241)	4.42(.038)	0.65(.421)	4.56(.035)	0.48(.490)
School	**2**	**17.10(.000)**	**23.32(.000)**	**4.78(.010)**	0.93(.397)	**3.93(.022)**
Status X School	2	0.55(.576)	3.28(.041)	2.29(.106)	0.78(.463)	0.04(.960)
(Error)	115					

Mean Scores

Variables	Students S.D. Mean	Students PORT Mean	Students NUMI Mean	Instructors S.D. Mean	Instructors PORT Mean	Instructors NUMI Mean	Combined S.D. Mean	Combined PORT Mean	Combined NUMI Mean
Patient Care	3.74	4.14	3.41	3.91	4.51	3.45	3.76	**4.32**	3.43
Programs/Admin	2.97	2.92	3.09	3.79	4.40	2.88	3.38	**4.15**	2.99
Preventive Med	3.71	4.01	3.72	4.13	4.43	3.40	3.91	**4.21**	3.56
Radiation Hlth	3.81	3.93	3.93	3.76	4.35	4.50	3.80	4.14	4.22
Records	3.74	3.88	3.31	3.86	4.05	3.57	3.80	3.97	**3.44**
(N of Ss)	(42)	(30)	(22)	(06)	(10)	(11)	(48)	(40)	(33)

Note: Bold type highlights significant multivariate or univariate effects.

Between-School Practical Training Adequacy. Table 5 presents the results of the MANOVA examining between-school differences in instructor and student ratings of the adequacy of the practical/lab training. Again, the multivariate data summary reflects a significant effect only between-schools. The univariate data summary shows between-school differences for practical training in all curriculum areas except radiation health. Examination of the bold-faced mean breakdown by school combined for status reflects that the NUMI curriculum was perceived by both instructors and students as providing less adequate practical training in medical department records than the other two schools, as well as less adequacy in preventive medicine. Remaining differences again show that Portsmouth ratings were significantly higher than both San Diego and NUMI on adequacy of practical training in patient care and programs/general administration.

Quality of Occupational Training Environment

A graphic display of the mean climate scores for the occupational training environment of the three schools is presented in Figure 4. As can be seen, all the schools were generally rated in the "average" range for most climate dimensions measured. All three schools were characterized as somewhat low in student influence, and somewhat high in quality of physical resources.

Table 5

Multivariate Analysis of Variance of Ratings of the Adequacy of IDC Practical Training

Multivariate Summary Table

Effect	Wilks Lambda	Degrees Freedom	F-Ratio	(Probability)
Status	.9362	5,99	1.349	(.250)
School	**.7274**	**10,198**	**3.415**	**(.000)**
Status X School	.9330	10,198	0.699	(.725)

Univariate Summary Table F-Ratio (Probability)

Effect	Degrees Freedom	Patcare	Prog/Adm	Prevmed	Radhlth	Records
Status	1	3.22(.076)	4.06(.046)	1.00(.319)	1.76(.188)	0.40(.528)
School	**2**	**4.95(.009)**	**6.57(.002)**	**4.74(.011)**	1.97(.144)	**3.57(.031)**
Status X School	2	0.49(.616)	0.47(.625)	0.17(.844)	0.90(.409)	0.16(.854)
(Error)	103					

Mean Scores

	Students			Instructors			Combined		
Variables	S.D. Mean	PORT Mean	NUMI Mean	S.D. Mean	PORT Mean	NUMI Mean	S.D. Mean	PORT Mean	NUMI Mean
Patient Care	3.81	4.03	3.19	3.87	4.51	3.86	3.84	**4.27**	3.52
Programs/Admin	3.26	4.05	2.91	3.80	4.21	3.64	3.53	**4.13**	3.27
Preventive Med	3.88	3.89	3.19	3.96	4.31	3.58	3.92	4.09	**3.39**
Radiation Hlth	4.00	4.27	3.42	3.87	4.55	4.32	3.94	4.41	3.86
Records	3.80	3.83	3.31	3.78	4.05	3.57	3.79	3.93	**3.44**
(N of Ss)	(38)	(23)	(22)	(05)	(10)	(11)	(43)	(33)	(33)

Note: Bold type highlights significant multivariate or univariate effects.

