Educational Psychology and Self-Regulation of Learning in Japan


This Special Issue Contains Japanese Educational Psychologists’ Review of the Japanese Translation of Zimmerman & Schunk’s book

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The book is divided into three sections that correspond to three eras in the history of the discipline:

- The founding period (1880s to 1920)
- The rise to prominence period (1920 to 1960)
- The modern period (1960 to the present)

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At the beginning of the 21st century, Division 15 (Educational Psychology) of the American Psychological Association (APA), commissioned Dr. Barry J. Zimmerman and Dr. Dale H. Schunk to put together a comprehensive book-length analyzing the most eminent contributors to the discipline of educational psychology. The outcome of that was an edited volume, *Educational Psychology: A Century of Contributions* (2003). Then, Zimmerman and Schunk selected 16 leading psychologists who have had a significant impact on educational psychology during the last century. Those psychologists and their lives, theory, and research changed how educational psychology was construed, researched, and applied. They provided new directions to the understanding of human learning.

Zimmerman and Schunk invited contemporary educational psychologists to write a biographical description of their designated last century contributors to educational psychology. In 2003, Zimmerman and Schunk invited each of them to write a chapter describing the theory, research, scientific discoveries, and legacy of the major contributors to educational psychology. Then, in 2018, Dr. Shuichi Tsukano translated *Educational Psychology: A Century of Contributions* to Japanese.

As the editor-in-chief of the AERA SSRL SIG Times Magazine, I invited Dr. Motoyuki Nakaya and Dr. Ito Takamichi to write a review of the Japanese translated book with an introduction, highlights of salient points of selected chapters, reflections of the importance, applications, and recommendations derived from the chapters to Japanese educational psychology. Dr. Nakaya and Dr. Takamichi recruited nine distinguished Japanese educational psychologists. This special issue contains their reviews and reflections.

As their reflections reveal, far from now are the days when Skinner’s behaviorism leaded how teachers imparted instruction primarily through reinforcement and punishment. The cognitive revolution advanced our understanding of the role that cognition and information processing play in learning. Their reflections also uncovers that with the advance of the social cognitive theory, self-regulation of learning (SRL) emerged as a pivotal element in research, theory, and applications for successful learning. Concomitantly with the growth of educational psychology as a solid theoretical and research-based discipline, the theory, research, and applications of SRL across diverse disciplines emerged as a significant force in educational psychology. Certainly, SRL is still not a familiar concept to some educators (McKeachie, 2011; Moos, 2019), and others who know about it encounter challenges ingraining it into their daily instruction (Lawson, Vosniadou, Van Deur, Wyra, & Jeffries, 2018). Nevertheless, contemporary trends substantiate that SRL is a major leading force in educational psychology and in diverse fields, such as sports, medicine, technology, and music (Bembenutty, Cleary, & Kitsantas, 2013; DiBenedetto, 2018).

As educational psychology enters the third decade of the 21st century, SRL promises to stay at the center of academic success, teaching effectiveness, and human development (Bonner & Chen, 2019; Cleary 2018). It would continue increasing academic interests and desires by exploring new ways by which SRL could provide solutions to teachers in the classrooms, prevent bullying and cyber-slacking (Flanigan & Kiewra, 2018).

The reviews and reflections of forefront Japanese educational psychologists make seminal contributions to research in general educational psychology but also on SRL. SRL will continue expanding its frontiers by providing theoretical, empirical, and practical solutions to problems of social justice, equity, diversity, and inclusion in our classrooms. SRL will increase its tools to facilitate learning with computer-based learning environments and will continue demonstrating how technology and hypermedia can facilitate learning and instruction (Kitsantas & Dabbagh, 2011; Greene, Moos, & Azevedo, 2011). SRL will be at the vanguard of preparing teachers to transition from their educational training to the challenges they would experience in urban and rural classrooms and communities. Teachers, school psychologists, building leaders, and counselors, would be more aware of how to assess and develop SRL interventions focused on enhancing teaching effectiveness and students learning.

I commend Dr. Shuiichi Tsukano for translating *Educational Psychology: A Century of Contributions* to Japanese and praise his remarkable introduction to the special issue of Times Magazine. All esteemed Japanese scholars who contributed to this special issues provided convincing evidence that educational psychology matters! The reviews and reflections of the Japanese scholars reveal essential principles of educational psychology that should be must-read by students, teachers, practitioners, and researchers around the world. These reflections disclose that educational psychology concomitantly with SRL, enhance teacher effectiveness and students’ agency.
This book describes and examines in great detail the 16 educational psychologists who made some significant contributions to educational psychological research from the philosophical foundations in the late 19th century to the research performances in the recent 21st century. In this book, the authors consider the researchers in the period from 1890 to the present. They divide the period into three classifications: the founding period (1890 to 1920), the rise to prominence (1920 to 1960), and educational psychology in the modern era (1960 to the present). They explore the tense interdependent relationship between the researchers’ works, lives, and social situations. They illustrate the development of educational research in relation to the respective historical social situations. The authors document accurately and fully the research theories, methods, results, and researchers’ careers and lives.

Chapter 1 (the founding period) and chapter 8 (the rise to prominence) were written with consideration of the historical and social contexts behind the researchers’ works and lives. These two chapters point to the tense interdependent relationships between the researchers’ lives and social circumstances. This meaningful examination results in this book being far superior to similar books. This is the first outstanding feature of this book.

In the founding period, important social events of the time, such as immigration to the United States, rapid progress in science and technology, the progressive movement, the Great War, and Darwinism are described.

In the rise of prominence, the educational psychology in the 1920s and the 1930s is described in terms of the social history in the U.S. and outside the U.S., theory and practice, reading, writing, language, and the progressive education curriculum. The educational psychology in the 1940s is described in terms of social history, theory, and practice. The educational psychology in the 1950s is described in terms of social history, theory, and practice.

