PUBLIKASI ARTIKEL PENDIDIKAN MATEMATIKA DI JURNAL BEREPUTASI

BERBAGI PENGALAMAN

Dr. sc. ed. SAFRUDIANNUR, S.Pd, M.Pd

Workshop Desain Penelitian dan Publikasi Artikel Pendidikan Matematika

Prodi Tadris Matematika, Fak. Tarbiyah dan Keguruan, Universitas Islam Negeri Mataram

2-3 Februari 2022

2 OUTLINE

Sebelum menulis

Pikirkan: Alasan? Temuan penelitian? Jurnal?

Saat menulis

Strategi: Guide for Authors? Isi artikel? Looking back! (Contoh dan diskusi).

Sesudah menulis

- Submit: Final check? Cover letter?
- Setelah keputusan editor: Revisi atau ditolak? bagaimana selanjutnya?

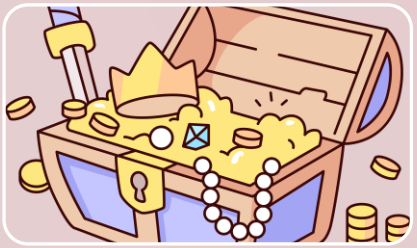
3 SEBELUM MENULIS

Apa alasan/keinginan anda?

Mengkomunikasikan ide, metode, atau hasil penelitian

FOKUS

ATAU



- Cepat publikasi untuk naik pangkat/fungsional,
- Cepat publikasi untuk dapat jabatan

G.M. Sullivan. 2013. (So You Want to Write? Practices That Work)
P.J. Sterk & K.F. Rabe. 2008. (The joy of writing a paper)

4 SEBELUM MENULIS

Bagaimana penelitian anda?

- Apakah anda sudah membaca temuan-temuan terkini yang bersesuaian dengan bidang penelitian anda?
- Apakah temuan penelitian anda baru dan menarik?
- Apakah temuan tersebut diperoleh dari analisis data yang tepat dan dapat diverifikasi?
- Apakah metodenya *valid* dan *reliable*?
- Apakah anda dapat mengidentifkasi kelemahan/keterbatasan metode penelitian anda?

Jika semua jawaban pertanyaan adalah ya, maka segera mulai menulis artikel untuk penelitian anda.

Elsevier (How to write a world class medical paper), (How to write a good research paper)

5 SEBELUM MENULIS

Jurnal yang bagaimana?

12 Jurnal bereputasi dan berkualitas dalam Pendidikan matematika	SCOPUS/Scimagojr
Educational Studies in Mathematics (ESM)	Q1 (1.85)
Journal for Research in Mathematics Education (JRME)	Q1 (2.69)
Journal of Mathematical Behavior (JMB)	Q1 (1.33)
For the Learning of Mathematics (FLM)	Q2 (0.52)
Mathematical Thinking and Learning (MTL)	Q1 (1.1)
Journal of Mathematics Teacher Education (JMTE)	Q1 (2.2)
ZDM - The International Journal on Mathematics Education	Q1 (1.2)
Mathematics Education Research Journal (MERJ)	Q1 (0.88)
International Journal of Math Education in Science and Technology (IJMEST)	Q2 (0.55)
School Science and Mathematics (SSM)	Q3 (0.14)
International Journal of Science and Mathematics Education (IJSME)	Q1 (1.07)
Research in Mathematics Education (RME)	Q1 (0.96)

Williams & Leatham. 2017. (Journal Quality in Mathematics Education)
Toerner & Arzarello. 2012. (Grading mathematics education research journals)

6 SEBELUM MENULIS

Jurnal yang bagaimana?

Jurnal (artikel)	Keputusan I	Keputusan akhir
Math. Educ. Research J. - The different … (2019)	Revise before review (Juli-Agus 2017)	Accepted (Agus 2017 – Sept 2018)
Int. J/ of Science and Math. Educ. - Offering an approach … (2021) - A pseudo-longitudinal … (2021)	Major Revision (Mei - Sept 2019) Reject & Resubmit (Juli - Sep 2020)	Accepted (Nov 2019 – Jan 2020) Accepted (Okt 2020 - Juni 2021)
Int. J. of Math. Educ. in Science and Tech. - Pre-service … (progress)	Invited (Oct - Dec 2021)	

FOKUS

Eurasia J. of Math, Science, Tech. Educ. **(Q2)** - Measuring … (2020)	Minor Revision (April – Juni 2019)	Accepted (Jun – Juni 2019)

7 SAAT MENULIS

MOTIVASI DIRI!

Kebanyakan jurnal adalah tempat publikasi penelitian.

Yang membaca adalah para peneliti.

ARTIKEL SAYA HARUS BERKONTRIBUSI BAGI PARA PENELITI.

Yang akan membaca artikel kita bukan hanya para peneliti ahli. Di antara mereka pasti ada peneliti pemula seperti mahasiswa S1 dan S2.

ARTIKEL SAYA HARUS MUDAH DIPAHAMI PENELITI PEMULA.

8 SAAT MENULIS

Simak *Guide for Authors (GFA)!*

- Lakukan sejak dari awal menulis!
- Patuhi batasan (limit) yang sudah ditentukan!
- Ikuti struktur artikel (jika ada)!
- Perhatikan templatenya, termasuk heading dan sub-heading, tabel, gambar.

INGAT!

Editor dan reviewer tidak mau menghabiskan waktu untuk artikel yang tidak siap.

