EVALUATION OF MICROTRAINING MODIFICATIONS: IMPLICATIONS FOR PARAPROFESSIONAL TRAINING WITHIN COMMUNITY COUNSELLING AGENCIES

MAX R. UHLEMANN
University of Victoria
GERALD L. STONE
University of Iowa
DAVID R. EVANS
University of Western Ontario
MARGARET HEARN
University Hospital

Abstract

This study assessed the viability of a modified microtraining approach to paraprofessional development using programmed manuals and models. Training and evaluation took place within a community counselling setting with therapeutic workers randomly assigned to a Model group (6), No-Model group (6), and a Control group (8). Both training groups (Model; No-Model) were exposed to the same learning (programmed manuals) and practice phases while the addition of models differentiated the groups. Covariance analyses indicated that training groups emitted fewer closed inquiries and had a higher interview empathy performance than a no-training group. Participants did not substantially differ on written empathy, but the No-Model participants emitted more open-inquiries at posttest than Control participants. These effects seem to be primarily a function of the differences between training and no-training with little effect due to modeling. Results were discussed in terms of the differences between knowledge and performance competencies and the relationship between specific skills and empathic communication. Implications for expanded dimensions of skill development programs and the usefulness of programmed learning were also raised while acknowledging the limitations of this study.

Résumé

Appliquée au développement paraprofessionnel, cette recherche a pour but d'évaluer l'efficacité d'une approche modifiée de micro-enseignement basée sur des modèles et des manuels programmés. La formation et l'évaluation ont cours dans un contexte de counselling communautaire. On assigne de façon aléatoire des apprentis thérapeutes à un groupe *avec modèle* (6), à un groupe *sans modèle* (6) ou à un groupe *témoin* (8). Les deux groupes en formation (avec et sans modèle) suivent les mêmes phases d'apprentissage (manuels programmés) et d'exercice. Les analyses de covariance indiquent que les sujets ayant reçu la formation recourent moins souvent aux questions fermées que ceux du groupe témoin et présentent aussi une meilleure performance que ceux-ci en termes d'empathie en cours d'entrevue. Les participants au programme de formation ne diffèrent pas quant à l'empathie écrite; toutefois, au posttest, ceux du groupe *sans modèle* utilisent davantage de questions ouvertes que ceux du groupe *témoin*. Les effets semblent surtout fonction de la présence ou de l'absence de formation et ne sont que très peu reliés à l'apprentissage par observation. Les résultats sont interprétés 1) en termes de compétences à distinguer selon qu'elles procèdent de la connaissance ou de l'exercice et 2) en termes de la relation entre les habiletés spécifiques et la communication empathique. Tout en faisant état des limites de leur recherche, les auteurs signalent aussi ses implications quant à l'utilité de l'apprentissage par programmation et quant aux améliorations possibles des programmes de développement des habiletés.

M.R. Uhlemann, G.L. Stone, D.R. Evans, M. Hearn

A major need of the human service field appears to be the evaluation of training programs for paraprofessional and non-professional personnel (D'Augelli & Danish, 1976). An important question involved in such program evaluation concerns the identification of important procedures that contribute to an effective and efficient training methodology. The purpose of the present investigation was to examine this question in the context of a promising systematic training approach initiated by Ivey and associates (Ivey & Authier, 1978).