Chapter 14 (Educational Psychology in the Modern Era) wholly and accurately describes the present situation in educational psychology by summarizing volumes of contemporary educational psychology, journals of educational psychology, and the cognitive transformation in educational psychology during the modern era. This is the second outstanding feature in this book.

Educational psychology in the modern era is mainly explained by following the trends in psychological research. The commentary about the present period does not explain the background, the historical social situation. At this point, as at other times, an explanation of the close relationship between researchers and society needs to be made in the future. The book describes and comments on the respective lifespans, research achievements, and legacies of researchers living in each era.

The well known History of Educational Psychology (Educational Psychology Handbook; pp. 990-1004) (Hilgard, 1996; O’Donnell & Levin, 2001) provided a powerful historical discussion prior to this book. It focused on chronological changes in research topics, theories, methodologies, and findings. This method was generally used in the study of psychological history, including in Japan. The way was useful to review the history of psychological research. The method used is a chronological overview of learning psychology, developmental psychology, and clinical psychology, as well as an overview of the respective theories from psychoanalysis, behaviorism, and gestalt psychology. However, such a review did not reveal the initiative efforts of researchers who had made progress in research while questioning the historical and social constraints.

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On the contrary, this book produces original results in the following way. Researchers determine their own research goals, pursue them, and produce their results. Researchers work on their research while surviving their life in specific historical and social conditions. The chosen research proceeds despite some struggles between their desires to achieve success and the surrounding environment. The researcher confronts the barriers (people, society, and political power) surrounding him and tries to overcome them. In this book, the authors try to convey that these struggles are concrete and vivid. This point is the final great feature of this book.

All 16 psychologists have made excellent research achievements in the field of educational psychology. Some of the researchers are well-known to Japanese readers, but others are relatively unknown. The latter scholars are described by authors who are familiar with the respective areas of specialty in order to draw an accurate overall picture. This gives readers accurate information on the lives and works of the 16 scholars included in the book who have made significant contributions to educational psychology.

Let me give an example. From his personal experiences with underprivileged educational conditions, Bandura came to believe that although the effectiveness of the contents of most textbooks is limited, the tool of self-education has no limit in effectiveness. The humor and pathos he gained from his unique social experiences had a profound effect on his understanding of humanity. Bandura established his unwavering conviction regarding the value of human independence. Due to some coincidences in his life, he decided to major in psychology. These accidental effects were later reflected in his theories. He did not believe that he had no control over casualty in his original paper, "the psychology of chance encounters and life paths." He considered how to create the possibility of "accident" in life and how to use this possibility to further self-development. This led to his famous research on observational learning and vicarious learning in his later years. Zimmerman, the author of this book, also joined that study. In that study, social conditions such as those found in climate, natural feature and the educational situation in Canada surrounding Bandura were vividly and humorously described. The descriptions included how he received this information, how it works on his environment, and how he finds his way.

As I have pointed out many times, this book regards the research performances as a product of the struggle between his efforts and the social barriers. In the depictions of the researchers, they were depicted concretely and vividly, and in each of them, it was possible to feel a warm sympathy for the researchers.

The research conditions of researchers in Japan, especially for young researchers, are challenging, partly due to national policies. For this reason, this book would give great courage and encouragement to scholars who are devoting themselves researching in Japan.

I am convinced that this book can gain the sympathy and support of many Japanese readers.
The name “William James” is undoubtedly familiar for Japanese undergraduates majoring in psychology. They are introduced to James’ works in the introductory psychology course, with concepts such as the James-Lange theory of emotion or his famous theory of self-esteem. Japanese psychologists are first impressed with James’ excellent works and then delve into the profound field of psychology. However, most Japanese psychologists (including me) may not necessarily be aware of James’ core ideas on psychology or his contribution to educational psychology. James’ ideas, which are introduced in this chapter, include numerous suggestions for Japanese educational psychology. Readers will be able to recognize that James had predicted the current trends in Japanese educational psychology.

In this chapter, Frank Pajares introduced James’ unique and revolutionary ideas, such as functionalism, radical empiricism, and pluralism. Struggling with the growing positivism and elementalism in psychology at the time, James emphasized the interactive nature of the mind and body, paid great attention to the influence of mental events within individuals, and recommended an interdisciplinary view of the human mind. His claims countered the trends in which human minds were broken down to separate elements and analyzed using strict statistical methods.

James valued the role of the self in the human mind and behaviors. It is the self that is at the center of James’ theory. He theorized about two aspects of an individual’s sense of self, namely, the objective and subjective selves. He was the first to use the term “self-esteem,” which is one of the most popular constructs in modern psychological research, and discussed the mechanism through which an individual’s self-esteem varies in his famous formula, successes divided by pretensions (i.e., expectations of success). Although James was concerned with the individual’s self, he emphasized the dynamic interactions between one’s self and the surrounding environment. This would become the basis for Bandura’s social cognitive theory.

This chapter highlights James as an educational psychologist. According to Pajares, James was the first American psychologist to directly address educational issues (which further suggests that James may also be the father of American educational psychology). He suggested a blueprint of effective teaching, comprising ideas that are shared by several school teachers and educational psychologists today. James emphasized being aware of children’s native interests and prior knowledge, presenting material straightforwardly and clearly, and connecting the new knowledge to their native interests and prior knowledge. These ideas are partly reflected in student-centered education. This seems to imply that James valued the teachers’ expertise and influence on children.

James’ ideas and works in educational psychology include some important suggestions for Japanese educational psychologists. First, the fact that James was continuously concerned with and contributed to education in conformance with the stance of scientific psychologists is encouraging for us. Japanese educational psychology has struggled with the dispute that it is barren. Numerous educational psychologists search for a way to collaborate with educational fields and contribute to educational practices, although the dispute has declined today. Japanese educational psychologists’ challenges and efforts seem to be an extension of James’ significant contribution.