Submission guidelines

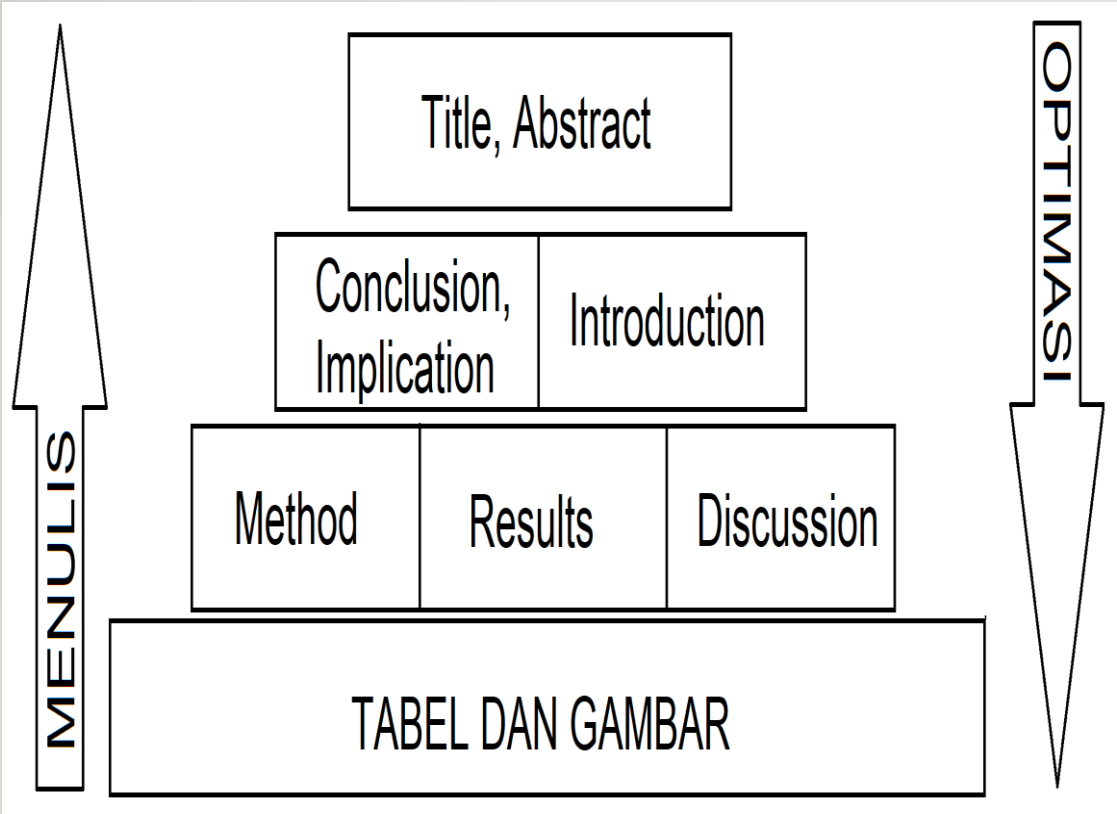
Contents

Elsevier (How to write a world class medical paper), (How to write a good research paper)

Mathematics Education Research Journal

9 SAAT MENULIS

Strategi Menulis Isi Artikel !



Struktur umum artikel (*tidak selalu*):

- Title, abstract, keywords
- Introduction, Theoretical background
- Method
- Results
- Discussion
- Conclusion, Implication, limitation, or further studies

Elsevier. (How to write a good research paper), (11 steps to structuring a science paper editors will take seriously)

10 SAAT MENULIS

Strategi Menulis ABSTRACT!

Tempat promosi artikel

"lengkap dan jelas tapi singkat, spesifik, dan menarik"

- Memuat latar/konteks/masalah; tujuan/ pertanyaan; metode/pendekatan/ instrumen; hasil, kesimpulan/implikasi.
- Dapat berdiri sendiri
- Perhatikan batasan (biasanya 250 kata),
- Hindari istilah ilmiah/singkatan yang tidak dikenal secara umum (jika bisa),
- Tunjukkan keunggulan penelitian anda (tersurat atau tersirat)

Elsevier. (How to write a good research paper), (How to write a world class medical paper)
T.V. Nguyen. (Scientific Writing: A Friendly Guide)
C.A. Mark. (How to write a good scientific paper)

11 CONTOH

Mathematics Education Research Journal (2019) 31:175–195
https://doi.org/10.1007/s13394-018-0248-4

ORIGINAL ARTICLE

The different mathematics performances in PISA 2012 and a curricula comparison: enriching the comparison by an analysis of the role of problem solving in intended learning processes

Safrudiannur[1,2] · Benjamin Rott[2]

The results of international comparative studies like PISA and TIMSS attract researchers to conduct studies comparing math contents of curricula directly to each other. Unlike those studies, we compared math contents of Indonesian and Singaporean curricula based on math contents tested in PISA 2012 items. We also enrich the comparison with the examination of the role of problem solving in the intended learning processes of the two curricula. The results of the comparison of math contents show that there are differences in the breadth of the math contents of the two curricula. The results also indicate that the Singaporean curriculum covers math contents tested in the PISA 2012 items which are missing in the Indonesian curriculum. However, it is still difficult to identify possible reasons for the distinct performances between Indonesia and Singapore in the PISA 2012 study from the comparison. Enriching the comparison with the examination of the role of problem solving in the intended learning processes of the two curricula gives us additional insight into a possible reason. The results show that the intended learning process of the Singaporean curriculum highlights problem solving much more than does that of the Indonesian curriculum. These results are suggestive of the need for further research.