Many of the previous component studies involving microtraining have been concerned with the contributions of such information modalities as lecturing (e.g., Kuna, 1975), instructions and modeling (e.g., Stone & Vance, 1976; Uhlemann, Lea, & Stone, 1976), and programmed instruction (e.g., DiMattia & Zimmer, 1972). In addition, other studies have focused on supervision (e.g., Authier & Gustafson, 1976; Berg & Stone, 1980; Stone, 1981). A general issue to emerge from these and other related studies (see Stone & Stein, 1978) is how best to convey skill information to the trainee. Modeling has been suggested as an important procedure in helping skill acquisition (Bandura, 1969; Dalton & Sundblad, 1976; Eisenberg & Delaney, 1970; Perry, 1975) and is used in most training programs. However, modeling has not always been effective (see Stone & Stein, 1978). Another modality for communication of skill information concerns programmed learning (DiMattia & Zimmer, 1972; Saltmarsh, 1973; Saltmarsh & Hubele, 1974; Uhlemann, Hearn, & Evans, 1980). In fact, some (Dimattia & Zimmer, 1972) have suggested that programmed learning may be more effective than modeling. In their discussion, DiMattia and Zimmer (1972) suggest that modeling may be relatively ineffective because it usually involves a passive learning experience that inhibits trainee participation, while programmed learning stimulates the active participation of the participants.

The evidence supporting these procedures has not been uniform. Moreover, the data have been usually collected in laboratory situations (e.g., Forti, 1975; Stone & Stein, 1978). A major priority of the present study was to assess the viability of these two procedures, modeling and programmed learning, within a modified microtraining program used in training human service workers affiliated with a community setting. It was hoped that the results of the application of these procedures in an applied setting would suggest an economical and effective training program.

Methodology

Participants

Trainees were 20 human service workers connected with a therapeutic community in London, Ontario. Participants were randomly assigned to a Model group (N = 6), a No-Model group (n = 6), and a Control group (n = 8). Sex was balanced across groups with 2 males in each group. Preliminary data indicated there were no significant differences in t of age or length of service. The mean age of participants was 32 years, 4 months (range = 23 years, 3 months - 50 years, 2 months). (Model group = 36 years, 10 months; No-Model group = 34 years, 2 months; Control group = 30 years, 7 months). Length of service ranged from 7 months to 6 years, 10 months, with a mean of 3 years, 6 months. (Model group = 3 years, 9 months; No-Model group = 3 years, 11 months; Control group = 3 years, 7 months).

Personnel

Six female role players served as clients. Unfortunately, practical constraints prohibited the use of actual clients. The role players received extensive training in their roles with each role player being interviewed and audio-taped by two senior faculty experienced in helping skill development. Before the assessments began, all role players were evaluated and judged satisfactory by the two faculty-judges in terms of clarity of expression, affect, and realism.

Two male faculty members experienced (5 years or more) in counselling and helping-skill training provided the live modeling procedures.

Three sets of judges were used to the ratings in order to reduce rating contamination. Two female graduate students in counselling psychology were trained to rate the Communication Index (Carkhuff, 1969). One male and one female rater were trained to rate audiotapes for the microtraining skills, and one male and one female rater were trained to rate audiotapes for empathic communication.

Procedure

Assessments. All interview assessments

involved the random assignment of clients within the restrictions of counterbalancing, scheduling, and the non-relication of client role across assessment situations. Six client roles were developed from typical problems encountered in community centers (i.e., depression, loneliness, separation, lack of vocational goals, etc.).

Training Phase

Participants were exposed to a 5-week systematic program. Each week one specific skill was the focus of training. The skills included attending behavior, open-ended questions, reflection of feeling, reflection of content, and integration and were defined according to the guidelines suggested by Ivey and associates (Ivey & Authier, 1978). All training conditions employed a modified microtraining procedure that was used each week. Each training session involved three phases: didactic, modeling (Model group only), and supervised practice. Programmed learning material developed by Hearn (1976) and tested in previous studies (see Evans, Hearn, Uhlemann, & Ivey, 1979) served as the didactic material in Phase 1. Each participant was requested to read and respond to the branching format in a group setting. At the end of the manual, participants were asked to respond in writing to the listed client statements by using the target skill. Modeling procedures were experienced in Phase 2 in a group setting by the Model group. During Phase 3, all participants engaged in triadic rehearsal with each participant serving as client, counsellor, and observer. Client problems were derived from the participants' experience. The counsellor was to practice the target skill with the observer providing feedback. All practice sessions were audiotaped and feedback was facilitated by the observer charting the frequency of target responses and the participation of one of the faculty-models. The triads were initially formed on the basis of random assignment with faculty-models alternating among triads across sessions.

