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PSYCHOLOGY FOR TEACHERS: AN OVERVIEW OF THE DISCIPLINE PSYCHOLOGY AND ITS RELATION WITH EDUCATION

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Abstract: This paper wishes to invite local educators, researchers, and psychologists to share their insights into the roles of psychology and psychologists for teachers. It is not intended to provide standardised answers. The paper raises several questions: Should psychology be perceived as a core subject, a supplementary discipline, or a part of the curriculum of teacher educational programs? What are teachers' and educators' concerns? How can psychological models and theories be applicable to education? Are there Singaporean psychological models of teacher educators? How can local psychologists design socio-culturally appropriate models and theories? The first section of this paper elaborates briefly on field psychology. Several questions and doubts related to this field are presented. The second section defines educational psychology, and poses some questions related to this sub-discipline. The third section evaluates the contents and directions of psychological courses for Singaporean teachers. Lastly, reflections on the role of psychology for teachers for the next century are presented.

Introduction

Psychology in the last few decades: Since the fifties, psychologists and other social scientists have been trying to "redefine" the newly emerged discipline of the 19th century – psychology. Should psychology be defined entirely according to the guidelines of the pure sciences? Should psychology be redefined with reference to both the social sciences and pure sciences? Or should psychology be further granted its scientific status and at the same time develop frameworks according to different socio-cultural settings? In the midst of these discussions, the development of psychological models, theories, and tests continues to expand its boundaries across various disciplines and socio-cultural settings. Examples of interdisciplinary studies are the information processing model (the understanding of human memory from the perspective of how information is stored and organised) and the neurological explanation of human thinking (neuroscience and psychology). Examples of intercultural studies are such as the understanding of human behaviour from the individualism versus the collectivism dimension, multicultural counselling, multicultural education, and bilingualism.

Several messages from the past few decades: Throughout its development in the past 122 years (the year 1879 denoted as the beginning of scientific psychology), psychology emerges as a rapidly developing interdisciplinary and intercultural field. However, psychology faces challenges in verifying the validity and reliability of its theories, models, and tests in other disciplines. Psychology studies human behaviour and thinking. It is thus important to find out whether or not its models, theories, and tests are applicable to all social sciences. Can psychological theories, models, and tests be employed to pure sciences and engineering? Must psychological theories, models, and tests be modified before they can be applied to other disciplines?

Awareness to expand the geographical and socio-cultural domains of psychological studies (beyond Western Europe and North America) has created opportunities for local psychologists and social researchers to participate in the study of the behaviour and thinking of their fellow members. What roles do local psychologists play in the future development of psychology? Are local psychologists

competent in designing the study of people in their own socio-cultural settings? Are they confident in conducting their own studies? Do they receive enough resources and support?

Psychologists are scientists and cultural professionals. How do they improve and create theories, models, and tests that are applicable to human beings of the next century? What kinds of socio-cultural problems do they predict? What kinds of measurements would be plausible to try to solve unpredictable socio-cultural problems? Are experts' views perceived as the only views for the establishment of psychological theories, models, and tests? How can psychologists integrate the layperson's views into the development of new theories, models, and tests?

Scopes of this paper: This paper does not intend to provide standardised answers for the questions posed. It intends to arouse the interests of local researchers and psychologists to explore possible research questions related to the application of psychology within the Singaporean context. The paper thus limits its scope of discussion to the role of psychology in teacher education, in general, and the practicality of psychological theories and models within the context of the Singaporean education system.

The first section of this paper elaborates briefly on field psychology. Several questions and doubts related to this field are presented. The second section defines educational psychology, and poses some questions related to this sub-discipline. The third section evaluates the contents and directions of psychological courses for Singaporean teachers. Lastly, reflections on the role of psychology for teachers for the next century are presented.

Educational Psychology

What is educational psychology? In their review on the first century of its development, Walberg and Haertel (1992) described the major function of educational psychology as a selective canal between the academic discipline of psychology and the applied field of education. They claimed that educational psychology "has mediated the disciplines of psychology and education, and educational psychologists characteristically have applied psychological principles to the practice of education" (Walberg & Haertel, 1992, p.6). Hans-Peter Nolting and Peter Paulus (1992) in their book entitled "Paedagogical Psychologie" (pedagogical psychology), discussed the scope of educational psychology from two disciplines, "psychology" and "education" (Unterricht or Erziehung). They referred to it as a sub-discipline of psychology as well as an applied psychology. In brief, in German higher institutions, psychology is grouped into two major categories namely, fundamental (grundlegende) psychology and applied (angewandte) psychology. General psychology, personality psychology (or differential psychology), developmental psychology, and social psychology belong to fundamental psychology. Educational psychology such as clinical psychology, organisational psychology, medical psychology, transport psychology and others are grouped into applied psychology.