Konteks

Penegasan perbedaan dengan penelitian lainnya, sekaligus pernyataan pendekatan yang dilakukan.

Hasil penelitian yang umumnya sama dengan penelitian lainnya.

Penegasan kelemahan hasil penelitian tersebut.

Keunggulan hasil penelitian dengan adanya metode tambahan

Ada pembahasan tentang studi lanjutan.

12 CONTOH

International Journal of Science and Mathematics Education (2021) 19:419–441
https://doi.org/10.1007/s10763-020-10063-z

Offering an Approach to Measure Beliefs Quantitatively: Capturing the Influence of Students' Abilities on Teachers' Beliefs

Safrudiannur[1,2] · Benjamin Rott[2]

Studies measuring teachers' beliefs quantitatively by using self-report Likert scale instruments often face methodological difficulties. Such difficulties might be due to the fact that those instruments often provide less or no contexts. Whereas, several studies have shown that contexts at school, particularly contexts related to students' abilities, may influence teachers' beliefs. To overcome such difficulties, we offer an approach by using rank-then-rate items instead of Likert scale items and by explicitly taking into account students' abilities within a questionnaire. In this study, we had 43 Indonesian teachers answering this questionnaire to investigate how students' abilities influence teachers' beliefs about teaching and learning of mathematics and problem solving as well as the interrelation between these beliefs with their beliefs about mathematics. The results suggest that teachers may elicit different beliefs about teaching and learning in the context of students' abilities. Furthermore, we found that teachers' beliefs about mathematics correlate with their beliefs about teaching and learning in the context of low ability students, but not in the context of high ability students.

Pernyataan masalah di lapangan.

Tawaran solusi, pembeda dengan penelitian lain, sekaligus pernyataan pendekatan penelitian/instrumen.

Prosedur yang dilakukan sekaligus pernyataan tujuan.

Hasil penelitian (sama dengan penelitian sebelumnya)

Hasil penelitian tambahan yang berimplikasi pada teori

13 CONTOH

International Journal of Science and Mathematics Education
https://doi.org/10.1007/s10763-021-10194-x

A Pseudo-Longitudinal Approach for Investigating Pre-Service Teachers' Beliefs During Their University Education

Safrudiannur[1,2] · Lennart Belke[2] · Benjamin Rott[2]

The aim of this pseudo-longitudinal study is to investigate pre-service teachers' beliefs about (1) the nature of mathematics and (2) mathematics teaching and learning and the development of both beliefs over the course of their studies. A quantitative belief questionnaire was completed by 142 participants divided into three groups based on their years of studies: Beginning, Middle, and End. Additionally, five pre-service teachers from the End group were interviewed to explore the influence of different university courses on the development of their beliefs. The data analyses show a significant difference between the Beginning and the End group regarding beliefs about mathematics favoring a problem-solving view. The difference is an indication related to the development of beliefs about mathematics during teacher education. Courses dealing with university mathematics seem to be responsible for the development. Further, the data analyses also show significant differences between the Beginning and End group regarding beliefs about teaching and learning, also favoring a problem-solving view in a class dominated by low-achieving students. The differences indicate that beliefs about teaching and learning develop during teacher education. However, no evidence supports the hypothesis that courses related to mathematics education contribute to the observed differences. Instead, experiences during an internship semester in observing as well as teaching in real classes by applying what has been promoted in the courses may contribute to the development. Possible explanations regarding the development of beliefs and the contribution of courses in teacher education as well as the implication of the findings are discussed.

Tujuan

Pendekatan yang dilakukan

Hasil negatif.

Penjelasan dan implikasi untuk menarik minat orang lanjut membaca.

14 DISKUSI

15 SAAT MENULIS

Strategi Menulis INTRODUCTION!

Good Story

(a good line of reasoning) dimulai dari Introduction

- Mengapa topik yang akan dibahas penting?
- Apa masalah nya pada topik tersebut?
- Apa solusi yang sudah dilakukan orang lain (anda?)?
- Apa kelemahan dari solusi-solusi tersebut?
- Apa yang akan anda lakukan? Apa tujuan/pertanyaan penelitian? apa kebaruan/kontribusi/manfaat dari yang anda lakukan?

Elsevier. (How to write a good research paper), (11 steps to structuring a science paper editors will take seriously)
Nature. (How to write a first-class paper)
C.A. Mark. (How to write a good scientific paper)

16 CONTOH

International Journal of Science and Mathematics Education (2021) 19:419–441
https://doi.org/10.1007/s10763-020-10063-z

Offering an Approach to Measure Beliefs Quantitatively: Capturing the Influence of Students' Abilities on Teachers' Beliefs

Safrudiannur[1,2] · Benjamin Rott[2]

1997; Zohar, Degani & Vaaknin, 2001).

The influence of contexts at school on teachers' beliefs, especially contexts related to students' abilities, may cause methodological difficulties to measure beliefs, particularly for large samples of teachers. Rokeach (1968) and Pajares (1992) suggest that to

When involving a larger number of participants, most researchers use quantitative methods because of economic reasons. They usually use self-report instruments with closed questions, most often Likert scale items (e.g. Saadati, Cerda, Giaconi, Reyes & Felmer, 2019; Van Zoest, Jones & Thornton, 1994). With Likert scale items, it is easier and faster for researchers to analyse respondents' answers than with open questions (Peterson, 2000). However, the accuracy of Likert scale items for measuring beliefs is questioned (Philipp, 2007), because they often provide less or no contexts (Ambrose, Clement, Philipp & Chauvot, 2004; Philipp, 2007).