Time for each phase was as follows: 40 minutes for reading and responding to the programmed manuals, one hour for observation of models and discussion (Model group), and one hour and 20 minutes for practice and feedback.

Model Training. In addition to the programmed learning and rehearsal phases, Model group participants were exposed to

in vivo demonstrations of the appropriate and inappropriate use of target skills. The modeling procedures involved three 5-minute interviews between the faculty-models displaying appropriate, inappropriate, and finally appropriate helping skills. Each week a different faculty-model provided the positive examples. Modeled procedures were followed by discussion. All model interviews were audiotaped and were judged to have content validity.

No-Model Training. The No-Model group was exposed to programmed learning manuals and practice sessions. No modeling procedures were provided.

Control. The Control group did not receive training until one week after the follow-up assessment.

Measures

All interview measures were administered to all groups one week prior to training, one week after training, and five weeks following training. The Communication Index was administered at posttest and follow-up only.

Written assessment. The Communication Index was rated for written empathic communication using the Carkhuff 5-point Empathy Scale (1969). The mean level of communication was used in data analyses.

Two experienced and trained raters were randomly assigned all the Indices. Interrater reliability using the Pearson correlation coefficient and based on all 16 vignettes was .90. All indices were commonly scored.

Interview assessments. A master tape of random ordered, initial 10-minute segments from all audiotaped interviews was developed. The master tape was scored for empathy (Carkhuff, 1969) in two-minute intervals by experienced raters. A different set of experienced raters make frequency counts in two-minute intervals of the microtraining and opposite skills. Judgments were based on criteria developed by Ivey (Ivey & Authier, 1978). Interrater reliabilities were computed using the Pearson correlation coefficient for interview empathy (.64), open-ended questions (.95), reflection of feeling (.90), reflection of content (.93), advice giving (.94), and other (.98).

Design and Analysis

For purposes of analysis, four categories of counsellor communication were evaluated: a) written empathy, b) interview empathy, c) open inquiry (including open-ended questions, reflection of feeling, and reflection of content), and d) closed inquiry (including advice giving and others). These last two categories subsume more than one skill. Such macro-categories appear congruent with microcounselling and have been used in previous studies (see Toukmanian & Rennie, 1975). Evaluation of training consisted of a group (i.e., Model, No-Model, and Control) analysis of covariance for interview empathy, open inquiry, and closed inquiry with the respective pretest scores serving as the covariate. Analysis of variance was used for the written empathy measure. The Newman-Keuls procedure was used to investigate significant effects further. The traditional level of statistical significance (p .05) and the mean rating for all commonly scored measures were used in the analysis.

Results

Preliminary Analyses

Analyses of pretest measures indicated that the groups did not differ significantly.

Training Outcome

Table 1 presents the F values and the descriptive data of the training phase for each group on each communication category by assessment phase.

Training effects were found in the following areas: (1) interview empathy, (2) closed inquiry, and (3) posttest open inquiry. The only area that failed to reveal significant differences was written empathy.

Table 1 suggests that both training groups (Model; No-Model) improved their interview empathy and open inquiry skills while reducing opposite skills (closed inquiry). Such improvement was not demonstrated by the no-training group (Control). Post hoc analyses (Newman-Keuls procedure) using adjusted outcome scores statistically confirmed the training group's superior performance in compari... to the no-training group except open inq... in which only the performance of the No-Model group was significant.

In terms of our original purpose, it appears that a modified microtraining procedure using programmed manuals can be effective while the addition of a modeling component made little impact.

Discussion

Training

It appears that a modified microtraining approach may be a valuable method of facilitating communication skills among community mental health workers. The more pronounced training findings concern the following: 1) performance facilitation, 2) skill learning and discrimination, and 3) the viability of programmed manuals within a microtraining approach.