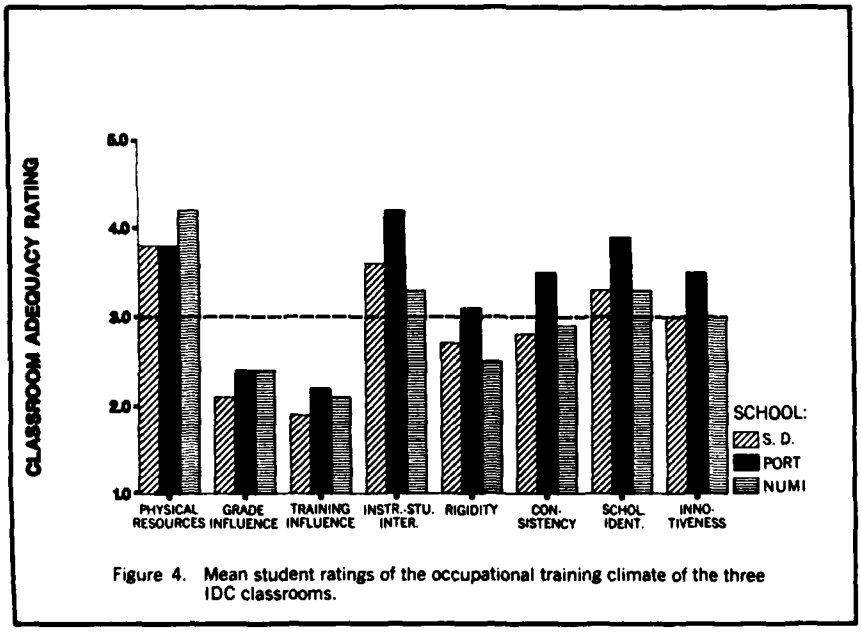

Figure 4. Mean student ratings of the occupational training climate of the three IDC classrooms.

One-way ANOVAs run on the eight climate scores indicated that there were no significant instructor-student status differences. Consequently, an MDA was run on the eight learning climate scores using simultaneous variable entry to examine between-school differences. Significant between-school differences were indicated by a significant single characteristic root which accounted for a substantial 42% of the between-group variance. The second root was not significant, indicating that one school tended to stand out as differing significantly from the other two.

A summary of the climate score MDA presented in Table 6 lists in descending order of between-group magnitude the mean scale scores separated by the weights of the two discriminant vectors (characteristic roots). Based on the univariate significance levels associated with the between-school mean scores, only the top four weights in the significant vector (bold-faced) merit interpretation (Kerlinger and Pedhazur, 1973; Spector, 1977). These weights correspond to school identification, followed by instructor-student relations, innovativeness, and rigidity.

Table 6

Multiple Discriminant Analysis of IDC Student Climate Perceptions

	Schools						
	S.D. Mean	Wt.	NUMI Mean	Wt.	POR Mean	1-Way F	Sig.
School Ident	3.3	.47	3.3	**.70**	3.9	25.65	.000
Stu-Inst Relations	3.5	.11	3.3	**.61**	4.2	18.88	.000
Innovativeness	3.0	.39	3.0	**.50**	3.5	13.20	.000
Rigidity	3.6	.10	3.5	**.45**	3.0	10.16	.000
Consistency of Policy	2.8	.64	3.5	.61	2.9	21.38	.000
Physical Resources	3.8	.57	4.2	-.16	3.8	3.45	.034
Student Influ. Curriculum	2.1	.41	2.3	.10	2.3	1.65	[ns]
Student Influ. Grades	1.8	.37	2.1	.16	2.2	2.15	[ns]

Eigenvalue: 1st Root = .60, R_c=.61, Eta^2 = .42, Chi-squared (16) = 88.22 $p<.000$

2nd Root = .08, R_c=.27, Eta^2 = .08, Chi-squared (7) = 12.43 [ns]

Note: Bold type highlights interpretable weights.

As can be seen, both the San Diego and Groton (NUMI) schools did not differ from each other in climate, but they did differ from Portsmouth. The primary climate difference that distinguished Portsmouth from the others was stronger identification with the school, better instructor-student relations, a more innovative educational philosophy, and a less rigid approach to training.

Finally, even though between-school learning climate differences were found to exist, it was still necessary to demonstrate that climate related to relevant outcome measures. Table 7 presents correlations between climate and students' career-related and training-related outcomes. As can be seen, most of the correlations between learning climate scores and criteria measures were statistically significant, thereby supporting the contention that learning climate was related significantly to student outcomes.