Finding ways to measure teachers' beliefs, particularly for large samples, is still a challenge for researchers (Ren & Smith, 2018). It would be desirable to have instruments which allow for more nuanced responses reflecting the interplay between teachers' beliefs and contexts (Ren & Smith, 2018). To answer those challenges, we offer an approach to measure beliefs quantitatively. We employ rank-then-rate items and consider the influence of students' abilities on teachers' beliefs in a questionnaire.

Penegasan bahwa topik penelitian yang dilakukan penting: "Measuring teachers' beliefs".

Apa yang sudah dilakukan orang terkait topik penelitian.

Kelemahan penelitian orang lain dan penegasan mengapa lemah.

Manfaat dari penelitian yang akan dilakukan.

Yang akan dilakukan.

17 CONTOH

International Journal of Science and Mathematics Education
https://doi.org/10.1007/s10763-021-10194-x

Check for updates

A Pseudo-Longitudinal Approach for Investigating Pre-Service Teachers' Beliefs During Their University Education

Safrudiannur [1,2] · Lennart Belke [2] · Benjamin Rott [2]

Several studies highlight the influence of teachers' beliefs about mathematics as well as teaching and learning of mathematics on how they teach in their classes (e.g. Philipp, 2007; Rott, 2020; Thompson, 1992). It, therefore, seems important to study beliefs, not only the beliefs held by in-service teachers but also the beliefs held by candidate or pre-service teachers (PSTs), especially by investigating the development of such beliefs, which we consider essential for mathematics education (cf. Pajares, 1992; Philipp, 2007). In this article, we study the development of beliefs of PSTs during their teacher education in a pseudo-longitudinal design.

Our review of the literature on PSTs' beliefs about mathematics teaching and learning (e.g. Briley, 2012; Rejeki & Sugiyanti, 2015; Zakaria & Musiran, 2010) suggests that contexts are rarely considered. This is regarded as problematic because research suggests that teachers' beliefs about teaching and learning depend on contexts (Buehl & Beck, 2015; Leatham, 2006). For example, several studies have shown that students' achievements strongly influence teachers' beliefs (Raymond, 1997; Zohar et al., 2001). Schoenfeld (2015) also argues that teachers may elicit different beliefs in groups of different levels of achievement, for example, honor classes vs. ordinary classes. Therefore, in this study, we investigate whether PSTs have different beliefs about mathematics teaching and learning between classes with different achievements (high- vs. low-achieving classes).

If it is true that PSTs have different beliefs about teaching and learning in classes

Penegasan bahwa topik penelitian yang dilakukan penting: "Pre-service teachers' beliefs"

Apa yang akan dilakukan dalam penelitian.

Penelitian sebelumnya terkait topik penelitian.

Kelemahan penelitian orang lain dan penegasan mengapa lemah.

Salah satu yang dilakukan dalam penelitian untuk menutupi kelemahan tersebut.

18 DISKUSI

19 SAAT MENULIS

Strategi Menulis THEORY!

Teori adalah jiwa penelitian

- Mendukung argumen peneliti dalam Introduction (Terkadang ada di pendahuluan sebagai pengantar)
- Menjadi jiwa dalam metode penelitian,
- Menjadi calon rujukan dalam diskusi hasil penelitian.
- Referensi teori utama boleh sudah lama, tetapi jangan lupakan perkembangannya.
- Singgung pula teori-teori yang berkaitan.
- Jangan abaikan teori yang bertentangan atau adanya perdebatan dan beritahu posisi penelitian anda

20 CONTOH

International Journal of Science and Mathematics Education (2021) 19:419–441
https://doi.org/10.1007/s10763-020-10063-z

Offering an Approach to Measure Beliefs Quantitatively: Capturing the Influence of Students' Abilities on Teachers' Beliefs

Safrudiannur[1,2] · Benjamin Rott[2]

Some studies have reported consistencies between teachers' beliefs and their teaching of mathematics and problem solving in the classroom (e.g. Anderson, White & of the influence of teachers' beliefs on their actions. However, other studies have shown that teachers' beliefs may be inconsistent with their practices (Cooney, 1985; Cross Francis, 2015; Li & Yu, 2010; Raymond, 1997).

To explain such inconsistencies, researchers investigating beliefs basically use two different arguments. (1) Some researchers argue that inconsistencies between beliefs and practices indicate that teachers' practices may also be influenced other factors than beliefs, such as social contexts at school; in turn, this causes teachers to act in a way that does not fit with their beliefs (Ernest, 1989a; Raymond, 1997). In the line of this argument, beliefs are considered "relatively stable across contexts" (Skott, 2001, p. 6).

Different from the argument stated above, (2) some researchers argue that teachers' beliefs are not stable across contexts but possibly vary between contexts (Leatham, 2006). In other words, teachers may hold different beliefs in different contexts (Schoenfeld, 2015) or situations (Hoyles, 1992). Following this argument, if in specific contexts teachers act in a way that differs from their inferred beliefs (Leatham, 2006), those beliefs might be valid for other contexts, not for that specific context.

In this article, specifically on beliefs about teaching and learning, we follow the latter argument. We argue that examining teachers' beliefs in different students'

Several researchers suggest a three-partite categorisation of teachers' beliefs about mathematics, for example Dionné (1984), Törner and Pehkonen (1998), or Ernest (1989a). Even though these three-partite categorizations use different terms and descriptions, they are very similar to each other; correspondences are presented in Table 1 (see also Törner & Pehkonen, 1998). Therefore, although we use the terminology by Ernest in this study and particularly in constructing the TBTP, we do not solely rely on his framework. We also include the other frameworks from Dionné and Törner and Pehkonen.