Performance facilitation. In terms of empathy, it appears the groups did not substantially differ in knowledge about empathic communication as assessed by the Communication Index, but training did appear to enhance skill performance. It appears that the ability to write responses does not necessarily imply the ability to use such responses... interviews. This problem has been demonstrated before in the use of Carkhuff's Ind... and interview performance. Many researchers have questioned the predictive validity of the Index (written empathy) in terms of interview performance (see Butler & Hansen, 1973; Gormally & Hill, 1974; Stone & Vance, 1976).

Theoretically, these results may suggest a broadened approach to skill training. That is, skill-deficit models that suggest the trainee does not have the content knowledge of the skill do not seem to be always appropriate.

Table 1

Means, Adjusted Means, Standard Deviations, and
F Values for Empathy and Communication Categories

		Modeling (n=6)		No Modeling (n=6)		Control (n=8)		
Measures		x̄	s.d.	x̄	s.d.	x̄	s.d.	F
Written Empathy	Pre							
	Post	2.53	0.64	2.75	0.20	2.07	0.80	1.86
	Follow Up	2.22	0.38	2.69	0.44	2.18	0.57	2.17
Interview Empathy	Pre	2.01	0.53	1.84	0.42	1.89	0.47	0.20
	Post	2.56	0.46	2.43	0.40	1.89	0.41	5.13
		(2.52)		(2.46)		(1.89)		(5.51)*
	Follow Up	2.57	0.24	2.36	0.31	1.84	0.56	4.97
		(2.50)		(2.42)		(1.85)		(4.72)*
Open Inquiry	Pre	16.25	6.26	19.58	8.98	14.06	6.73	0.97
	Post	22.25	8.23	24.42	2.46	15.88	4.20	4.86
		(22.25)		(24.36)		(15.58)		(4.09)*
	Follow Up	24.30	1.68	21.80	7.13	15.44	6.94	3.72
		(24.35)		(21.54)		(15.58)		(3.26)
Closed Inquiry	Pre	25.00	5.66	16.67	9.48	25.81	6.49	3.08
	Post	4.25	3.21	4.33	3.83	25.00	9.78	22.04
		(3.20)		(7.28)		(23.56)		(21.42)**
	Follow Up	4.50	1.97	5.80	2.36	19.88	5.68	27.53
		(4.54)		(5.32)		(20.14)		(25.70)**

Note. Means and F values in brackets represent adjusted means and F values from covariance analyses.

*p ˂ .05
**p ˂ .01

It may be necessary to investigate inhibition and motivation as important factors in skill development. The trainee may know what to do, but the problem for the trainee may be to get himself or herself to implement the skill. Lack of implementation may suggest increased anxiety, self-doubts, or a perceived lack of reinforcement. It appears necessary for skill development programs to broaden their approaches and include specific procedures that address attitudes, cognitions, and beliefs (see Mahon & Altman, 1977; Richardson & Stone, 1981; Stone, 1980). Moreover, skill training programs interested in trainee performance may need to emphasize supervised practice ~~e~~ in their curriculum and focus more on ~~plication~~ during evaluation.

Skill learning and discrimination. Low performance of opposite skills (e.g., closed inquiry) was pronounced for the training groups compared to the control group at posttest and at follow-up. It appears that training helped the trainees to discriminate clearly and improve empathic skills with consequent reduction in opposite skills. Open inquiry results were not as strong for both training groups.

The impact of training was clearly registered on the higher interview empathy performance and the lower production of opposite skills. Such results may suggest that one way of enhancing the quality of a counsellor's interview responses (empathic communication) is to provide specific skill training on the component skills. While such behavioral training may enhance the acquisition of specific skills, it appears to lower the frequency of inappropriate skills. A clear recommendation for future skills development investigations is to include multiple measures in order to assess skill usage patterns instead of only relying on frequency counts of target skills.

It should also be pointed out that these ~~ts~~ only show an initial or moderate level functioning. The present procedures are not sufficient for training outcome, but provide evidence about methods that may be helpful in the initial stages of a more extensive training program.