Table 7

Correlations Between Learning Climate Factors and Student Outcome Measures

Climate Factors	Career-Related Outcomes		Training-Related Outcomes		
	Intent To Remain In The Navy	Navy Job Satisfaction	Overall Satisfaction	Practical Satisfaction	Classroom Satisfaction
School Ident	.34	.37	.68	.37	.42
Inst-Stu Rel's	.14	.27	.57	.39	.38
Innovativeness	.21	.23	.56	.43	.39
Rigidity	- .14	- .28	- .54	-.48	-.36
Consistency	.23	.38	.66	.45	.42
Physical Res.	.08	.27	.26	.08	.11
Influ. Curr.	-.05	.17	.35	.22	.28
Influ. Grades	.04	.12	.33	.18	.09

[a] Approximate number of subjects = 170.
[b] Underline indicates nonsignificant coefficients ($p > .05$).

Individual Characteristics. Demographic background characteristics of instructors and students were compared between schools to ensure that the findings reported here were not influenced by differences in respondent backgrounds at one or the other schools. Students did not differ as a function of age, race, marital status, gender, rank, years of Navy service, or primary care experience.

Satisfaction, Career Goals, and Retention. Regression analysis was used in order to determine whether job and/or occupational training satisfaction related significantly to retention both in the Navy and in the IDC corpsman community (versus seeking commissioned or other status). Predictor variables included (a) Navy job satisfaction, (b) curriculum relevance ratings, (c) total satisfaction with the training program, (d) satisfaction with classroom teaching, and (e) satisfaction with practical training.

Table 8 presents the results of two multiple linear regression analyses using Navy job satisfaction and four training-related outcome measures to predict reenlistment intentions. For only one variable, Navy job satisfaction, was there a significant Beta weight. A backward variable-entry routine was then run in order to eliminate redundant predictors. Job satisfaction remained the most predictive variable, accounting for 9% of the variance in intention to remain in the Navy. The training-related satisfaction variables failed to remain in the equation, indicating that Navy job satisfaction, and not IDC training-related satisfaction, was most predictive of Navy retenton.

Table 9 presents the results of nearly the same analyses as in Table 8, except these equations attempted to predict pursuit of a career as an IDC versus pursuit of commissioned or other status. The pattern of results for prediction of IDC career plans/goals differed markedly from that predicting intent to stay in the Navy. In the case of intent to remain an IDC corpsman versus seek commissioned or other status, only satisfaction with classroom training evidenced a significant Beta weight. However, the overall predictive equation was nonsignificant. This lack of multivariate

Table 8

Multiple Linear Regression Analyses Using Job and Training Satisfaction to Predict Intent to Remain in the Navy

	Navy Job Satisfaction	Curriculum Relevance	Overall Satisfaction	Practical Satisfaction	Classroom Satisfaction
Beta Weights:	.3172	-.0649	Failed Entry	.1121	-.1194
Significance:	**.0000**	.39	.25	---	.25

Multiple R^2 = .1027 **F (4,188) = 5.38; p<.0004**

Backward Elimination Solution

	Navy Job Satisfaction	Curriculum Relevance	Overall Satisfaction	Practical Satisfaction	Classroom Satisfaction
Beta Weights:	**.2972**	----------	Failed to Remain	----------	
Significance:	**.0000**				

Multiple R^2 = .0883 **F (1,191) = 18.50; p<.0000**

Table 9

Multiple Linear Regression Analyses Using Job and Training Satisfaction to Predict Intent to Remain an IDC Corpsman

	Navy Job Satisfaction	Curriculum Relevance	Overall Satisfaction	Practical Satisfaction	Classroom Satisfaction
Beta Weights:	.0423	-.1080	-.0460	-.1814	**.3009**
Significance:	.60	.17	.61	.08	**.006**

Multiple R^2 = .2073 F (5,187) = 1.68; p<.14

Backward Elimination Solution

	Navy Job Satisfaction	Curriculum Relevance	Overall Satisfaction	Practical Satisfaction	Classroom Satisfaction
Beta Weights:	----	Failed to Remain	----	-.1834	**.2510**
Significance:				.06	**.01**

Multiple R^2 = .1800 **F (2,190) = 3.17; p<.04**

Note: Bold type highlights significant data for both tables.

significance was apparently due to one or more variables contributing error. A backward entry analysis was conducted in order to eliminate redundant and unrelated predictors from the equation. The backward solution retained only two variables, satisfaction with both practical and classroom training. Only classroom training had a significant beta weight, accounting for 18% of variance in choosing to remain a corpsman. Therefore, students most pleased with the classroom portion of IDC school were those, or became those, most interested in pursuing a career as an IDC.