Therefore, Japanese educational psychologists should listen to James’ caution regarding simplistic positivism and elementalism. In the current Japanese educational psychological research, a variety of constructs that capture some aspects of the learners (e.g., motivational traits, learning strategies, academic beliefs) or teachers (e.g., teaching strategies, motivating styles, teachers’ motivation) are proposed. Numerous findings of the effect of some aspects of learners and teachers have been yielded, owing partly to the rapid development of the statistical analytic technique. However, there seem to be little advancements in the research about the nature of dynamic interactions between children and teachers.
As mentioned above, there is a growing concern about educational practices in Japanese educational psychology. A new category, “Practical Studies,” was introduced in 1999 in the *Japanese Journal of Educational Psychology*, which is one of leading academic journals in the field in Japan, and the number of practical studies continues increasing. More educational psychologists are taking an interest in the educational issues occurring in real academic settings or schools, and struggle with the dynamic interactions between children and teachers; nonetheless, their effort may only be halfway through. In the trials, the research methods have gradually multiplied while including both quantitative and qualitative methods. These trends are congruent with James’ pioneer concerns and works.

Another important consideration for Japanese educational psychology that James focused on is the self. There is a trend in which the self-constructs are on the verge of dominating the research on motivation. Paying attention to the role of individuals’ selves in motivational processes seems to be especially meaningful for Japanese educational psychology. Recent research revealed that the self-esteem of Japanese people measured using the Rosenberg scale has gradually declined from the 1980s to the present day, which is unlike the trend for American people (Oshio et al., 2016). Another finding reported lower levels of self-esteem among the Japanese in the world (Schmitt & Allik, 2005). Japanese school teachers, as well as researchers, have numerous concerns in children’s self-esteem. The role played by self in learning is one of the most important issues to examine in Japanese educational psychology and schools.

To summarize, in this chapter, Pajares provides Japanese readers with many insights. Japanese teachers will recognize the importance of paying attention to children’s native interests and prior knowledge. Furthermore, they will acquire the perspective to view teaching as a dynamic interaction between children and teachers. James’ emphasis on practical teaching may encourage the daily efforts of Japanese teachers. Researchers can derive inspiration from James’ works and his life as a scientific psychologist who was concerned with real educational issues. This chapter reminds us of the close relationships between education and the psychological perspective.

Bembenuşty: You have been a scholar of William James. What do you find most fascinating about his work?
Pajares: I was captured by James from the very start, and it has benefited my life immensely. I have written about this in a chapter for Barry Zimmerman and Dale Schunk’s book, *Educational Psychology: A Century of Contributions*, and in that chapter I try to explain why his writing has such a profound influence on me. This is what I wrote, and I hope it explains why he influences me with such power:

“For over 30 years, I have been smitten with William James. I read him for work and for play. I read him for guidance. I read him for inspiration. I read him when my spirits are low. I read him to discover what I really think. I read him to learn. I am never disappointed. My admiration borders on adulation. How could anyone fail to see the profundity of this man’s wisdom, the elegance of his thought, or the simplicity of his uncommon common sense.”

All this is still true except that it is now getting close to 40 years. Sigh.

Researchers, graduate students, undergraduates students studying psychology know the name Thorndike. They know some of his achievements, such as his research on learning and transfer or his dictionaries. However, the majority of novices in psychology do not know all of his remarkable achievements, even if they know about him. Paradoxically, this shows how broadly his contributions have spread in educational psychology, leading to his name being known through his various accomplishments.

Revolutions in science occur when dominant models or theoretical frameworks are overturned and replaced by new ones. From this perspective, Thorndike has played a significant role in radically reforming basic psychological notions regarding learning, transfer, and individual differences. This chapter is the largest in this book (42 pages) and introduces Thorndike’s lasting contributions to educational psychology.

Thorndike’s contributions to educational psychology include a wide range of fields, and this chapter systematically discusses his contributions from three perspectives: ideas, achievements, and values. First, learning, transfer, and individual differences are discussed as ideas. Second, dictionaries, educational materials, and tests are discussed as achievements. Third, a scientific approach, quantitative data, and practical issues are discussed as values. These contributions closely relate to Thorndike’s background and beliefs. This chapter thoroughly explains how his research interests changed, leading to his accomplishments.

You may associate Thorndike’s name with fundamental research, such as his initial animal experiments and the thoroughness of his scientific approach. However, he placed great emphasis on practical issues. This chapter reveals that he had the same amount of interest in both theoretical and practical aspects, indicating the extent of his volition to improve society through research.

Thorndike focused on the interplay between education and psychology. He valued dealing with implications derived from educational practices and thinking about how to apply fundamental findings to such practices. Producing several dictionaries, educational materials, and tests represent his profound interest in educational practices.

Thorndike’s ideas have an important meaning for psychologists in Japan. Current trends in psychology include developing and applying a wide variety of methodologies, such as brain imaging and mathematical modeling. By having interdisciplinary interests and making use of such methodology, current psychologists are still absorbed with expanding learning models based on the association between a stimulus and response. Therefore, the attractiveness of Thorndike’s reinforcement learning as a research object has captured the interest of current psychology.

Additionally, current psychology in Japan discusses how psychological findings are linked to educational practices for each subject (Nishihayashi et al., 2017). From this perspective, the conceptualization of motivation in subject learning, based on the trait-domain-situation model (Kage, 2004; Vallerand & Lalande, 2011) and the increase in studies on domain-generality/specificity of learners’ cognitions and beliefs (Shinogaya, 2018), is rooted in ideas of transfer and domain specificity. Thus, Thorndike’s ideas have been the central focus of psychologists in Japan.

