An Overview of the PROMS in China ----- Retrospect and Prospect from Chinese Organizers

Hu Xiaoxi

Southern Medical University, Guangzhou, China

Liu Ting

Guangdong Polytechnic of Science and Technology, Guangzhou, China

*Corresponding Author: *Hu Xiaoxi, professor of Southern Medical University, Guangzhou, China, is both the successful organizer yet active sponsor of PROMS 2014 and 2016, China. sheila126@ 126.com. Liu Ting, PhD of City University of Macau, SAR, China, is actively involved in social media's impact on tourism and education.*

1. INTRODUCTION

The Pacific-Rim Objective Measurement Symposium (PROMS[1]) 2021 just held in Nanjing was successfully concluded. This is the first large-scale online international seminar successfully held in China at a difficult time in the fight against the COVID-19 epidemic under the global environment. PROMS 2021 was jointly organized by the School of Psychology, Nanjing Normal University, China and the Jiangsu Provincial Psychological Society, and was realized on the online conference platform ZOOM. This year more than 100 experts, researchers and scholars participated. They are mostly in the field of psychology and education from 11 countries and regions including the United States, Australia, Brazil, Sweden, Japan, Singapore, Malaysia, Vietnam, Hong Kong, Macau and mainland China.

A one-day pre-conference workshop was run. The workshop was divided into two parallel series. Series (1) "Rasch Model Workshop", conducted by Dr. Yan Zi, Associate Professor of the Department of Curriculum and Teaching of the Educational University of Hong Kong and Vice Chairman of the PROMS. The main takeaway is that the Rasch model focuses on items and people rather than on test scores, using the joint measurement principle to synthesize the two; quantitative analysis of qualitative questions is now experienced in a way rarely practiced in the social sciences. The workshop explains the advantages of Rasch-based analysis over classical test and questionnaire scoring methods. How Rasch model-based data analysis can be applied to dichotomous rating data (basic Rasch model) and Likert-style questionnaire data (Rasch model rating scale model).

The workshop series (2) is led by two professionals, the "R-language Workshop" by Dr. Cynthia Tong from the Department of Psychology, University of Virginia, USA, and "Educational Data: Storytelling and Ways to Find Teaching Implications" workshop by Dr. Kit Tai HAU, a professor of the Department of Educational Psychology, The Chinese University of Hong Kong, China. Among them, "R Language Workshop" mainly introduces what R is and how to apply it in Rasch model measurement. This workshop is useful for scholars interested in T-tests, ANOVA, multiple regression. Confirmatory factor analysis (CFA), measurement invariance, and structural equation modeling (SEM). The workshop by Dr. Hou deals with two aspects: (1) How to select the questionnaires used in education monitoring; (2) How to use the results of the questionnaires to analyze and write attractive, Influential "Stories". Dr. Hou used PISA-type tools and their materials to illustrate and serve as examples. Workshops focused on training in lively and interesting "stories" rather than on complex and sophisticated statistical techniques.

The theme of PROMS 2021 is: Application of Rasch Model in Psychological and Educational Research. The organizer invited four experts to make keynote speeches.

---

[1] http://proms.promsociety.org

They are Professor Trevor Bond of James Cook University, Australia, the former president of PROMS, who gave a keynote speech titled: From Estimation to Consideration: The Role of Rasch Model Measurements in Promoting Understanding and Improving Validity; Professor Dr. Kit Tai HAU, whose keynote focused on "Large-scale International Educational Assessment: Uses, Limitations, and Counter-Intuitive Findings; Professor Ricardo Primi from the University of São Francisco, Brazil, whose speech is about "Reactive Styles as a Function of Individual Differences: Addressing the Multiplicity of Individual DIFs, and Professor Steven Stemler from Wesleyan University, USA. Prof. Steven delivered the keynote titled: "Better Measurement and Fewer Parameters! The True Value of Rasch over IRT!

In addition, the conference also invited Professor Zhang Quan, the PROMS mainland China representative from Jiaxing University, Zhejiang Province, China to run a symposium called "Rasch Model and Test Equating: RASCH-GZ, the most updated research in China". This shows to the academic community the inheritance and development of Rasch model research in China as well.