DISCUSSION

The results reported here indicate that **the IDC curriculum is generally task-relevant and is adequately presented in classroom and in practical training sessions.** Instructors, who in the present case served as a pool of subject matter experts, believed that IDC training at all three schools was relevant and adequate to prepare students for shipboard IDC tasks. Furthermore, student ratings indicated that they shared in their instructors' evaluations of the curriculum, thereby offering evidence of convergent validity. The instructor-student agreement also suggests that any decrement in classroom learning or topical mastery is unlikely to be due to perceptions that the material presented was unimportant to job success.

The pattern of instructor-student agreement in relevance and adequacy ratings extended to evaluations of the learning atmosphere/climate of their particular training program as well. Taken *in aggregate, the* ***training environment*** **in each of the three schools can be described as somewhat inflexible, not particularly innovative, and rather closed to student influence.** Training climate perceptions were significantly related to dissatisfaction with overall training, dissatisfaction with the job of Navy corpsman, and increased intent to leave the Navy. However, with respect to prediction of intent to leave the Navy, corpsman job satisfaction overshadowed satisfaction with training.

Finally, in addition to the convergent validity demonstrated by student-instructor agreement, evidence of discriminant validity was demonstrated by the existence of several significant between-school curriculum and atmosphere ratings. Within schools, however, instructors and students remained generally concordant. When instructors in a given school were critical; their students were critical. When instructors were positive; students were positive.

Between-School Curriculum Differences

Although in the aggregate, the curriculum was viewed as relevant and adequate, between-school differences were found to exist. Instructors and students at NUMI viewed their curriculum as attaching relatively less relevance to programs/general administration and medical department records than the other two schools. This may be due to the fact that a great deal of such training occurs prior to enrollment at NUMI, and might therefore be considered as less relevant to specialized preparation for submarine duties than, for example, radiation health and patient care. However, the fact that the classroom and practical training in admin and medical records were also rated as less adequate seems to point out room for improvement in the submarine-oriented curriculum regarding these two areas.

Compared to the other two programs, Portsmouth was rated as consistently higher in mean *perceived adequacy of training, especially* with respect to patient care, programs/general administration, and preventive medicine. Because of the frequent tendency for Portsmouth instructors and students to rate classroom and practical training more positively, it may be that Portsmouth's training atmosphere is also more positive.

Between-school Occupational Training Environment Differences

In an absolute sense, the aggregate training atmosphere scores were lower than are typically reported in studies of educational settings. However low atmosphere ratings merely indicate that a problem may exist. It was only when examined in a relative sense that it was possible to determine the impact of low atmosphere scores.

Of the three IDC schools, Portsmouth was viewed as having relatively higher school identification and better student-instructor relations. In addition, although not very high in an absolute sense, Portsmouth was viewed as relatively more flexible (i.e., less rigid) and more innovative. This finding supports the contention made in the previous section that more positive classroom ratings might be linked to a more positive training environment. Portsmouth's more favorable climate rating is not likely due to a halo effect because its curriculum was not rated as more relevant than the other two schools. The halo argument is also partly refuted by the fact that cross-school policy constrains student influence on both curriculum and grading. Portsmouth, like the other two schools, was rated very low on student influence.

Negative aspects of the training climate generally found for the IDC schools were almost certainly related to the Navy's emphasis on training program standardization. When training is of lengthy duration, high standardization might develop into monotonous routine, thereby reducing student involvement. Involvement might be increased by allowing more flexibility with regard to the amount of time spent on difficult topics, methods for interim evaluation, duration of classes, timing of breaks, etc. Faculty might be encouraged and rewarded for developing innovative techniques for teaching certain topics. And, some mechanism might be introduced that would encourage closer interaction between students and instructors such as proseminar coffee hours, athletic competitions, and other extra-curricular social events.

Although providing a mechanism for ongoing student input and involvement in the training program may be somewhat unusual for Medical Department occupational training courses, college-level courses of 12 months duration, such as IDC training, are likewise unusual.[3] Providing a more flexible and innovative approach, one that allows for increased student influence, might not only enhance student identification with the subject matter, but also improve the quality of the training program overall.