Thorndike’s ideas, achievements, and values have continued to influence educational practices in Japan for more than a half-century after his death. Using rewards to direct children toward required behaviors is one of Thorndike’s major ideas that is popular in educational practices in Japan. Additionally, An Inventory of English Constructions, one of his dictionaries, was translated into Japanese and repeatedly revised. Many dictionaries used by Japanese language teachers are based on his word list in The Teacher’s Word Book.

Moreover, current educational practices value “teachers who continue to learn,” as they apply their what they learn to their teaching practices and create lessons accordingly (Central Council for Education, 2012). This notion is very similar to Thorndike’s emphasis on both research and educational practice and is now a universal standard for teachers in Japan.

This chapter reminds educational psychologists and teachers in Japan of how significant Thorndike’s contributions are and how closely his research relates to daily life. Now—a century after psychology as a science was established—, issues on learning, transfer, and individual differences, for which Thorndike has laid the foundation, are a central theme in educational psychology. Educational psychologists acknowledge that their interests are rooted in Thorndike’s ideas.

Further, presenting authentic mathematical problems or accurately measuring children’s abilities are still crucial in current educational practices. Teachers reading this chapter will realize how many of Thorndike’s achievements are closely related to their everyday practices.
This chapter focuses on the founder of behavioral analysis, B. F. Skinner, who is well-known for “operant conditioning,” “radical behaviorism,” “applied behavior analysis (ABA),” and so on. Many of his achievements are related to ways of learning and teaching knowledge and skills, and they have influenced education and learning approaches significantly. Many people, especially those who work in education and medical care, know of Skinner and his achievements, but few people are aware of how he lived and what led to his special accomplishments. This chapter describes his life and his thoughts, as well as how his conceptions became his triumphs. Since Skinner constructed models, invented, and experimented in childhood, he showed that he was an engineer from a young age. While a university student, he studied English literature, anatomy, and physiology. He had a variety of interests. In his 20s, he aspired to be an author and sometimes a scientist. He mastered inductive reasoning, such as that espoused by F. Bacon; additionally, he read studies by I. Pavlov and J. B. Watson. When did he first meet F. Bacon? Surprisingly, it was during his childhood. Later, he decided to study psychology and entered the university again, saying that “science was 20s art.”

Skinner’s numerous achievements have connections with education and medical care. The Skinner box is famous, even with the general public. While studying a specific reaction and the relationship of this reaction to reinforcement, he developed technology to control the way one learns (i.e., programmed learning). In programmed learning, learning materials are studied in detailed steps or frames. Next, students arrange the learning contents systematically and sequentially to form a logical structure.

Furthermore, to control ways of learning, Skinner concentrated on recording his research subjects’ behaviors constantly and strictly. He promoted the three-term contingency as a unit of analysis. The three-term contingency (also known as ABC analysis) in operant conditioning describes the relationship between a behavior, its consequence(s), and the environmental context. It is often used within ABA to modify the frequency of socially significant human behavior.

Skinner’s behavioral theory influenced educational psychology considerably. The ideas of behavior therapy and behavior analysis are very important for educational/school psychology and special education. In Japan, many psychologists and schoolteachers engage in practical studies to energize psychoeducation curriculum and new skill training with innovations. These studies are sometimes backed up by programmed learning and ABC analysis.

In the fifth and sixth chapters, reactions and reflections regarding the meaning of this chapter in terms of Japanese educational psychology are presented. Recording behaviors continually and strictly is very important in ABC therapy. Educational psychologists, medical care staffs, and schoolteachers regard this activity as valuable. When we evaluate persons, our subjective judgments—such as the halo and leniency effects—could be involved. Unfortunately, we see persons incorrectly sometimes. Furthermore, teachers are not gods; they are people. Therefore, when their views of students are not correct, students lose their desire. If teachers record behavior constantly and strictly, students will not become discouraged because of erroneous evaluations.

ABC therapy is used in Japan for treating depression and providing nursing care for autism. Programmed learning forms the basis for calculation exercises and Chinese character (kanji) exercises. University students often study via e-learning, which has its basis in programmed learning. Because of the progress and spread of IT technology, children enjoy studying with tablets. Programmed learning has contributed to the development of mechanisms for ICT-mediated learning.

Skinner’s ideas are foundational not only for education, but also for home life and home discipline, such as reinforcing behavior with rewards and punishment. Many people know and use at least one of Skinner’s ideas.

This chapter describes how Skinner’s social philosophy, scientific approach, and techniques have potential for the present and the future; additionally, they have been continuously applied for years. Skinner’s scientific approach to human behavior certainly has been supporting basic actions in psychology (Catania, 1998), education, medical care, and home life.

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A general introduction to the chapter

Jean Piaget’s stage theory of cognitive development had a profound influence on US education. Piaget had proposed that children’s learning is limited by their current level of cognitive development. This theory differed from US learning theories of the 1950s and 1960s because he proposed that naturalistic instructional methods that emulated informal learning processes in children’s daily lives would be effective when they were ready to learn the target concepts. He also proposed that informal learning processes involve the active self-discovery of new concepts. However, the results of the learning experiments on conservation concepts in the concrete-operational period conducted by educational psychologists in the US were not ideal for supporting Piaget’s claims. In other words, these experiments indicated that developmental constraints on children’s learning are not strong, and that nonself-discovery procedures produced more excellent learning than self-discovery procedures.

