Appendix A

1982 American Psychological Association Distinguished Scientific Award for the Applications of Psychology[13]

The Distinguished Scientific Award for the Applications of Psychology is presented to a person who, in the opinion of the Committee on Scientific Awards, has made the most distinguished or empirical advance(s) in understanding or ameliorating an important practical problem. In accordance with established custom, the award winner will present an address on some phase of his scientific work at the 1983 convention. This year's winner, Robert M. Gagné, was presented with a check for $1,000 and a citation of his contribution. The award was presented by Edwin A. Fleishman, chair of the Committee on Scientific Awards. Other members of the committee are John Garcia. Donna Gelfand, Marcia Johnson, Edward E. Jones, and G. Terence Wilson. The winners since the establishment of the award are listed below:

1973 Conrad L. Kraft
1974 Gerald S. Lesser, Edward L. Palmer
1975 Nathan H. Azrin
1976 Fred S. Keller
1977 Starke R. Hathaway
1978 Alphonse Chapanis
1979 Joseph Wolpe
1980 Edwin A. Fleishman
1981 Anne Anastasi
1982 Robert M. Gagné

[13] We are indebted to the APA for their permission to reprint the text of the Scientific Award.

Robert M. Gagné

Citation

For outstanding and influential work in the field of human learning. His particular genius is the ease with which he moves between research and development, enriching both. Through his work in complex skills training, he has deepened our knowledge of transfer of training, problem solving, techniques of task analysis, and instructional systems. His research on the acquisition of knowledge led to a theory of learning hierarchies that stimulated research on the learning of subject matter and the design of curricula. His book, *The Conditions of Learning*, a brilliantly clear exposition of various kinds of human learning as they relate to methods of instruction, sparked new interest in the contributions of psychology to education.

Biography

Influenced by his reading of popular works, Robert Gagné decided in high school that he wanted to study psychology and perhaps become a psychologist. The high school in question was in North Andover, Massachusetts, a town that included farms and open country as well as suburban housing for the neighboring textile city of Lawrence. Many of his classmates were the sons and daughters of immigrants from Europe, young people who strove to put aside their ethnic origins and become full-fledged Americans; in this they usually succeeded.

A scholarship offer from Yale University sent Gagné to that institution, where he found continuing provision for both scholarships and part-time work in subsequent undergraduate years. The introductory course in psychology, despite fine instructors, raised doubts about his choice of such a pesky subject. Advanced courses, however, were more satisfying. As a psychology major, he was fortunate to have Edward S. Robinson as an undergraduate advisor. Although Professor Robinson met an untimely death during Gagné's final year at Yale, his influence as a teacher and his advice regarding graduate work in psychology continued to exert their effects.

Brown University was the site of Gagné's graduate study. As people of his generation often remind themselves, most graduate students of that day were unmarried. As a consequence, they spent almost all of their waking hours in the psychology building. In that setting, they had the opportunity for frequent interaction with an outstanding faculty, most of whom also spent a great deal of time "in the laboratory." The department was headed by Walter S. Hunter, a behaviorist of the old school, much of whose research was devoted to a study of cognitive processes ("the symbolic process"). Gagné's graduate advisor was Clarence H. Graham, whose work on visual mechanisms is widely known. Graham was interested in finding out whether precise mathematical formulations

of the sort common in studies of vision could be employed in the field of learning. Following some initial collaborative work with Graham on this problem, using white rats on a runway, Gagné continued studies of the “conditioned operant response” under various incentive conditions, and these were collected as parts of his Ph.D. thesis.

His first job as a college instructor came in 1940 at Connecticut College for Women. He made initial preparations to study the learning of humans rather than of white rats, but these activities were interrupted by the circumstance of a low draft number and induction into the Army of the United States for a period of military training. The expected limits of that period were, of course, abandoned with the formal declaration of war in December 1941.

The period of World War II was an interesting and challenging one for many psychologists. Following a stint of basic training, Gagné reported for duty to Psychological Research Unit No. 1, Maxwell Field, Alabama. This was one of three units initially established as part of the Aviation Psychology Program, whose mission was to administer and score batteries of aptitude tests to select and classify aviation cadets who were to become crews of combat aircraft (pilots, navigators, bombardiers, gunners). At Maxwell Field, the food was good, the living quarters never quite good enough, and the work of testing and scoring continually interesting.

During the next year, Gagné attended Officer Candidate School at Miami Beach. Following his commissioning as a second lieutenant, he was assigned briefly to a headquarters at Fort Worth, Texas, and then to the School of Aviation Medicine, Randolph Field, Texas. Here, in a section headed by Arthur W. Melton, he participated in the development, inspection, and technical description of the psychomotor tests used in aircrew classification. A later assignment was to the Perceptual Film Research Unit, Santa Ana Army Air Base, headed by James J. Gibson, which was engaged in developing film tests of perceptual abilities. Gagné’s final Army assignment, short in length, was to the Psychology Branch, Aero Medical Laboratory, Wright Field. Under Paul M. Fitts’ leadership this organization initiated the study of what came to be called human engineering.

After holding a temporary faculty position at Pennsylvania State University, Gagné returned to Connecticut College. During this period he carried out studies of learning and transfer of training in multidiscrimination motor tasks, under a grant from the Navy Special Devices Center. In 1949 he accepted an offer conveyed by Arthur Melton to join a U.S. Air Force organization called the Human Resources Research Center, which later became the Air Force Personnel and Training Research Center. His initial position was research director of the Perceptual and Motor Skills Laboratory, an organization whose

mission included basic research in these areas as related to military training. The influence of this experience was reflected in a textbook having a “human performance” flavor, co-authored with Edwin A. Fleishman.

