

CALIBRATION CHALLENGES AMONG PRE-SERVICE TEACHERS IN INSTITUTE OF TEACHER EDUCATION (IPG) USING RASCH MODEL

DESAFIOS DE CALIBRAÇÃO ENTRE PROFESSORES DE PRÉ-SERVIÇO NO INSTITUTO DE ENSINO PROFISSIONAL (IPG) USANDO O MODELO RASCH

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Abstract: Challenges faced by pre-service teachers in Malaysia have the potential to cause stress and disruption in their daily routine. This study aims to calibrate pre-service teachers' challenges undergoing the Bachelor of Education Program (BEdP) at the Institute of Teachers' Education (IPG). A total of 73 pre-service respondents were selected using random cluster sampling techniques. The survey study design and the questionnaire were used. 58 Items comprised eight primary constructs such as attitude development, daily teaching plan preparation, teaching materials, task load, the relationship between the school and students, advisor's supervision, and facilities were established based on literature review. The Rasch Model's logit values with SPSS 25.0 and WINSTEPS 3.71.0.1 software were used to calibrate key challenges by pre-service teachers. The findings showed that teaching materials were the most significant challenge faced by pre-service teachers, followed by task load and attitude development.

Keywords: Challenges; Pre-service Teachers; IPG; Model Rasch; Practicum.

Resumo: Os desafios enfrentados pelos professores em formação na Malásia têm o potencial de causar estresse e perturbações em sua rotina diária. Este estudo tem como objetivo calibrar os desafios dos professores em formação cursando o Programa de Bacharelado em Educação (BEdP) no Instituto de Educação de Professores (IPG). Um total de 73 respondentes pré-serviço foram selecionados usando técnicas de amostragem aleatória por conglomerados. O desenho do estudo de pesquisa e o questionário foram usados. 58 Itens compostos por oito construtos primários, como desenvolvimento de atitude, preparação do plano de ensino diário, materiais de ensino, carga de tarefas, a relação entre a escola e os alunos, supervisão do orientador e instalações foram estabelecidos com base na revisão da literatura. Os valores logit do modelo Rasch com o software SPSS 25.0 e WINSTEPS 3.71.0.1 foram usados para calibrar os principais desafios dos professores em formação. Os resultados mostraram que os materiais didáticos foram o desafio mais significativo enfrentado pelos professores em formação, seguido pela carga de tarefas e desenvolvimento de atitudes.

Palavras-chave: Desafios; Professores de pré-serviço; IPG; Modelo Rasch; Estágio.

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Introduction

Teachers are the heart or root that determines the strength of the Malaysian Ministry of Education (MOE) to achieve the educational aspirations and become world-class education (Ministry of Education, 2016). High quality elementary teachers in terms of proficiency in knowledge, skills and professionalism are the aspirations of the National Education Philosophy and Teacher Education Philosophy (Mohd, & Ahmad, 2014). A skilled teacher in Malaysia is a product of effective training. Stoltz and Weihenmayer (2010) explain that the challenges are divided into two which are internal and external. Internal challenges are distractions, frustration, annoyance, fear, and laziness, while external challenges are influenced by external factors such as problems of academic failure and vehicle damage. In producing highly trained pre-service teachers capable of facing any challenges, there is a need to know how far the pre-service teachers can adapt to the appointed schools during practical training. Hence, the purpose of this study is to identify the challenges faced by the pre-service teachers during the practical training in school. These challenges will be sorted according to their respective difficulties. The Rasch Model will be used in analyzing the data of this study. Rasch Model is selected due to the advantages of the model in identifying two key features which are ability and difficulty (Ahmad & Ahmad, 2019).

Literature Review

Practical training is often seen as the most important experience for preparation of real teaching (Farrell, 2008). Ambrosetti (2014) study shows that pre-service teachers gain a lot of exposure through practical training and is the most valuable component of the training. Even though practical training gives a lot of advantages, it also attracts stress to pre-service teachers (Kyriacou & Stephens, 2015; Ahmad & Ahmad 2018). MacDonald (1992) previously revealed that pre-services began to feel troubled and pressured even before they started their first day of practical training. The initial anxiety they experienced was because they were worried of how the school and students would accept them. During practical training, the anxiety turned into a challenge on how to adapt with the advisor. Those challenges create constraints thus result in disappointment in the teaching and learning process. Previous studies have shown that there are very few studies focusing on pre-service teachers, especially BEdP pre-service teachers from IPG. Studies in different contexts are very necessary and very relevant to test if previous results are consistent or otherwise. Thus, this study was carried out to identify the challenges faced by BEdP pre-service teachers during the practical training using the Rasch Model.

Methods

Research Design

The approach of this study is quantitative approach. The design of this study is through surveys using questionnaires. The technique used is through the distribution of questionnaires to pre-service teachers undergoing practical training and administered using paper and pen.

Research Sampling

The target population of this study is Bachelor of Education Program (BEdP) of semester seven (2018) who had undergone practical training during the fifth semester (2017). In this study, a total of 73 respondents from three IPGs in the central zone were selected. Those IPG were IPG Kampus Ilmu Khas, IPG Kampus Bahasa Antarabangsa and IPG Kampus Pendidikan Islam. The sampling technique used was random cluster sampling. This sampling technique was chosen because the study conducted involved a large number of subjects ((Mohd, & Ahmad, 2014). Randomized clustering in this study is a sample selected based on population clumps, such as a random choice based on the number of field studies available in the IPG central zone.