A highlights of major points of the chapter

Piaget proposed that children’s ability to learn new concepts will be constrained by their current levels of cognitive development. Many learning experiments had been conducted as of the early 1980s by US educational psychologists on the concept of conservation during the concrete-operational period described by Piaget. Specifically, children that exhibited zero-correct performance on pre-tests and were still in the first half of the age range for the preoperational period were trained. The results showed learning effects because the post-test indicated that learning had transferred not only to the trained concepts but also to untrained concepts. These results failed to support Piaget’s view that children’s ability to learn the conservation concepts will be constrained by their current levels of cognitive development.

Piaget also claimed that children’s basic cognitive architecture evolves on its own without the need for explicit training by adults, and that the most effective learning procedures were those that closely emulated everyday processes. He also considered that effective learning procedures must incorporate active self-discovery of new concepts. However, studies on the relative effectiveness of learning procedures based on Piaget’s Naturalism and Constructivism, compared to learning procedures that were developed in the US indicated that nonself-discovery procedures were more effective than self-discovery procedures. Self-discovery procedures were not found to be superior to nonself-discovery procedures.

Reflection of the meaning of the chapter to Educational Psychology.

Perspectives on children’s learning in Piaget’s theory of cognitive development had a profound influence on Educational Psychology. This influence was quite different from that of the predominant learning theories in the US up to the 1960s. Learning theories in the US in the 1950s and the 60s did not assign a significant role to developmental processes, and treated them by default as noise factors in children’s learning. On the other hand, Piaget claimed that developmental processes were related to children’s learning. Piaget’s findings were criticized based on the results of several subsequent empirical studies. However, the questions on development and learning that were raised by Piaget had a significant effect on the progress of research on contemporary developmental and educational psychology. Contemporary educational psychologists often study children’s learning processes based on how and when children perceive things. The background of this practice can be found in the accumulation of studies, including those by Piaget.

Reflection of the importance of the chapter to Japanese educational psychology

There has been much discussion in among Japanese educational psychologists on the relationship between educational psychology and educational practices, especially in relation to teaching and learning school subjects. The development of subsequent studies based on Piaget’s theory is important in this context because his theory considered the relationship between educational psychology and educational practices. This chapter describes the process of once again questioning Piaget’s theory based on the results of theory-based experimental research. Furthermore, it would also be important to reexamine Piaget's theory from a practical point of view. Piaget’s theory and the development of subsequent research are expected to provide important recommendations for discussion on educational psychology in Japan.

Japanese’s recommendations to teachers and students

In Japan, inquiry learning will be further emphasized in the future because of revisions to curriculum guidelines. Inquiry learning emphasizes that students are proactive in setting tasks, collecting information, organizing and analyzing data, making conclusions. Students deepen their understanding of specific, or cross-sectional, and integrated subject fields, as well as individual subjects through autonomous problem-solving. Therefore, inquiry learning is intimately related to Piaget’s views that are based on Naturalism and Constructivism. Piaget proposed the theoretical assumption that children proactively work on the environment on their own and acquire knowledge through the process of creative invention, rather than passively acquiring knowledge from adults.

This chapter describes that self-discovery learning was not regarded as superior to nonself-discovery learning because learning experiments conducted on the concept of conservation compared relatively self-discovery learning proposed by Piaget with nonself-discovery learning. However, self-discovery learning proposed by Piaget will encourage children with increased experience in apprehending and solving problems from a long-term perspective by themselves to deepen their comprehensive understandings and be more motivated to understand. It is considered difficult to compare learning processes of self-discovery learning and nonself-discovery learning by using experiments under closely controlled conditions.

When inquiry learning is promoted in Japan, teachers’ comprehension of the processes by which each student deepens their understandings of different problems through inquiry learning will become an important issue. As Piaget indicated, perspectives on how students proactively discover discrepancies between their prior concepts and actual outcomes and inventing new concepts that encompass actual outcomes would provide important clues on this practical issue.

Conclusion

Piaget proposed theories that became the starting point of progress in developmental and learning studies and had a profound effect on educational psychology. Since then, much empirical research on Piaget’s findings have accumulated, and some of the findings of this research do not support Piaget’s claims. Nevertheless, many different studies are being inspired to this day by the questions on child development and learning that were proposed by Piaget. It is hoped that current and future researchers will take over Piaget’s gift and further the growth of developmental and learning studies.

968 words (except headings).
This chapter reviews the legacy of Robert M. Gagné for educational practices in Japan. Gagné's contributions to educational psychology, particularly his work on instructional design, have had a profound impact on modern educational practices. His theory, which evolved through five editions of *Principles of Instructional Design*, provides a comprehensive and scientific approach to designing instruction. The significance of Gagné's contribution to educational psychology—designing and developing the instructional system—is recognized by many modern researchers and practitioners.

Gagné's career began with his research on the transfer of training. This early research indicated the necessity to identify the types of learning behaviors and environments that support effective learning for each type. Secondly, he proposed a theory of learning hierarchies in the late 1960s. This theory perceives human beings as systems for information processing and attempted to clarify what type of skills were necessary as a prerequisite for learning skills.

Furthermore, Gagné's efforts proved a success, and he proposed a model for instructional design. This raised the importance of three elements: the importance of behavioral objectives, the organization of learning content, and the need to assess learning outcomes. Identifying the subjects for these instructions can help determine the internal and external conditions that promote learning. Gagné particularly identified five types of learning domains: attitudes, motor skills, verbal information, intellectual skills, and cognitive strategies. He considered each category to consist of its own psychological activities. He viewed the development of learning content from a two-dimensional perspective—the internal and external conditions of learning—in order to analyze the conditions for learning. External conditions refer to the learning environment and its resources, while internal conditions refer to learners' capabilities, emotions, and goals. Considering the above, instructions are actions that prepare external events designed to support internal learning processes. Gagné proposed a list of processes, which are famously known as the *Nine Events of Instruction*. Lastly, he suggests the importance of conducting a planned and systematic assessment of learning outcomes.