- Pertentangan
- Perdebatan: argumen I
- Argumen II
- Posisi

Introduction

The Theoretical Framework for Constructing the TBTP

- Penjabaran teori-teori yang saling berkaitan
- Penegasan teori utama tetapi tidak mengabaikan lainnya.

21 CONTOH

Theories of the interpretation of problem solving

Mathematics Education Research Journal (2019) 31:175–195
https://doi.org/10.1007/s13394-018-0248-4

ORIGINAL ARTICLE

The different mathematics performances in PISA 2012 and a curricula comparison: enriching the comparison by an analysis of the role of problem solving in intended learning processes

Safrudiannur[1,2] · Benjamin Rott[2]

mathematics learning (cf. Rott 2012). Nevertheless, we should be careful to interpret the role of problem solving in a curriculum. The meaning of the term "problem solving" in the context of mathematics is still open to different interpretations as it ranges from working on a routine task to solving a puzzling situation (Rott 2012). Besides, the different interpretations of problem solving may also happen since the use of problem solving in mathematics learning (Schroeder and Lester 1989) or the view related what things are important in problem solving (Branca 1980) can be different.

Ada beberapa teori tentang interpretasi problem solving

A distinction is made between three types of addressing problem solving in a lesson, namely teaching *about* problem solving, teaching *for* problem solving, and teaching via problem solving (Schroeder and Lester 1989). In teaching *about* problem solving, students are explicitly taught about the phases of solving a problem, namely understanding the problem, devising plan to solve the problem, carrying out the plan, and looking back (ibid). Specifically, teachers use the Pólya-based approach to teach problem solving (Chapman 2017). In teaching *for* problem solving, students are explicitly taught about mathematical concepts and procedures to solve problems (Schroeder and Lester 1989). In this category, teachers help students to implement specific methods (translation-based approach) to solve problems (Chapman 2017). At last, in teaching via problem solving, students are expected to construct their knowledge and get a deep understanding of the knowledge during the process of problem solving (Schroeder and Lester 1989). This category seems to be in line with teaching using an inquiry-based approach proposed by Chapman (2017) which teachers help students to develop mathematical knowledge using problems.

Teori lama didukung oleh teori baru.

22 DISKUSI

23 SAAT MENULIS

Strategi Menulis METHOD!

Detail, reliabel, dan valid

- Uraikan dengan detail agar orang lain bisa mereplikasinya dan menjustifikasi kevalidannya (partisipan, instrumen, prosedur, analisis data)
- Jika berhubungan dengan metode penelitian lain, tuliskan sumbernya (jika perlu, juga halamannya).
- Uraikan hal-hal yang dilakukan terkait reliabilitas dan validitas penelitian.
- Uraikan semua asumsi dan hipotesis (jika ada)

Elsevier. (How to write a good research paper)
G. M. Sullivan. (Writing Education Studies for Publication)
C.A. Mark. (How to write a good scientific paper)

24 CONTOH

Total ada 5 halaman untuk "METODE PENELITIAN"

International Journal of Science and Mathematics Education (2021) 19:419–441
https://doi.org/10.1007/s10763-020-10063-z

Offering an Approach to Measure Beliefs Quantitatively: Capturing the Influence of Students' Abilities on Teachers' Beliefs

Safrudiannur[1,2] · Benjamin Rott[2]

Instrument: the TBTP

The use of Likert scale items amplifies the tendency of respondents to answer them according to social desirability (Di Martino & Sabena, 2010), for example, respondents tend to rate items that are inherently positive very highly (McCarty & Shrum, 1997). The study from Safrudiannur and Rott (2020) has shown that social desirability may distort teachers' responses to a Likert scale instrument for measuring beliefs. McCarty and Shrum (1997) have demonstrated that rank-then-rate items can be an alternative for rate-only items (such as Likert scale items) to reduce this tendency. Therefore, in the TBTP, we use rank-then-rate items instead of Likert scale items to minimise the impact of social desirability.

Ten rank-then-rate items in the TBTP are grouped into three themes (see Table 3 and Appendix). Each item has three statements called three-block statements (inspired by the design of the Diversity Icebreaker questionnaire developed by Ekelund, Pluta & Ekelund, 2013). Each statement is related to one of the views of mathematics described by Ernest (1989a): the first, second, and third statements – in this order – are always associated with the instrumentalist, the Platonist, and the problem-solving views, respectively.

Although we particularly use the three views by Ernest in designing the three statements of each item in the TBTP, we also cover other belief theories (especially three-partite ones, see the correspondence presented in Table 1). For example, in teaching a lesson learning a formula to calculate the area of a trapezoid (Theme 1 of the TBTP), teachers may or may not consider that "letting students discover the

Uraian detail karena instrumen baru.

Uraian detail tentang partisipan

Participants

Because we want to see the influence of students' abilities in teachers' beliefs, we need teachers that have experiences with HA and LA students. Therefore, participants in this study were teachers visiting math competitions, accompanying their students who took part in those competitions. The students came from several schools and we assume that they were chosen because of their excellent mathematical abilities amongst many students in each participating school. Most of the teachers were the coaches of the students, and therefore, we assume that they should have experience with both HA and LA students in their schools. We expect that this specific sample may give us a better insight into the influence of students' abilities than only inviting teachers in general who may have no experiences with HA and LA students.