2. INTRODUCTION TO PROMS

PROMS was initiated and chaired by Professor Trevor Bond. The "Pacific Rim Objective Measurement Symposium" hosted by the society is referred to as PROMS in the world. It is the annual official academic conference of PROMS. The purpose thereof has three main points:

- Encourage the pursuit of Rasch model measurement and its applications in business, consulting, economics, education, healthcare, languages, measurement, psychology, quality assurance, statistics and strategic planning in the Pacific Rim;

- Advocate for measurement practices that contribute to the well-being of individuals, communities and societies, and the public interest in the Pacific Rim;

- Increase the visibility and status of the Rasch model measurement in the Pacific Rim.

These Goals will be Achieved by:

- Building a network of researchers and scholars in the Pacific Rim to foster collaboration and collaboration;

- Holding an annual conference-----PROMS;

- Providing seminars and training;

- Participating in other activities that may contribute to the development of Rasch model measurement research, policy and practice.

The PROMS Conference is a forum for sharing new knowledge and new applications of the Rasch model with the international academic community, which is embodied in the application of the Rasch model in various academic fields, aiming to contribute to the promotion of objective measurement research and development in the Pacific Rim region.

Since the first PROMS was held in Kuala Lumpur, Malaysia in 2005, it has been held for 15 consecutive academic years: Malaysia (2005, 2010, 2017), Singapore (2011), Japan (2008, 2015), Indonesia(2019), China Hong Kong (2006), China Taiwan (2007, 2013), China Jiaxing (2012), China Guangzhou (2014), China Xi'an (2016), China Shanghai (2018) and China Nanjing (2021).

PROMS2012，Jiaxing，China
2012年嘉兴环太平洋地区国家客观测试国际研讨会

The PROMS conference has the following characteristics: It is held once a year in the Pacific Rim region. The participants are all MA or Ph.D. supervisors, scholars, and MA or Ph.D. students who are engaged in Rasch model research and objective measurement or testing. The fields of their research can be different, but they all use the Rasch model to do the research of their own. The software systems used include WINSTEPS, FACET, GITEST, etc. to process their own data and exchange research results. Apart from inviting influential professionals and scholars in the field to deliver keynote speeches and arrange parallel sessions, the organizer(s) of each conference also arranges, according to international practice, a 1-2-day pre-conference workshop on the promotion for the knowledge of as well as the use of Rasch-based software to popularize the research and application of the Rasch model for beginners, graduate students, and young teachers. It has been well believed that the PROMS conferences provide an excellent academic platform for graduate students, supervisors and scholars in the Pacific Rim and beyond.

PROMS 2013 Kaohsiung, China

3. THE ORIGIN OF THE RASCH MODEL[2]

The Danish mathematician Georg Rasch (1901-1981) published "Probabilistic Model for Intelligence and Attainment Tests" in 1960, which resolved the debate "Is psychometric possible?" It is generally believed that physicists and social scientists had hot debating in the 1930s. Georg Rasch's publication shows how the rigorous standards of physical scientists can be applied to the social sciences through the model Rasch proposed. This became known as the "Rasch model". Since then, the Rasch model has been widely used in various research fields such as educational measurement, sociology, management, psychology, language testing, medicine, and health sciences, and have been extended from their initial application to data of dichotomous type to polychotomous type. Today, the model has been respected as the "Rasch model" in the academic circles. Experts and scholars are also convinced that this model has made a great contribution to the promotion of the prospect of objective measurement and scientific exploration. And PROMS conferences are the most authoritative, professional and constantly updated international conferences on Rasch model and their theories and applications.

At a technical level, among the many measurement methods, the Rasch model can be regarded as the most versatile, powerful and feasible. Whether it is data matrix of binary scoring or multi-level scoring, it can be processed via Rasch-based software. With just one click of the mouse, the data results to be processed can be stored in a designated computer file for easy access at any time in the future. However, most of these widely used, powerful and feasible methods are limited to the English-speaking world. Most researchers who are native Chinese speakers and non-English majors may not fully understand and feel the concepts, applications and efficiency inherent in these methods. For quite a long time, it has been the situation of liberal arts in academic circles in China.

At the theoretical level, as far as language testing is concerned, the classical testing theory is still the main measurement model for schools and examination departments in China. This is reflected in the fact that the difficulty of test items depends on the level of the subject group, and the level of subjects restricts the difficulty of test items in turn, while the advantage of Rasch model is that the difficulty of

---

[2]http://www.rasch.org/rmt/rmt193h.htm

the test items and the test taker's ability level can be estimated independently of the sample (Andrich, 2004; Bachman, 1996; Engelhart, 2013; Fan, 1998; Gui, 1986, 1990, 1993; Hambleton & Swaminathan, 1985; Kolen, 1995, 2004; Linacre, 2002, 2016; Smith, 1990; Trevor, 2015;Wright, 1979, 1992). In this sense, the Rasch model is an effective method for language testing research. This is also the author's original intention to promote the research and development of the Rasch model in China.