Later he became technical director of the Maintenance Laboratory at Lowry Air Force Base, Colorado, an organization engaged in research on the training of electronic maintenance personnel and associated specialties. An unusually talented group of research psychologists was assembled at this laboratory, and most have remained outstanding investigators over the years down to the present. Besides conducting training research, the laboratory played a leading role in the development of a technology for forecasting personnel and training requirements for newly developed weapons systems; the basic elements of this technology have remained in continuing use by the U.S. Air Force. Largely because of his association with a stimulating group of research scientists during eight years of civilian service with the Air Force, Gagné looks upon this period as one of peak enjoyment in his profession.

In 1958 Gagné returned to academic life as a professor of psychology at Princeton University. In this period, his research included studies of problem solving and the learning of mathematic skills. Partly in response to a prevailing trend of the time, his interest in research shifted toward the learning of school subjects. He carried out collaborative studies with the University of Maryland Mathematics Project and participated in the development of the program in elementary science, “Science-A Process Approach,” a project sponsored by the American Association for the Advancement of Science. During this period Gagné conducted studies of intellectual skills and their prerequisites, leading to the formulation of the notion of the “learning hierarchy” as it applies to such skills.

Continuing to be attracted toward research with an applied orientation, in 1962 he joined the American Institutes for Research, whose president was John C. Flanagan. This organization was heavily engaged in research on training, the assessment of human performance, educational program evaluation, and related questions. Gagné’s position was director of research, and this required, among other things, monitoring the efforts of research teams in three different office locations. This was a busy time, enriched by acquaintance with many highly competent applied scientists in a great variety of fields. This time also saw the appearance of the first edition of his book, *The Conditions of Learning*. Requests for rights to editions in Japan, Germany, and Spain were soon received, and were followed by those from other countries.

Again joining academic ranks, Gagné accepted an appointment in educational psychology at the University of California, Berkeley. Instructional duties here were with

graduate students in educational research and other educational specialties. An early task at Berkeley, however, was assuming the post of director of the Far West Laboratory for Educational Research and Development during its initial organizational stage. With the appointment of John Hemphill as laboratory director, the early hectic activity of formative days gave way after six months to programs of more orderly structure. Academic pursuits at Berkeley continued with graduate students in educational research, and with research studies of learning hierarchies and rule learning. In collaboration with colleague W. K. Rohwer, Jr., Gagné prepared for the Annual Review of Psychology the first chapter bearing the title “Instructional Psychology.”

Attractive opportunities for the conduct of research on school-related subjects appeared in a Department of Educational Research at Florida State University in 1969, and here Gagné found his most lasting academic home. He collaborated with L. J. Briggs in writing *Principles of Instructional Design* and saw the appearance of the second and third editions of *The Conditions of Learning*. He worked with colleagues to develop a new graduate program in instructional systems design, which has by this time produced many Ph.D. graduates distinguished in this field. His service at Florida State has been interrupted by a fellowship year at the Institute for Advanced Study in the Behavioral Sciences and by a Fulbright fellowship to spend six months in Australia. In the latter location, he enjoyed a visiting professorship in the Faculty of Education at Monash University, where he collaborated in studies of rule learning and memory with Richard T. White. Recent activities at Florida State have included studies of dissemination of research and development findings to elementary schools, and investigations of remembering by elderly adults who have viewed television documentary programs.

Gagné has been president of the APA Divisions of Military Psychology and Educational Psychology, and president of the American Educational Research Association. He serves as consulting editor to several professional journals, including the Journal of Educational Psychology, Instructional Science, Human Learning, and the Journal of Instructional Development. His honors include the AERA-Phi Delta Kappa award for distinguished educational research (1972), the E. L. Thorndike award in educational psychology (1974), and election to the National Academy of Education (1974).

Gagné and his biologist wife Pat continue to enjoy Tallahassee as a living place. Their son Sam lives in Hartford, Connecticut, and they see their grandson David only on occasional visits. Their daughter Ellen is an educational psychologist interested in the investigation of school-subject learning; she holds a faculty appointment at the University of Georgia, although she is currently on leave and residing in California. Gagné’s non-professional pursuits include reading modern fiction and designing and constructing furniture of wood.

Appendix B

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Appendix C

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- Library technology and automation
- Library education
- Information policy
- Information literacy
- Information storage, processing and retrieval
- Networking

Topics covered in educational technology include:

- Design, development, and evaluation of instruction
- Computer-assisted instruction
- Hypermedia, interactive video, and interactive multimedia
- Telecommunications
- Film, radio, television, and other audio-visual media
- Distance education
- Simulation and gaming

What is Available From ERIC/IT?

Each year, ERIC/IT publishes Monographs, Minibibliographies, and Digests in the fields of educational technology and library and information science. Our semiannual newsletter, ERIC/IT Update, announces new clearinghouse products and developments, and ERIC/IT Networkers provide helpful information for using ERIC-related resources on the Internet.

Publications

- Digests, providing brief overviews of topics of current interest and references for further reading
- Monographs, featuring trends and issues analyses, synthesis papers and annotated bibliographies
- ERIC/IT Update, a semi-annual newsletter

User Services

- Response to inquiries about ERIC and matters within the ERIC/IT scope area
- Workshops and presentations about ERIC and database searching

- Assistance in searching the ERIC database

AskERIC

- Internet-based question answering service for educators
- AskERIC Virtual Library, an Internet site of education-related information resources including lesson plans, InfoGuides, listservs and much more
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- Research Reports
- Program Descriptions
- Instructional Materials
- Conference Papers
- Teaching Guides
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How Do I Find Out More?

For additional information about ERIC or about submitting documents, or for a current publications list, contact:

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