The significance of Gagné's contribution to educational psychology—which was designing and developing the instructional system—is recognized by many modern researchers and practitioners. His work is extremely significant as he adapted theories of the psychology of learning and cognitive psychology, such as memory and learning, in addition to creating comprehensive theories, which included a variety of learning content for children and students. Gagné's work, which perceived human beings as systems for information processing and clarified the internal and external conditions for learning, can be said to have provided teachers with an instructional design perspective. Japan is also emphasizing the importance of evidence-based education in recent years. Gagné's theory of instructional design, which provides a comprehensive, scientific approach to designing instruction, is considered a theory that should still be widely considered as noteworthy.

Instructional design is also introduced in Japan in many technical books and general books. For example, the complete translation of the fifth edition of *Principles of Instructional Design* was published in 2007, and it has been widely read. As a research field, instructional design is used more frequently by researchers in the field of educational technology rather than those in educational psychology. The *Japan Journal of Educational Technology* also augments theories, suggests new assessment methods, and provides practice reports in various fields, ranging from the level of compulsory education to higher education, as well as in professional education including medical care and nursing.

Furthermore, there is a global shift in thinking regarding academic ability, from simply memorizing acquired information to developing problem-solving abilities (i.e., competency) through the utilization of acquired information. Considering these trends, Japan is also emphasizing *proactive, interactive, and deep learning*, where children aim to learn subjectively, interact with others, and read teaching materials, as well as link the learning content with themselves and society for deeper understanding. However, despite this trend, some teachers are having difficulties determining what specific points should be stressed, and what types of lessons should be designed. In addition, while this topic of lesson planning often focuses on teaching methods (e.g., group work and debates), the appropriate teaching methods vary depending on the purpose of the lessons. Gagné’s concept of instructional design provides a strong theoretical perspective for Japan’s educational practitioners who are aware of the problems mentioned above.

This chapter carries significance as it introduces Gagné’s career as a researcher to Japanese readers. Gagné’s career enables Japanese readers to conceptualize education from an engineering perspective and learn fundamental viewpoints, which will help in building an effective and efficient learning environment. The legacy of Gagné is a powerful guideline for modern Japan, which in many ways is reaching a turning point in education.

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Chapter 17 surveys the research career of the American psychologist Dr. Jerome Bruner, reviewing and interpreting his contributions to two broad fields: cognitive psychology (especially cognitive development), and cultural psychology/anthropology. These two overviews will provide us with useful vantage points from which we can appreciate his lasting legacy to education. In the chapter, Bruner’s evolution as an educational theorist was traced through analyzing his four major books on education, *The Process of Education* (1960), *Toward a Theory of Instruction* (1966), *The Relevance of Education* (1971), and *The Culture of Education* (1996).

First, we will consider his activities from the first angle: cognitive psychology. They are exemplified by *The Process of Education*, perhaps his most well-known work, in which he surveyed and formalized expert discussions at the historical Woods Hall Conference he chaired in 1959. In the book, Bruner interprets education and cognitive development from a structuralist perspective based on the theories of Jean Piaget. Bruner’s theory of cognitive development characterizes the process as consisting of three sequential modes of cognitive representation: enactive, iconic, and symbolic. Young children first learn how to represent the world through actions, then images; finally, their representational repertoire expands to include words, numbers, and other arbitrary symbolic systems.

The second viewpoint is cultural psychology/anthropology. In the early 1960s, while exploring Piaget’s notion of conservation of quantity—specifically, how the ability develops in Senegalese children—he discovered that his contemporary’s theories were much more subject to cultural constraints than originally believed, leading him to advance a variety of cross-cultural interpretations of cognitive development. Patricia Greenfield, one of the authors of chapter 17, was Bruner’s student at the time, whose collaboration with her mentor would continue for many decades thereafter. She surmised that children’s cognitive development was shaped by the specific cultural environment and school environment in which they grew up. In *The Culture of Education*, published subsequently in 1996, Bruner would discuss various issues at the intersection of education and cultural psychology.

Bruner’s legacy to educational psychology consists of two main components. The first is his adoption of a cognitive approach to education and educational psychology. Indeed, it was he who introduced Piaget to the education community in the United States. The ‘cognitive revolution’ he propagated would influence educational thought not only in his home country, but all over the world. The second is the attention he drew towards understanding education from a sociocultural point of view. For example, research based on his cross-cultural data would motivate the analysis of the role of poverty in educational development in the 1970s. Later, the publication of *The Culture of Education* would secure educational psychology’s place as an essential component of cultural psychology.

How then has Bruner’s work affected educational thought and practices in Japan? Most well-known must be his influence on the country’s official curriculum guidelines when they were revised in the late 1960s. Specific educational contents, and the grades in which they were taught in school, were reorganized to introduce them to younger students, in effect exposing them to higher-order knowledge earlier in their schooling than ever before. Japan’s national curriculum at the time was strengthened by this emphasis on the structure of knowledge, a debt clearly owed to Bruner, and a shared belief that “any subject could be taught to any child at any age in some form that was honest”. These movements led to the idea of creating readiness of children.

We should take a moment to think about the insights into education afforded by Bruner’s work. First, his emphasis on the structure of knowledge should remind us of the need to consider the structure of each academic subject in the curriculum: specifically, how things are related to one another. One of the essential goals of education is to help children to construct structural representations of such subjects at a relatively abstract level. Second is his demonstration that education is subject to cultural constraints. Culture exists on a wide variety of scales, from local environments such as schools and households, to broader ones such as the entire world. How children develop cognitively, and how they perceive things, are by no means uniform across cultures; they respond to education in a highly individual manner, against a backdrop of a wide array of cultural influences.