We gave 70 copies of the TBTP to the organising committee (OC) of the competitions (all were organised on the same day in the same facility), and then the OC shared them with the attending teachers. Forty-seven (47) of those questionnaires were returned, but only 43 were completed perfectly. Therefore, we only analysed the responses from the 43 teachers. The background of those 43 teachers is as follows: 33 females and 7 males (3 did not state); 14 from primary schools, 16 from lower secondary schools, 10 from upper secondary schools (3 did not state); 7 for less than two years as teachers, 10 in between two and five years, 9 in between five and ten years, 16 for more than ten years (1 did not state).

As further information, we need to give readers a short description of the Indonesian classroom, especially when participants of this study were students at schools (past experiences). The Indonesian government published a new curriculum called "2013 Curriculum" in 2013. In the new curriculum, the Indonesian government tries to reform teaching and learning in school: from teachers only telling knowledge and students listening passively to teachers helping students to understand and build knowledge actively. This reformation may give us a description of what teaching should look like when participants of this study were students: they might learn mathematics passively by watching and listening to what their teachers demonstrated and explained. Maulana, Opdenakker, Den Brook and Bosker (2012, p. 30) describe that "most mathematics classroom environments [in Indonesia] are still traditional: Teachers actively explain the material, whereas students listen and obey teachers' instruction". Similarly, Sembiring, Hadi and Dolk (2008, p. 929) also describe that "for more than three decades [in Indonesia] a teaching-as-telling method influenced students' attitudes. Students were expected to learn mathematics in passive ways".

25 CONTOH

Total ada 3 halaman untuk "METODE PENELITIAN"

Mathematics Education Research Journal (2019) 31:175–195
https://doi.org/10.1007/s13394-018-0248-4

ORIGINAL ARTICLE

The different mathematics performances in PISA 2012 and a curricula comparison: enriching the comparison by an analysis of the role of problem solving in intended learning processes

Safrudiannur[1,2] · Benjamin Rott[2]

We created codes for each analysis by following steps suggested by Creswell (2014). We outline the steps from Creswell (2014, p. 197–199) below:

1. *Organising and preparing documents for analysis*. The documents are (1) the content standards of C06 for lower secondary school (BSNP 2006) and the learning process standard of C06 (BSNP 2007), and (2) Secondary Mathematics Syllabus of Singaporean Curriculum (MOE 2006).
2. *Writing a list of topics/sub-topics and then creating codes for them.* We created a table to identify the main topic, sub-topic, and sub-sub-topic of mathematics contents listed in the PISA 2012 framework and gave codes for each of them, namely Codes for Mathematics Contents (CMC) 1. We also created a table to identify the sub-category and sub-sub-category of each interpretation of problem solving and gave codes for each of them, namely Codes for Problem-solving Interpretation (CPI) 1.
3. *Improving codes*. We matched CMC 1 to the PISA 2012 released items in OECD (2013b). If there is content in an item uncovered by CMC 1, we put the content on a topic or as a new topic. The name of the revised codes is CMC 2. To improve CP 1, we matched it to chapters about problem solving both in SMSG (1972) and NCSM (1977) since Branca (1980) uses those chapters to illustrate his point of view about problem solving. If there is content in the chapters uncovered by CP 1, we put the content on a sub-category or as a new sub-category. The name of the revised codes is CPI 2.
4. *Performing preliminary analysis*. The first author used CMC 2 to code mathematics contents of C06 and of O-level, N(A)-level and N(T)-level of SC and used CPI 2 to code the learning process standard of C06 and the explanation of the framework of SC.

Uraian prosedur

Uraian reliabilitas penelitian

5. *Checking the coding consistency.* Three coders (both authors and a colleague from Indonesia) independently rated selected parts of the mathematics contents of both curricula using CMC 2. By using the formula for calculating the percentage of agreement (Neuendorf 2002), the percentage was at least 91.4%. Since it was high, we did not revise CMC 2.

Both authors independently rated selected parts of the framework of SC by using CPI 2. The percentage of agreement for the sub-category codes was 90%, while the percentage for the sub-sub-category codes was below 90%. We discussed and revised CPI 2 together to reach a better agreement. Then, we coded the selected parts again together by using the revised codes (namely CPI 3). After that, we independently rated selected parts of the learning process standard of C06 by using CPI 3. The percentage of agreement was higher than 90%.

6. *Re-coding existing data*. The independent coders on the fifth step only coded selected parts. Thus, re-coding the other parts of each document besides the selected parts by using the revised codes (CMC 2 and CPI 3) was necessary

Tersedia contoh untuk memudahkan orang lain melakukan replikasi dan justifikasi.

We present examples of how we coded using CMC 2 and CPI 3 in Table 1. Regarding the content analysis, each code represents a sub-sub-topic. If we did not find a code in a curriculum, we decided that the curriculum does not cover the sub-sub-topic represented by the code.