A final point concerns the helpfulness of these skills. This decision depends on which perspective is adopted. In this study, objective raters were used. Whether such effects will resonate with client perceptions and facilitate positive client behaviors is unknown. It does seem important for community agencies to gather client data on the impact of these various skills since most of the microtraining skills may not have the same degree of potency across culturally different clients.

Programmed learning. The results do not support the additive effect of modeling. The modified microtraining package with the programmed manuals (No-Model group) was as effective as the Model group. A possible reason for the non-additivity of modeling may be that modeling presents redundant information. It may also suggest that the active model used in the programmed manual conveys sufficient information about the skills through verbal modeling and cognitive rehearsal. The rehearsal component may stimulate the programmed manual participant to practice the skills, obtain feedback, and elaborate their meaning, while the addition of modeling may not sufficiently stimulate rehearsal operations or information processing because of its passive mode. Whatever the explanation, further research is required to illuminate the learning processes involved in each of these procedures.

In summary, the present investigation, while limited (e.g., the small sample size, single evaluation perspective, relatively moderate functioning participants, possible inflated error rate due to repeated use of covariance analysis, and experimental nature of the training) does suggest that modified microtraining programs using programmed manuals and practice have potential as an economical training program for *initial* skill development in community counselling settings.

References

Authier, J., & Gustafson, K. Application of supervised and nonsupervised microcounseling paradigms in the training of registered and licensed practical nurses. *Journal of Consulting and Clinical Psychology*, 1976, *44*, 704-709.

Bandura, A. *Principles of behavior modification.* New York: Holt, Rinehard, & Winston, 1969.

Berg, K.D., & Stone, G.L. Effect of conceptual level and supervision structure on counselor skill development. *Journal of Counseling Psychology*, 1980, *27*, 500-509.

Butler, E., & Hansen, J. Facilitative training: Acquisition, retention, and modes of assessment. *Journal of Counseling Psychology*, 1973, *20*, 60-65.

Carkhuff, R.R. *Helping and human relations: A primer for lay and professional helpers* (2 Vols.). New York: Holt, Rinehart, & Winston, 1969.

Dalton, R., & Sundblad, L. Using principles of social learning for communication of empathy. *Journal of Counseling Psychology*, 1976, *23*, 454-457.

D'Augelli, A.R., & Danish, S. Evaluating training programs for paraprofessionals and nonprofessionals. *Journal of Counseling Psychology*, 1976, *23*, 247-253.

DiMattia, D.J., & Zimmer, J.M. Comparison of training devices for teaching emotional discrimination. *Counselor Education and Supervision*, 1972, *12*, 17-23.

Eisenberg, S., & Delaney, D. Using video simulation of counseling for training counselors. *Journal of Counseling Psychology*, 1970, *17*, 15-19.

Evans, D.R., Hearn, M.T., Uhlemann, M.R., & Ivey, A.E. *Essential interviewing: A programmed approach to effective communication.* Monterey, California: Brooks/Cole, 1979.

Forti, L.A. Media therapy: An evaluation of the effects of programmed instruction and video-taped models on microcounseling behaviors. Unpublished doctoral dissertation, The American University, 1975.

Gormally, J., & Hill, C. Guidelines for research on Carkhuff's training model. *Journal of Counseling Psychology*, 1974, *21*, 539-547.

Hearn, M.T. Three modes of training counselors: A comparative study. (Doctoral dissertation, University of Western Ontario, 1976). *Canadian Theses on Microfiche*, 1978, *23*, No. 28243, National Library of Canada, Ottawa.

Ivey, A.E., & Authier, J. *Microcounseling.* Springfield, Illinois: Charles C. Thomas, 1978.

Kuna, D. Lecturing, reading, and modeling in counselor restatement training. *Journal of Counseling Psychology*, 1975, *22*, 542-546.

Mahon, B.R., & Altman, H.A. Skill training: Cautions and recommendations. *Counselor Education and Supervision*, 1977, *17*, 42-50.