Why is educational psychology a sub-discipline of psychology? Nolting and Paulus (1992) suggested two reasons for this question. The first reason is drawn from the viewpoint of science in which psychology deals only partly with education. Scientific psychology investigates psychological processes (e.g., thinking, emotion, and motivation), dispositions (e.g., thinking styles, emotion), and psychological processes related to the dispositions (e.g., learning processes). As such, educational psychology studies the psychological processes and dispositions of learners-and-educators. However, the discipline of education encompasses a wider scope which includes other themes such as learning materials, social institutions, schooling rights, etc., and thus is related to other disciplines such as sociology and pedagogy.

The second reason concerns mainly the nature of psychological studies. Psychologists investigate a study of a certain group of people from the perspective of a designated situation. Often, results of a study are reliable and valid within the contexts of a target group, and thus can be applied to people of similar characteristics in similar situations. Unlike psychologists who focus on “designed” studies, educators emphasise the practical aspects of everyday human behaviour and thinking. The latter emphasises the relevance of a theory or a study in understanding individual students’ behaviour, thinking, or emotion.

Questions: Several questions are posed from the contents of the sub-discipline of educational psychology. Is educational psychology the application of psychological theories and models in teaching and learning? Can psychological theories and models be employed in the classroom setting? How compatible is human behaviour in a controlled environment with those found in a classroom setting? Are there psychological theories and models developed from classroom observations? Do psychologists or educators conduct classroom-based research? What are common themes of psychology for teachers? Three reviews are presented in the following paragraphs with the intention of giving an overview of recent themes of educational psychology.

Pintrich, Cross, Kozma, and McKeachie’s (1986) review: These four authors reviewed the extensive and rapid development of the sub-discipline of “instructional psychology”, a synonym of “educational psychology”. Instructional psychology moved from external situational variables to internal cognitive variables, had closer connections with cognitive theories of motivation, focused on school tasks, and had a greater emphasis upon individual differences. Three main areas of concern of instructional psychology were listed: *learner characteristics*, *instructional processes*, as well as *tasks, content, and outcomes*. Under the area of *learner characteristics*, Sternberg’s triarchic theory of intelligence and Gardner’s theory of multiple intelligence were illustrated. Attributional theory, expectancy-value models, and test anxiety were three topics presented under the sub-title *motivation*.

Under the area of *instructional processes*, four themes were highlighted namely, media and technology, instructional design, classroom instruction and teaching, and testing and instruction. The major concerns of these themes were mainly on learning processes in a classroom that uses media, and on teacher involvement in designing appropriate assessments or tests. Under the area of *tasks, content and outcomes*, Pintrich and colleagues listed two major scopes. The first scope of discussion was related to general subjects/activities in schools such as reading, writing, mathematics, and science. The second scope of discussion looked at the instruction of problem solving skills and learning strategies that can be generalised.

Snow and Swanson’s (1992) review: The two authors reiterated the status of instructional psychology from a broad perspective integrating theories and models of mainstream psychology. They presented three main areas of discussion - *specialisation, aptitude for learning, and adaptive instruction*. Under *specialisation*, the importance of specialisation (as opposed to generalisation) of various aspects were discussed: knowledge domain, instructional treatment, situation, population, the learners’ unit size (small or large), and adaptation and instructional goals. *Instruction* is aimed at transfer and hence, it is essential to understand the learners’ initial states of learning history or aptitudes. Two types of *aptitudes* were listed. Cognitive aptitudes were concerned with the learners’ ability organisation as well as their development and knowledge construct abilities (fluid analytical reasoning ability, visual spatial abilities, crystallised verbal abilities, mathematical abilities, and learning strategies and styles). Conative and affective aptitudes dealt with motivational constructs (anxiety and achievement motivation, intrinsic motivation and interests) and volitional constructs (self-efficacy and effort investment, self-regulation and action control). Under the area of *adaptive instruction*, two main topics were highlighted, namely micro-adaptation through tutoring (computer

versus human tutoring) and teaching and learning in groups (co-operative small groups and ability grouping).

Weinstein's (1991) review: How do students learn in the classroom context? In Weinstein's review, five types of learning activities in the classroom were identified. *Recitation* is a prime example of classroom talk with short, quickly paced question-and-answer exchanges between teacher and students. The purposes of these exchanges are for checking on understanding of previously taught lessons or homework assignments, drilling of students on algorithmic material, and presentation of new materials in a way that allowed for student involvement. The teacher is firmly in control of the conversation. Among students, there is little interchange.

Teacher-directed small group exhibits the same pattern of interaction as recitation. The smaller size of the group means that students have both a greater opportunity and a greater obligation to respond. There are two main purposes for teacher-directed small groups. The first purpose is to allow a teacher to introduce modifications easily by reducing the size of a group (compared to the whole group). The second purpose is to organize the ability-based homogeneity of small groups, creating the potential for differential treatment of high and low achievers. It, however, reinforces the development of an academic status hierarchy in the classroom.