26 CONTOH

Total ada 4 halaman untuk "METODE PENELITIAN"

International Journal of Science and Mathematics Education
https://doi.org/10.1007/s10763-021-10194-x

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A Pseudo-Longitudinal Approach for Investigating Pre-Service Teachers' Beliefs During Their University Education

Safrudiannur [1,2] · Lennart Belke [2] · Benjamin Rott [2]

Part II (a Qualitative Study). In addition to quantitative data, we used semi-structured interviews to collect qualitative data to answer the fourth research question. The duration of the interviews was 20–30 min. Central questions in the interview guide are listed below:

1. Do you have memorable experiences when learning school mathematics? Do you have special success stories or moments of frustration? Do you have memorable experiences when learning university mathematics? Do you have special success stories or moments of frustration when learning university mathematics? Generally, how is your experience in learning university mathematics compared with school mathematics?
2. How would you classify the importance of lectures focusing on mathematics education (e.g. the "Introduction to mathematics education") for your later work as a teacher? Are the lectures also important for learning how to teach mathematics?
3. During the internship semester, how did you perceive your mentor? What did you learn from your mentor? Can you tell me the memorable situations when you observed lessons and when you teach mathematics in your own lessons? Did the mathematics knowledge and didactic knowledge that you got from the university help you in designing and implementing your lessons? What experiences did you have with the implementation of your lessons? Have you been able to reflect on the experiences? If yes, how important was it for you as a candidate teacher?

Our process of interpreting and discussing the interviews follows the procedure of consensual validation described by Hill et al. (1997).

Uraian pertanyaan wawancara

Metode interpretasi data wawancara.

27 DISKUSI

28 SAAT MENULIS

Strategi Menulis RESULTS!

Fakta-fakta temuan, bukan interpretasi

- Disusun sesuai dengan pertanyaan/hipotesis penelitian.
- Tampilkan hanya temuan-temuan utama yang hanya berasal dari analisis data.
- Tampilkan juga temuan yang tidak diduga/diharapkan (jika ada).
- Tambahkan tabel, gambar/ilustrasi, dan quote/petikan/cuplikan untuk mendukung temuan yang dideskripsikan.

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C.A. Mark. (How to write a good scientific paper)

29 CONTOH

International Journal of Science and Mathematics Education (2021) 19:419–441
https://doi.org/10.1007/s10763-020-10063-z

Offering an Approach to Measure Beliefs Quantitatively: Capturing the Influence of Students' Abilities on Teachers' Beliefs

Safrudiannur[1,2] · Benjamin Rott[2]

U1 > 5). These results suggest that teachers may elicit different beliefs about teaching and learning of mathematics and problem solving in different contexts of students' abilities.

Regarding the differentiations, one might argue that the differentiations happen because of the comparison between HA and LA classes. The comparison seems to give teachers a clue to mark a difference. However, the analyses of the rates to all statements from the Platonist view (R2, S2, T2, and U2) may not support the argument. Table 5 shows *no significant differences* in teachers' rates to all the statements between HA and LA classes (hypothesis (H2) cannot be accepted). These results suggest that

Temuan berasal dari analisis data.

Keraguan orang lain karena kelemahan metode penelitian.

Menjawab keraguan dengan hasil analisis yang tidak diharapkan.

teaching and learning. Table 9 shows that most correlations between teachers' backgrounds and their beliefs about teaching and learning are not significant. However, the results indicate that teachers' years of teaching may influence their beliefs about teaching and learning.

Hasil yang tidak diharapkan: 32 dari 36 korelasi tidak signifikan, hanya 4 yang signifikan.

30 CONTOH

International Journal of Science and Mathematics Education
https://doi.org/10.1007/s10763-021-10194-x

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A Pseudo-Longitudinal Approach for Investigating Pre-Service Teachers' Beliefs During Their University Education

Safrudiannur[1,2] · Lennart Belke[2] · Benjamin Rott[2]

Experiences in Courses Related to University Mathematics. As explained in the literature background, research has shown that the different nature of school mathematics and university mathematics may cause difficulties for PSTs in learning mathematics. Our participants report those difficulties in learning university mathematics.

> [mathematics at university is] very crazy, very abstract (.) uh little to do with the fun I had had in math (...) um then I have to say that learning or – so in the lectures, that's the most unnecessary thing in the world I've ever experienced. (PST A)

Experiences in Courses Related to Mathematics Education. PSTs reported that they attend courses related to mathematics education and that they learned how to teach "students" ideally. However, they do not think that all contents are appropriate for real classes (in a real class, not all students are high-achieving and perhaps, some of them are even low-achieving). The PSTs' reports in the interviews indicate that they may not perceive or even agree with what their educators teach in their courses related to mathematics education.

Hasil yang diharapkan sesuai dengan penelitian sebelumnya.

Salah satu cuplikan wawancara yang mendukung temuan (sebaiknya tampilkan lebih dari satu)

Hasil yang tidak diharapkan.

31 DISKUSI

32 SAAT MENULIS

Strategi Menulis DISCUSSION!

Wadah untuk promosi penelitian

- Tempat untuk menjelaskan hasil penelitian dalam rangka menjawab pertanyaan/hipotesis termasuk hal-hal yang diuraikan dalam Introduction.
- Diskusikan temuan yang sejalan dengan penelitian lain.
- Tekankan diskusi temuan yang kontras dengan penelitian lain dan mengapa bisa kontras.
- Uraikan limitasi dari metode dan temuan penelitian (terkadang dijelaskan setelah Conclusion).

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33 CONTOH

Discussion

International Journal of Science and Mathematics Education
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A Pseudo-Longitudinal Approach for Investigating Pre-Service Teachers' Beliefs During Their University Education

Safrudiannur[1,2] · Lennart Belke[2] · Benjamin Rott[2]

Research often reveals PSTs to hold the instrumentalist view about mathematics at the beginning of university studies of teacher education (Jao, 2017; Swars et al., 2007; Szydlik et al., 2003). Our data confirms such results. Figure 2 shows that the mean rate indicating beliefs associated with the instrumentalist view in the Beginning group (see Table 2) is fairly high, and the mean rate of the End group is still high. It means that PSTs at the end of their university studies seem to still hold the instrumentalist view about mathematics.