4. FEATURES OF PROMS WORKSHOPS

The PROMS workshops have three characteristics: first, the content basically remains unchanged, and it is all about popularizing the application of the Rasch model. This includes the introduction to and the specific use of WINSTEPS, FACET, LEXILES and TAM, R system and EQSIRT, etc.; next, the speakers are all influential experts and professors in the Rasch research field; thirdly, the lecture format is very precisely targeted. Considering that many of the learners are non-English majored teachers and graduate students, both Chinese and English instructions are adopted. Very often the question and answer as well as relevant discussions were mainly in Chinese. The purpose is obvious: to better promote the understanding and application of the Rasch model among Chinese scholars.

In fact, PROMS entered China mainland as early as in 2012, and was successfully held for the first time in Jiaxing University, Zhejiang province, China. Since then, the organizers of the conference have invited Professor Trevor Bond to give workshops for six consecutive times (Jiaxing, 2012; Kaohsiung, 2013; Guangzhou, 2014; Xi'an, 2016; Shanghai, 2018; Nanjing, 2021), the content of which is: "How to use WINSTEPS to conduct Rasch Model Measurement". This is actually a very popular class on how to apply the Rasch model for research and data processing and analysis in China as well as in the Pacific rim region. It should be pointed out that in China there are still not many people who can use the above-mentioned software skillfully. Therefore, such a popular workshop is necessary to continuously promote the study and application of the Rasch model. For Chinese scholars and researchers in their respective research fields, Rasch model has played a positive guiding role in the practical application.

5. PROMS THEMES AND KEYNOTE SPEAKERS

The PROMS 2021 held in Nanjing is the sixth PROMS conference in China. The PROMS topics are all about the "Rasch Model: Theory, Method and Practice", and the research fields involved range from medicine, education, sports, network technology, language teaching, language testing, validity research and other fields. From 2012 to 2021, approximately 50 keynote speakers have been invited from universities in Malaysia, the United States, Australia, Denmark, Japan, Brazil, Sweden, Singapore, Vietnam, and China including Hong Kong, Macau, and Taiwan.

The keynote speakers are all centered on the Rasch model. It is worth mentioning that the PROMS conferences held in China have also tested the qualification of Chinese scholars in the research and application of the Rasch model. Among them, in 2012, Professor Zhang Quan of Jiaxing University gave a keynote speech to report to the international academic community, for the first time, how the late famous Chinese linguist Professor Gui Shichun (1933-2017) successfully completed the ten-year MET equating project via Rasch model sponsored by the National Education Examination Authority (NEEA) under the Ministry of Education of China. In 2014, Prof. Jin Yan from Shanghai Jiaotong University and Dr. EricWu from UCLA jointly made the speech titled: "An Argument Approach to Test Fairness: The case of multiple-form equating in the College English Tests. In 2016, Professor Huang Xiaoting of Peking University gave a keynote speech titled: "Investigating the Predictive validity and Social Consequences of "Gaokao". These speeches made the participants refreshing and impressive. Generally speaking, the convening of the PROMS Conference in China has enabled the academic community to have a better understanding of the time and level of Chinese scholars' application of the Rasch model.

6. CONCLUSION

To conclude, PROMS conferences held in China offer three highlights: First, with the number of PROMS participants increasing annually, the academic impact becomes obvious in the Pacific rim region. At the same time, it shows to the academic community that Chinese scholars have inherited and developed the Rasch model research. And it also symbolizes that the research on the Rasch model by Chinese scholars has entered into the world.

Secondly, over the past years, the PROMS has been concerned, supported and sponsored by many work units home and abroad: the world-renowned Springer Publishing House, the US Meta Metrics data company, the ETS, the British Embassy Cultural and Educational Association, SAGE, Higher Education Press, Social Media, Foreign Language Teaching and Research Press, Shanghai Foreign Language Education Press, Jiaxing University, Shanghai Jiaotong University, Fudan University, City Training Institute CTI Guangzhou, Jiangsu Psychological Association (Development and Educational Psychology Special Committee). "Correction Network" and related institution Hangzhou.