Sharing time allows students to speak at length on self-chosen topics; nonetheless, the teacher still selects speakers, monitors the pace of the activity, and evaluates contributions. The purpose of sharing time is to allow children to learn how to narrate on the topic that they select. They can speak of an object or an event. Teachers' responses generally fall along a continuum that describes the extent to which the teacher approves of the child's narrative.

Seatwork encourages students to perform individual tasks, while the teacher is often involved in another activity or is with a small group. The purpose of seatwork is to let high achievers do their own work while the teacher is helping low achievers in a group setting. Students self-pace their work to sustain activity. Their involvement rates are low.

In *student-directed small groups*, the teacher may be less controlling, and interaction among students is not only encouraged but also required. Teachers are "supportive supervisors", facilitators, consultants, and human-relations trainers. Students learn to listen to one another, to allocate turns for speaking, and to manage time and tasks. They have a relatively egalitarian communicative status.

In an everyday classroom situation, students often take part in learning activities that are teacher-directed, with minimal participation. Weinstein's (1991) summary reflects a familiar scenario of everyday classroom: "(i)n order to succeed in school, students must not only achieve academically, they must also learn the norms governing socially appropriate behavior. ... Crowded together, they are required to ignore the presence of others. Urged to cooperate, they really work in competition. Pressed to take responsibility for their own learning, they must follow the dictates of a dominant individual -- the teacher." (pp. 493-4).

Reflections

This paper raises several questions: Should psychology be perceived as a core subject, a supplementary discipline, or part of the curriculum of teacher educational programs? What are teachers' and educators' concerns? How can psychological models and theories be applicable to education? Are there Singaporean psychological models of teacher educators? How can local psychologists design socio-culturally appropriate models and theories?

Reflections from experts: Educational psychology courses for teachers should help (pre-service and in-service) teachers develop contemporary psychological perspectives and recent conceptualizations of teaching (Linda, Blumenfeld, Pintrich, & Clark, 1995). Due to its broad coverage, educational psychology should be taught as a core subject and as an elective in two semesters (Snowman, 1997). What teachers need to learn from the educational psychology courses is to understand, value, and use the knowledge and processes (Hoy, 1996). All courses should be safeguarded by six principles (Kiewra & Gubbels, 1997): (1) driven by teaching models, (2) integrate theory and practice, (3) provide opportunities to practice teaching skills, (4) present an integrated model for instructional planning, (5) prepare teachers to teach learning strategies, and (6) help students learn. Students use their experiences as a basis for thinking about reading, classroom activities, and long-term assignments, and for generating their own models of learning (Renninger, 1996). Due to the multicultural and multiethnic features of the classroom, educational psychology courses should deal not only with issues of diversity and equity but also with a content that reflects variations which may be a function of cultural differences (Marshall, 1996). It is important to notice that variations among teachers will affect the dynamics of a classroom (Rocklin, 1996).

Psychology for teachers is not limited to educational psychology courses only. Educational psychology is not a foundation but one of several resources (Doyle & Carter, 1996). It helps shape everyday psychology theories (Mayer, 1993), and the internalization of social interaction in the construction of knowledge (John-Steiner & Mahn, 1996). Various approaches can be used to teach educational psychology, such as the constructivist case study approach (Sudzina, 1997), the self-regulated learning approach (Du Bois, & Staley, 1997), and instructional planning (Blumenfeld, Hicks, & Krajcik, 1996).

Reflections on educational studies: At the NIE, psychological courses are categorised into *educational studies*. Modules of *educational studies* constitute nearly 15% of the total academic time of the Postgraduate Diploma program, and about 10% of the Bachelor's Degree program. All student teachers take up two core psychological modules and one prescribed elective module. While the core modules provide an overview of psychological models and theories related to human development, the elective modules are meant for in-depth study of selected themes. The word "psychology" does not appear in any of the *educational studies* modules. Each module is given a title reflecting its contents and emphases. Often the module integrates current educational initiatives and directions. In many cases, several textbooks are recommended for readings.

Reflections on educational studies: Theory and practice of educational psychology have a linear relationship (Shuell, 1996). Accordingly, research findings and observations of faculty members who teach the module are shared with student teachers. Teacher educators face challenges to select themes, models, and theories that are suitable for the educational, social, and personal needs of teachers. It is a matter of fact that teachers are seldom involved in policy making. They are usually merely receivers and interpreters of new educational initiatives. Skills and techniques in translating models and theories into practice are essential as the rate of policy changes may exceed the rate of development of related theories and models. Given the existing external variations at the structural level, it is necessary for teachers to understand the usefulness of theories and models, as well as new teacher and student roles.