Increased openness to student input does not require that the schools relinquish control of the program or its curriculum. It is possible, however, to gain a valuable source of feedback for enhancing program quality by giving students a reasonable ongoing mechanism through which suggestions are actively solicited. Expansion of current feedback mechanisms could potentially contribute to improvements in the methods of presentation, fairness with which grading is perceived, and determination of the optimum duration of lectures and courses.

Satisfaction, Career Goals, and Retention

It was shown that nearly every aspect of the training environment was consistently and significantly correlated with both job and training satisfaction outcomes for students. This is noteworthy because significant differences were found to exist between the schools regarding environment perceptions, and the school with the most positive training environment also had the most positively rated classroom training. Based on curriculum and training environment ratings, and their relationship to job satisfaction, modification of the training environment might be warranted. However, the existence of between-school differences in curriculum and classroom ratings, even when related to differences in classroom environments, still leaves open the issue of whether ratings of the curriculum and training atmosphere will impact on future behavior, especially career-related behavior.

Future career goals were examined from the perspective of intentions to remain in the independent duty corpsman community, and in the Navy. **Training satisfaction was shown to have no significant impact on intent to remain in the Navy, however it did relate significantly to intent to remain an IDC corpsman.** On the other hand, Navy job satisfaction was significantly predictive of intent to remain in the Navy.

The lack of relationship between training satisfaction and the intention to remain in the Navy may be a function of the fact that respondents were mid-careerists, and were therefore likely to be influenced by factors experienced over a number of years working in a variety of job contexts. Of course, it may be equally likely that students not committed to an IDC career are less satisfied with training because they may not be challenged by the material, because they perceive IDC duty as a temporary one from which to move into other positions of responsibility, or some other factor(s) not considered by this study.

Although these data are limited to self reports provided by a sample of instructors and students at a single point in time, the data proved reliable, and evidenced both convergent and discriminant validity. Nevertheless, this study cannot stand alone as an evaluation of any program due to the unavailability of performance measures.

Future reports will extend the scope of the present study to obtain curriculum ratings from IDCs serving in the fleet. This next fleet-wide study will hopefully provide cross-validation of the classroom study by estimating the degree of task-training interface, examining vocational decision-making, job satisfaction, intent to remain in the Navy, career goals, and using on-the-job IDC performance as behavioral criterion measures.

The purpose of this study was to determine, in an absolute sense, whether the IDC curriculum was viewed as task-relevant and adequate by instructors and students; it was. Additionally, this study examined whether the training environment was conducive to optimal learning; it was not. Several aspects of the training environment seemed to impact negatively on student attitudes toward IDC training, their satisfaction with IDC training, as well as their career intentions and organizational commitment. However, there do not appear to be any critical training-related problems which have the potential to adversely impact on IDC performance in the fleet.

NOTES

1 An additional method for gauging curriculum relevance is to survey IDC corpsmen serving aboard ship. This is currently being undertaken in a separate study as part of a fleet-wide survey of IDCs.

2 This was based on a personal conversation between the first author and Siegel in the fall of 1984.

3 Students are, in fact, granted college credit for a large proportion of their IDC training.

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This study examined the quality of the training and curriculum of Advanced Hospital Corps School (AHCS), as part of a larger study of the training and effectiveness of Shipboard Independent Duty Hospital Corpsmen (IDCs). During the Spring of 1984, a survey of instructor and student training program attitudes and perceptions was conducted at the three AHCSs where IDCs are trained. This survey addressed perceptions of the content relevance of the

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IDC curriculum, the adequacy of classroom and practical training, and attitudes toward various qualitative aspects of the training environment (learning atmosphere). An attempt was made to focus on aspects of the program that were relatively enduring such as student reactions to topical relevance, impressions of training adequacy, and attitudes toward the quality of the learning environment provided by each school.

As a whole, ~~results indicated~~ that both instructors and **students viewed the curriculum as being generally above average in relevance, and both classroom and practical training was evaluated to be adequate.** The learning atmosphere was rated, on the whole, as being highly structured, and not very open to student input. These **atmosphere ratings correlated negatively with training-related satisfaction, Navy job satisfaction, and intent to remain in the Navy.** Overall results suggest that the task-training ~~interface~~ was good; however, a few areas for ~~improvements~~ were identified.

In order to foster an increase in the psychological involvement of students, revision of the current IDC training program structure was recommended. Revision efforts might focus on ways to permit instructors increased latitude in how material is presented, and how student performance feedback is provided prior to examinations (e.g., quizzes, presentations, term papers, etc.).

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