Thirdly, the high quality of the papers presented at the conference reflect the new trends and status quo of the specific research and application of Rasch model in the Pacific Rim region. For four years Springer Publishing officially published the PROMS Proceedings (Zhang & Yang, 2012; Zhang & Yang, 2014; Zhang, 2015, 2016). Ever since the publication, the paper-based copies of the conference proceedings have been collected in major libraries and universities around the world, and the e-books are included in the Springer Link Behavioral Science and Psychology e-book collection, which is accessible to readers around the world. The annual number of paper downloads and citations increase year by year, which has a great impact in the field of Rasch research.

With the advent of the big data era and the further improvement of computer and network technology, the research and application of the Rasch model will be popularized in more research fields in China. In the forthcoming PROMS conferences, Chinese scholars are expected to further enhance academic research and communication skills and to better manipulate the direction of research and development of their own disciplines. The annual PROMS will continue to add vitality to language testing and objective measurement research in China as well as in the Pacific Rim region.

REFERENCES

Andrich,D.(2004).Controversy and the Rasch model: A characteristic of incompatible paradigms? Medical care, 2004, 42 (1):1-7

Bachman, L. F. & Palmer, A.S. (1996) Language testing in practice. Oxford University Press.

Engelhard, G. Jr. (2013). Invariant measurement using Rasch models in the social behavioral, and health sciences. Routledge Taylor Francis Group. ISBN: 978-0-415-87122-8 (hbk). ISBN: 978-0-41 5-8712S-9 (pbk). ISBN: 978-0-203-07363-6(ebk)

Fan,X.(1998).Item response theory and classical test theory: An empirical comparison of their item/person statistics. Educational and Psychological Measurement.

Gui, S.C., Li, W. & Zhang, Q. (1993). The Application of IRT to test equating for MET in China. PP. 391-393. N EEA. (Ed.). The 4th China Education and Examination Conference Proceeding. China Peace Press. ISBN 7-80101-089-2/G.64

Gui, S.C. (1990). Notes on Itembanking (2).Modern Foreign Languages. Issue 4, pp.66-72.

Hambleton, R. K. & Swaminathan, H. (1985). Item response theory: Principle and application. Kluwer Nijhoff Publishing.

Kolen, M.J. & Brenman, R L. (2004).Test equating, scaling and linking methods and practice. Springer Verlag New York Inc.

Kolen, M.J. & Brenman, R.L. (1995).Test equating: method and practice. Springer Verlag New York Inc.

Linacre, J.M. (2016).A users guide to WINSTEPS Rasch model computer programs: Program manual 3.92.0[EB/OL] Retrieved from https://www.winsteps.com/winman/copyright htm, 2016.

Linacre, J.M (2002). What do infit and outfit, mean-square and standardized mean? Rasch Measurement Transactions 878, 2002.

Smith, R.M. (1990). Theory and practice of fit. Rasch Measurement Transaction, 1990, 3(4):78.

Trevor, G.B., & Christine, M Fox (2015).Applying the Rasch Model: Fundamental Measurement in the Human Science. (3rd Ed.).Routledge Taylor Francis Group.

Wright, B.D. & Stone, M H. (1979). Best test design Rasch measurement. MESA Press

Wright, B.D. (1992).IRT in the1990s: Which models work best? Rasch Measurement Transactions, 1992, 6(1): 196-200.

Zhang, Q. (ed.). (2016). Pacific rim objective measurement symposium PROMS 2016 Conference Proceedings. ISBN: 978-981-10-8137-8; ISBN: 978-981-10-8138-5(eBook). doi: 10.1007/978-981-10-8138-5

Zhang, Q. (ed.). (2015). Pacific rim objective measurements Symposium PROMS 2015 Conference Proceedings. ISBN: 978-981-10-1686-8ISBN:978-981-10-1687-5(eBook). doi: 10.1007/978-981-10-1687-5

Zhang, Q &Yang, H. (eds.). (2014). Pacific rim objective measurement symposium PROMS 2014 Conference Proceedings. ISBN: 978-3-662-47489-1; ISBN: 978-3-662-47490-7(eBook). doi: 10.1007/978-3-662-47490-7,2

Zhang, Q & Yang, H. (eds.). (2012). Pacific rim objective measurement symposium PROMS 2012 Conference. Proceedings. ISBN: 978-3-642-37591-0; ISBN: 978-3-642-37592-7 (eBook). doi: 10.1007/978-3-642-37592-7,2