Theories and models as general references: Theories and models are general frameworks that have been tested by researchers in a certain setting. Most of the existing psychological models and theories were developed in Euro-American settings and thus may not be totally valid for Asian settings. The models and theories disseminated to student teachers during introductory courses are usually classical theories or models that may or may not be valid in the modern context. Hence, faculty members should make student teachers aware of the strengths of the models and theories on

the one hand, and also remind them of the limitations of each model and theory on the other hand. It is important to emphasise on the generalisation of a theory or model, as well as the specificity of an individual's behaviour. The "dichotomy" contrast between generalisation of a theory and specificity in application may arouse "cognitive" dissonance in student teachers especially during teaching practice.

A theory or a model should be understood from a scientific viewpoint. Research oriented learning attitudes should be implanted into student teachers at the first few series of their lectures. Models and theories should be employed as examples of how researchers uncover various types of behaviours and thinking of human beings. In other words, student teachers should examine the originality of a model or a theory and question why a researcher formulates (at her/his time) a particular framework, and how s/he arrives at the conclusion. They should analyse the model or theory and extrapolate on what can be learned from her/his work.

Reflections on teacher roles: In a multicultural, multilingual, and multi-religion Asian society that emphasises the development of its human resource, Singaporean teachers are regarded as key agents of socialisation who help build the future of the nation and its youth. The rapid socio-economic development of the society has influenced the roles of teachers in schools and in the society. With the increase in the number of nuclear families and working women, teachers have resumed an additional role as "care-givers", being responsible for students' welfare and the cultivation of their characters or personalities.

Contemporary Singaporean teachers are expected to adopt multiple roles (e.g., as caregivers, disciplinary masters, knowledge disseminators, facilitators, leaders, classroom managers, etc). In line with the acknowledgement of multiple teacher roles, teachers should be equipped with techniques and skills that can help them uncover situational human behaviour and thinking within and outside the classroom setting. Teachers have to learn how to switch their roles from one situation to another situation without causing a role-identity crisis.

Reflections on student roles: If we examine the latest educational outcomes (Ministry of Education, 1998), we realise that Singaporean students are expected to be independent learners who are competent in applying informational technological skills, handling interpersonal and personal problems, and acquiring critical, creative, and problem solving competencies. Unlike students in a conventional setting who are receivers of knowledge and skills, students today are expected to be original, innovative, and creative. Between the ideal model of learning and the pragmatic, students have to search for the limits of their classroom behaviour. How far can students who live in a relatively collectivist society that emphasises respect for elderly people and authority perform non-conformist behaviour and breakthrough creativity? Within the framework of co-operative learning and teamwork, what measures should students employ to make their individualistic behaviours and thoughts receptive? How can students go beyond the conventional framework of learners that stresses among other things obedience, loyalty, rules and regulations, and so forth?

Final words

Science and culture: Psychology for teachers is science and culture accentuated by interdisciplinary and intercultural studies of human relations, behaviours, emotions, and thinking. It draws from human related models and theories in various learning situations (e.g., in schools, in the classroom, outdoor learning) with different subject matters or disciplines (e.g., science, mathematics, languages, social studies, history and geography). Learning (with or without a classroom setting in the IT era) should consider the intercultural variations between teachers and students (analogy: experts vs. novices) and among students of different socio-economic, cultural, and linguistic home

backgrounds. Psychological courses should prepare teachers with the competence to conduct interdisciplinary research and studies. Through active involvement in scientific research, teachers are likely to develop models and theories related to their subject matters. In addition, different subject specialists should work together and with researchers who are competent in interdisciplinary and intercultural educational research. Together with teachers, researchers can then define the framework of study that can help improve subject-matter teaching.

A higher status for psychology and psychologists: The status of psychology can be enhanced if it is perceived as a subject for social science, pure science, and engineering students. In line with the introduction of humanity subjects for science and engineering students, psychology should be recognised as one of the core subjects for all undergraduates. Results of the survey (reported in the previous section) showed that roles of psychologists in education are less clearly designated compared to the roles of psychologists working at counselling and social service centres. Teacher educators who received training and research in the area of psychology should help raise the status of psychology as a school subject for secondary students. When psychology is allowed to gain some grounds among teachers and students, the status of psychologists in education is likely to be enhanced.

Researchers and observers: Psychology for teachers calls for the commitment of local researchers particularly educators and teachers to a research-cum-observance teaching model. Teachers are common people and subject specialists who are scientifically competent and culturally sensible in contributing ideas to educational research. When teachers and local researchers' level of competence and confidence in conducting research increase, it is likely that they will derive more relevant models, theories, and frameworks of learning and teaching for the learners. They are likely to involve themselves and students in predicting challenges and in developing appropriate social skills and technological techniques for the twenty-first century. In order to ensure that local researchers participate extensively in designing models within local contexts, substantial institutional supports (e.g., time, manpower, resources, moral) are needed.

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