Perry, M. Modeling and instructions for counselor empathy. *Journal of Counseling Psychology*, 1975, *22*, 173-179.

Richardson, B., & Stone, G.L. Effects of a cognitive adjunct procedure within a microtraining situation. *Journal of Counseling Psychology*, 1981, *28*, 198-205.

Saltmarsh, R.E. Development of empathic interview skills through programmed instruction. *Journal of Counseling Psychology*, 1973, *20*, 375-377.

Saltmarsh, R.E., & Hubele, G.E. Basic interaction behavior: A microcounseling approach for introductory classes. *Counselor Education and Supervision*, 1974, *13*, 246-249.

Stone, G.L. *A cognitive-behavioral approach to counseling psychology.* New York: Praeger, 1980.

Stone, G.L. Effects of different strategies within a microtraining situation. *Counselor Education and Supervision*, 1981, *20*, 301-311.

Stone, G.L., & Stein, M.L. Effects of modeling and instructions as a function of time, task, and order. *Journal of Counseling Psychology*, 1978, *25*, 150-156.

Stone, G.L., & Vance, A. Instructions, modeling, and rehearsal: Implications for training. *Journal of Counseling Psychology*, 1976, *23*, 272-279.

Toukmanian, S.G., & Rennie, D.L. Microcounseling versus human relations training: Relative effectiveness with undergraduate trainees. *Journal of Counseling Psychology*, 1975, *22*, 345-352.

Uhlemann, M.R., Hearn, M.J., & Evans, D.R. Programmed learning in the microcounseling paradigm with hotline workers. *American Journal of Community Psychology*, 1980, *8*, 603-6

Uhlemann, M.R., Lea, G., & Stone, G.L. Effec instructions and modeling on trainees low in interpersonal communication skills. *Journal of Counseling Psychology*, 1976, *23*, 509-513.

ABOUT THE AUTHORS

Max R. Uhlemann is an assistant professor in the Department of Psychological Foundations in Education at the University of Victoria. Prior to this position he was adjunct assistant professor at the University of Western Ontario and Program Director at the Western Ontario Therapeutic Hostel in London, Ontario. His current teaching interests include helping undergraduate students in the development of group process skills. At the graduate level his teaching interests focus on the training of counsellors in theory and therapeutic skills. Research interests include the assessment of counselling skill development procedures for professional and paraprofessional helpers, the evaluation of cognitive-behavioral counselling techniques, and the impact of stress in daily living.

Gerald L. Stone is currently Professor in the College of Education and Coordinator of Counseling Psychology at The University of Iowa. Dr. Stone spent several years (1972-79) in Canada in the Department of Psychology at the University of Western Ontario a receiving his degree in Counseling Psychol at Michigan State University. While at Wester, Dr. Stone served as Chair of the Counselling Psychology program and eventually as the Coordinator of All Applied Psychology programs before leaving for Iowa. He currently serves on the Board of Editors of the *Journal of Counseling Psychology* and as secretary for Division 17 (Counseling Psychology) of APA and Division E (Counseling and Human Development) of AERA. While maintaining an active research program in a cognitive approach to counselling, Dr. Stone has been

applying his research and counselling approach to the health field: genetic counselling, stress in intensive care nursing, training physicians in communicating distressful information (Down's Syndrom), and others.

David R. Evans received his Ph.D. in Applied Psychology from the University of Toronto. He is currently an Associate Professor and Coordinator of the Applied Psychology Program at the University of Western Ontario. His present research involves the application of the microtraining model to the acquisition of communication and problem solving skills as a strategy to enhance quality of life.

Margaret T. Hearn received her Ph.D. in counselling psychology from the University of Western Ontario. She is currently Director of Psychological Services at War Memorial Children's Hospital in London, Ontario. She is also an adjunct faculty member at the University of Western Ontario in the Departments of Pediatrics, Psychiatry and Psychology. Her major interests involve the development and application of behavioural medicine in a children's treatment setting.