Bruner’s work has had outsized influence in the world of education, forming one of the conceptual foundations of education in Japan today. However, many of today's educators seem to know little about his influence on education. Taking some time to reflect on his achievements, especially as they relate to the philosophy and ideals of education, should give us all cause for admiration.

Dr. Takatoyo Umemoto is a lecturer at Kyoto University of Foreign Studies. He obtained his Ph.D. in psychology at Nagoya University in 2013. His main research interest is on learners’ self-regulation of their motivation.
Albert Bandura is one of the greatest psychologists who constructed grand theories of human agency. He continues to influence significantly psychological research all over the world. This chapter (Zimmerman & Schunk, 2003) provides a biography of his life and covers his research topics and practices throughout the years. He is currently approaching the core of a principle of psychology, and his theories have achieved remarkable development.

Important concepts like social modeling, self-efficacy, and self-regulation have been adapted to almost all research domains: education, sports, health, organizational environment, medicine, and politics. The ideas and findings Bandura presented in his books and papers are quite profound.

He once made a striking and impressive comment that to strengthen and enhance students' self-efficacy and self-regulation of learning would give students useful tools to build the capacity to continue learning on their own for a lifetime. As a student and now, as a researcher, I can feel his greatness. Bandura has accomplished the remarkable feat of formulating the essentials of educational psychology and self-regulation of learning theory.

Bandura’s research impact on Japanese educators

From the middle of the 20th century, Bandura’s theories and research findings have stimulated and inspired Japanese researchers. Looking at recent research trends in Japan, we fully understand Bandura’s ideas continue to have a profound impact on many Japanese researchers. Self-efficacy is one of the most pervasive concepts in every research field. This core belief is the necessary foundation of human motivation, performance, and well-being. Self-efficacy plays a critical role as the antecedent of human behavior.

Japanese researchers examined various issues of instruction and learning processes. For instance, what are the relationships between self-efficacy and causal attribution? How does self-efficacy predict students' use of learning strategies? How does self-efficacy support the knowledge acquisition mechanism? Of course, self-regulated learning is one of the most important concepts in Japan.

Some Japanese researchers are interested in examining the relationship between human development and self-efficacy beliefs. For example, they ask research questions, such as what are the relationships between self-efficacy and vocational preference? How does carrier decision-making self-efficacy predict students' adaptive behavior?

Other Japanese researchers are engaged in exploring research topics in educational and clinical psychology. To illustrate, some researchers have examined the effectiveness of self-efficacy on preventing depression and stress coping processes.

Some Japanese researchers are trying to verify the validation of Bandura’s theory across diverse research areas. Recent research trends in Japan seem to be similar to research in the United States. Japan has a national educational philosophy and goals similar to key competencies. To build students' ability to learn and think on their own is essential in Japanese school education. Technical terms like self-efficacy and self-regulation are sometimes used in Japanese schools. Bandura’s research and theory still have a significant effect on not only research professionals but also practitioners.

Bandura’s research impact on Japanese educators

I have been interested in self-regulated learning research, and I have emphasized self-efficacy as a significant antecedent variable. Next, I will describe two studies my colleagues and I have conducted.

Ito and Shinto (2005) examined a causal model for the relationships among self-efficacy, anxiety, self-regulated learning strategies, and persistence in learning. The following instruments were used: self-efficacy scale; the scale of feelings of anxiety while studying; cognitive self-regulated learning strategies scale; self-motivational strategies scale; and the subscale of the Gakugeidai Academic Motivation Inventory measuring a lack of persistence in learning. These scales were administered to 449 junior high school students twice, one month before and one week before the examination. The results, analyzed using structural equation modeling, were as follows: (1) self-efficacy predicted cognitive self-regulated learning strategies and intrinsic regulation strategy positively, whereas self-efficacy predicted extrinsic regulation strategy negatively; (2) feelings of anxiety influenced all three self-regulated learning strategies positively; (3) intrinsic regulation strategy was related negatively to a lack of persistence, but extrinsic regulation strategy was related positively to a lack of persistence.

Umemoto and Ito (2016) conducted a longitudinal research to examine the relationship between self-efficacy, intrinsic value, and emotional engagement during one semester of university. Self-report questionnaires were administered three times to 217 undergraduates at three universities. The results of the cross-lagged panel model indicated that intrinsic value at time 1 was a positive predictor of emotional engagement at time 2, self-efficacy at time 2 was a positive predictor of intrinsic value and emotional engagement at time 3, and emotional engagement at time 2 was a positive predictor of self-efficacy and intrinsic value at time 3. These results indicated that the timing when expectancy influenced learning was different from the timing when value influenced learning during one semester. Self-efficacy, intrinsic value, and emotional engagement in learning are vital to undergraduate students’ academic success.

Bandura’s theories are excellence and practical. From now on, I will keep learning from the vast supply of research results he has produced for many years.

References

Ann L. Brown was a proficient researcher, and introducing all her contributions is a challenging but very worthwhile task. Her research aims at improving academic skills and covers extensive knowledge about teaching, learning, and social contexts. Some Japanese educational psychologists do not understand her work; however, this chapter sheds light on her research and practice, showing that they are a significant theme in educational and cognitive psychology.

Brown’s earliest work targeted human memory. Specifically, she focused on the role of memory strategies and the effects of developmental factors on human memory. For instance, some younger learners’ performance was inferior to others because they had difficulties in selecting appropriate memory strategies when they performed tasks. Furthermore, she examined learning strategies for performing text comprehension tasks.

Later on, she focused on learning methods and proposed “Reciprocal Teaching.” Reciprocal teaching is one of the interactive learning methods in which teachers and learners discuss text content. This method consists of predicting, questioning, summarizing, and clarifying. Then, she launched the Fostering Community of Learners (FCL) program with Joseph C. Campione. This program was based on Vygotsky’s theory, and it involved children’s working on their zones of proximal development. Teachers and peers were expected to facilitate the improvement of learners’ academic performance.