Research Instruments

This study uses the Practical Pre-service Teacher Challenge (PTTC) questionnaire which has been developed by the researchers themselves. The use of instruments is an effective method and provides quantitative information (Chua, 2006). The questionnaire consists of two sections, part A and part B. Part A consists of a questionnaire on the demographic information of the pre-service teachers, while part B consists of eight constructs formed from the literature review related to the challenge of practical training and the problems of the pre-service teachers during the course practical training. Those items are constructed using the four-point likert scale: (1) Strongly Disagree, (2) Disagree, (3) Agree, (4) Strongly Agree. A total of 58 items are built into this PTTC instrument.

Data Analysis

The Rasch model has been widely used in many fields, especially in educational assessment and educational psychology to measure the level of achievement and cognitive assessment. This study uses three statistics to achieve its objectives. First, the difficulty of item using logit that is used to provide the definition of operational constructs measured. High measurement of logit indicates that respondents feel that the challenge item is most the difficult for them. On the other hand, the low measurement of logit shows the most difficult challenge item for them. Secondly, the sample reliability index refers to the extent to which the response is consistent if using another sample ((Mohd, & Ahmad, 2014) and the third, item separation index shows the number of capability strata identified in the sample group (Siti Ehsas, 2018). For both sample ability index and item separation index, the higher values that exceed two indicates good measurement quality (Linacre, 2010).

Results and discussion

Reliability and Separation Index

Based on data analysis, the reliability index for the individual is 0.87 while the item reliability index is 0.91. The value of Alpha Cronbach recorded the reliability value of 0.88. The individual reliability index exceeds 0.80 with the reliability of the item above 0.90 proving that the number of samples is appropriate (Linacre, 2010). For individual reliability, the item is able to differentiate between different individuals for a measured variable (Ambrosetti, 2014). Whereas the value of individual separation index is 2.60 and item separation index is 3.10. Linacre (2010) states the value of individual separation and item that is more than two items is good.

Calibration Challenge of Pre-service Teachers

Rasch Model Analysis shows that all 58-item measured showed good compatibility with Rasch Model assumptions. Of the 58 tested items, this study only takes 7 item that are considered the most important or challenging problems. These items indicate difficulties greater than 0.57 logit as shown in table 1.

Table 1. Calibration Problems of Practicum Pre-service Teachers

No.	Measurement (logit)	Item
1	2.26	I spend my own money on the provision of teaching aids
2	1.30	I need to ensure that the teaching aids provided can improve the learning process.
3	1.07	Additional projects provided by the school such as painting murals and making landscape burdens me.

4	0.93	The process of marking books and reviewing students' homework undermines my preparation and the use of teaching aids
5	0.88	I need a long time to prepare/provide teaching aids
6	0.81	I am burdened by a lot of clerical tasks
7	0.58	I like to procrastinate doing my work

It is found that the main challenge is related to Teaching Aids (TA). They feel overwhelmed because they have to spend a lot of money on providing TA (difficulty measurement = 2.26 logit), pressured to ensure the effectiveness of TA (difficulty measurement = 1.30 logit), the limited time to provide TA (difficulty measurement = 0.88 logit), and insufficient amount of TA (Difficulty measurement = 0.54 logit). The findings of the analysis found that the three least dominant challenges were the help of counseling lecturers (difficulty measurement = 0.54 logit), advisor's guidance (difficulty measurement = 0.54 logit) and advisor's skills (difficulty measure = 0.54 logit). The calibration based on the construct in the PTTC as shown in table 2.

Table 2. Item difficulty based on PPTC construct

Construct	Average Difficulty (logit)
Task load	0.27
Teaching materials	1.13
Task load	0.27
Attitude development	0.17
Facilities	0.12
Preparation of Daily Teaching Plan	0.06
Relationship with students	-0.03
Advisor's supervision	-0.61
Relationship with school	-0.62
Overall Mean	0.49

Practical training is a very important program in the teaching syllabus. The pre-service teachers are bound to the situation that the students they teach are not their own students and their actions must be agreed upon by their advisors and the school administrators. This situation causes trainers to feel guilty and pressured (Lynch & Smith, 2012). In addition, there are some challenges faced by pre-service teachers. In order to avoid various challenges while undergoing practical training, pre-service teachers need to identify the problems first and create a logical plan of action to address them. Assistance, support and encouragement from lecturers and advisors are indispensable. The pre-service teachers will be more enthusiastic in facing the challenge with the encouragements provided. The study found seven key challenges faced by pre-service teachers that are difficult to overcome. The challenges are being forced spend their own money on preparing TA, ensuring that the TA improves the learning and teaching process, additional projects given by the school, marking of students' homework which delays the TA preparation process, time consuming TA preparation and procrastination attitude. Trainer teachers are also burdened with a lot of clerical tasks. The school often gives additional assignments such as typing student data into the databases and preparing organizer files (Ahmad & Sahar 2019; Goh & Matthews, 2011). The primary need to complete learning and teaching, and also TA, makes the pre-service teachers pressured because of the burden of clerical tasks (Campbell & Uusimaki, 2006).

Conclusion

The real teaching environment gives the pre-service teachers a sense of ability to become a real teacher. Through practical training, pre-service teachers can prepare themselves with knowledge and pedagogical content. Even though practical training has many advantages, there are also some challenges that the pre-service teachers need to face as they are still in the training period. The findings show that there are some major challenges that the pre-service teachers are face during the practical training. Item are suggested to provide appropriate programs to assist pre-service teachers to adapt to the actual teaching environment at school. A study using a mixed method of quantitative and qualitative is suggested to be conducted to obtain the main challenges and problems during practical training. Using interview method with the pre-service teachers is necessary to explore the challenges faced by them more deeply. The findings of this study are important in helping the IPG and MOE develop a suitable program in the future. For the pre-service teachers, they need to prepare themselves for the challenges in the world of real educators. Pre-service teachers need to be confident with their own abilities, have high motivation and willing to step out of the comfort zone. It is also suggested to conduct a study on pre-service teachers outside the central zone such as the north, east, south and Borneo zones.

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