She was a pioneer of the cognitive revolution. She emphasized learners’ active learning, self-reflection, and socialization. Before the cognitive revolution, behaviorism was the dominant theory explaining learning and regarded learning as a stimulus-response reaction followed by reinforcement or punishment. She was highly interested in learners’ activeness, such as self-regulation and self-control. This point is related to educational psychology.

Her contributions include a wide range of research on human memory, text comprehension, learning methods, and educational systems. Recently, Japanese psychologists have faced some educational challenges from the perspective of cognitive psychology and have broadened their knowledge (Koyasu, Kusumi, Saito, & Nomura, 2016). This trend is probably affected by her research and practices. Additionally, learners’ activeness and reflection, crucial points of her research, were considered essential factors in Japan. For instance, several studies on self-regulated learning have been conducted.

Several studies in Japan have reported that reciprocal teaching, proposed by her, is an effective learning method. To illustrate, Kiyokawa and Inuduka (2003) proposed a new teaching framework based on reciprocal teaching, "Interactive Explanation," and examined its effectiveness and applicability. Results indicated that students’ reading performance improved, and students could understand the main point of text and text structure. Machi and Nakaya (2014) examined the effects of a reciprocal teaching intervention on small-group learning conditions in elementary mathematics classes. Results showed that the reciprocal teaching intervention group had improved academic performance compared to the control group. In summary, learning methods, such as reciprocal teaching, have been used and applied in Japanese educational practice.

This chapter offers numerous pedagogical implications for Japanese educational psychologists and educators. Brown was a talented researcher, and she respected and appreciated teachers’ work and motivation. Accordingly, her research themes cover authentic tasks for teachers and students. She focused on improving learners' academic skills, which makes her research very significant for research and practice.
Like in the United States and many countries in Europe, educational psychology plays a vital role in educational research and practice in Japan. From kindergarteners to graduate students, many students are supported by the educational system that draws on critical theories from educational psychology.

Many areas of educational psychology—for example, learning and instruction, school psychology, and educational counseling—are related to educational practice in Japan. Additionally, teaching and teaching practices, self-regulation of learning, and their applications are receiving growing attention among Japanese psychologists and educators.

The Impact of the Book *Educational Psychology: A Century of Contributions in Educational Psychology in Japan*

Almost all the great scholars appearing in the book *Educational Psychology: A Century of Contributions* are well-known to Japanese psychologists and educational researchers. Pioneers of the field, such as William James, Jean Piaget, and B. F. Skinner, are routinely mentioned in textbooks of education and psychology, and their names are frequently key terms in the final examination in psychology courses.

The recent work of luminaries, such as Robert Gagné, Jerome Bruner, and Ann Brown, have also significantly influenced Japanese teaching programs and educational policies. Their educational theory and practice have provided valuable suggestions on various aspects such as how to use and apply educational technology for students, how to enhance students' critical thinking and understanding, and how teachers could instruct and interact with students in the classroom.

**Educational Psychology in Japan**

The Japanese Association of Educational Psychology (JAEP), founded in 1959, is the leading national academic organization in this field. Its purpose is to promote the presentation of research results in educational psychology and to contribute to its development. Currently, over 6300 persons, including researchers, graduate students who majored in psychology, and teachers and educational practitioners, are members of the JAEP. With a history of over 70 years, it is one of the major associations in the field of academic psychology in Japan.

The *Japanese Journal of Educational Psychology* (JJEP) is the main bulletin of the JAEP; it is issued four times a year and has 67 published volumes to date. It publishes two types of original articles and applied field research. The applied field research articles are a vital feature of JJEP, which emphasize not only academic strictness and objectiveness but also practical implications with ecological validity in educational research. Whole-classroom intervention research, qualitative analysis of student learning, and practical applications for children with special needs are examples of applied field research.

Additionally, an annual conference of the JAEP is held at various places in Japan. Over 2000 participants, ranging from researchers to practitioners at junior and senior levels, participate and present their research and practices in these meetings.

Finally, William James, B. F. Skinner, Albert Bandura, and Barry J. Zimmerman, all distinguished giants of educational psychology from the United States, have made a profound impact on world psychology, and an even more significant impact in East Asia, including Japan. Many Japanese researchers and teachers have been influenced by their outstanding findings and accomplishments and will continue to learn from them.

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Professor Shuichi Tsukano deserves much credit for having translated the book “Educational Psychology: A Century of Contributions” (2003) into Japanese. It described the lives and work of 16 major researchers (e.g., William James, E. L. Thorndike, and Albert Bandura) whose work has shaped the field of educational psychology. To enhance the impact of this translation, ten Japanese scholars were asked to review the work of a major researcher. Their insightful probing, analysis, and further elaboration revealed the book to be well-suited to guide and encourage Japanese students to pursue research careers in educational psychology. Professor Tsukano’s enlightened leadership in the translation of this important book has been essential and has paved the way forward for Japan’s future contributions to the field.

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This review provides an excellent description and critique of the book Educational Psychology: A Century of Contributions, translated to Japanese by Professor Shuichi Tsukano from Toyama University in Japan. Dr. Motoyuki Nakaya and Dr. Ito Takamichi are commended for recruiting distinguished Japanese educational psychologists to review the chapters with such impressive and captivating educational applications. It is evident that the reviewers studied the book in great depth. I am especially pleased that the reviewers believe the book will encourage other researchers to consider this book as a road map for all their professional endeavors and research. With persuasive and fascinating reviews, like the one the reviewers have done, is how our profession advances. It also is wonderful to see that topics in educational psychology are getting so much international attention. I certainly hope that this book will make a difference in the careers of many talented teachers and researchers.