A possible explanation for this result (why mean rates for the instrumentalist view are still high among PSTs in the End group in our data) might be the way how

- Temuan penelitian sebelumnya.
- Penegasan temuan penelitian yang sejalan.
- Interpretasi data
- Penjelasan interpretasi data (tujuannya agar diskusi semakin kuat)

PSTs reported in the interviews show that although they took courses related to mathematics education, they might not agree with the content of the courses. Explaining this disagreement, Holt-Reynolds (1992) found that PSTs may hold a contradicting view with what their professors promote in a course, for example, the benefits of constructivist learning. Such contradicting views may reduce the PSTs'

- Temuan yang tidak diharapkan.
- Pendapat atas temuan yang tetap disandari atas teori/hasil penelitian lainnya (agar opini semakin kuat).

34 CONTOH

Discussions and concluding remarks

Mathematics Education Research Journal (2019) 31:175–195
https://doi.org/10.1007/s13394-018-0248-4

ORIGINAL ARTICLE

The different mathematics performances in PISA 2012 and a curricula comparison: enriching the comparison by an analysis of the role of problem solving in intended learning processes

Safrudiannur[1,2] · Benjamin Rott[2]

A limitation of this study is that OECD did not release all mathematics items of the PISA 2012 survey. However, the released items seem to be sufficient to elaborate mathematical contents of the framework of the PISA 2012 study and to guide this comparison study. At least, the published items are adequate to identify that SC covers some of the mathematical contents of PISA 2012 that C06 does not cover. Thus, there are two benefits of the usage of the mathematical contents of the PISA 2012 items as a basis to examine the mathematics contents of curricula. The first benefit is that it may enable us to identify the lack of mathematics contents of a curriculum compared to curricula of high-performing countries. The second benefit is that it may also enable us to identify the lack of the mathematics contents of the curriculum compared to those tested in the PISA 2012 study.

Further, enriching the examination of the mathematics contents of curricula with the analyses of the role of problem solving in the intended learning processes of the curricula also gives additional benefits. The analyses may enable us to evaluate the different degree of the emphasis on problem solving in the intended learning processes of the curricula. Moreover, the varying degree of the emphasis between the curricula of

Uraian limitasi dan counter terhadap limitasi.

Promosi metode penelitian
(Mengatasi kekurangan metode lain yang ditunjukkan di Introduction)

Promosi metode penelitian

35 DISKUSI

36 SAAT MENULIS

Strategi Menulis CONCLUSION!

Bukan sekedar tempat *summary* penelitian

- Menyimpulkan hasil dan diskusi (menyesuaikan pertanyaan penelitian).
- Tunjukkan dengan tegas manfaat penelitian di bidang kita.
- Sarankan penelitian berikutnya (dan rencana penelitian ke depan)
- Uraikan limitasi dari metode dan temuan penelitian (jika tidak dijelaskan di bagian Discussion).

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37 CONTOH

Discussions and concluding remarks

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Promosi metode untuk kemajuan di bidang penelitian.

The results of the analyses lead us to the hypothesis that the actual learning processes related to problem solving may be another possible reason for the different performances between Indonesia and Singapore. Therefore, for our next study, we choose to investigate the implemented learning processes in classrooms related to problem solving including teachers' beliefs of mathematics and problem solving. The reason why we include the beliefs is that teachers may differently enact the learning process mandated by a curriculum since they may have different beliefs about mathematics and problem solving.

Saran untuk penelitian berikutnya dan alasan mengapa penelitian tersebut perlu.

CONTOH

International Journal of Science and Mathematics Education
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- Temuan penelitian sebelumnya.
- Penegasan temuan penelitian yang sejalan.
- Interpretasi data
- Penjelasan interpretasi data (tujuannya agar diskusi semakin kuat)
- Temuan yang tidak diharapkan.
- Pendapat atas temuan yang tetap disandari atas teori/hasil penelitian lainnya (agar opini semakin kuat).

39 CONTOH

Discussion and Conclusion

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Offering an Approach to Measure Beliefs Quantitatively: Capturing the Influence of Students' Abilities on Teachers' Beliefs

Safrudiannur [1,2] · Benjamin Rott [2]

In sum, the results of this study suggest that teachers may elicit different beliefs about teaching and learning of mathematics and problem solving in different contexts of students' abilities. Further, the results of this study indicate that the connection between teachers' beliefs about mathematics and their beliefs about teaching and learning of mathematics and problem solving can be seen in the context of LA classes rather than in the context of HA classes.

Kesimpulan

Overall, we believe that the consideration of social contexts focussing on students' abilities in the TBTP may contribute to the way for measuring (teachers') beliefs quantitatively. Although this study is conducted with a reasonable number of teachers ($N = 43$) and without doing interviews and observations, we may still get insight into the strong effect of the social context related to students' abilities on the relationship between beliefs about mathematics and beliefs about teaching and learning. Interesting findings of this study differ the TBTP with other existing Likert scale instruments, which are only able to measure beliefs in an unknown context.

Promosi pendekatan yang ditawarkan untuk perbaikan di bidang pengukuran beliefs skala besar.

40 DISKUSI

41 SAAT MENULIS

LOOKING BACK!

Orang lain lebih mampu melihat kesalahan anda

Lakukan proof read untuk bahasa tulisan anda! Minta bantuan kolega atau cari bantuan professional.

Minta bantuan kolega untuk membaca dan mengkritisi tulisan anda.

Lakukan revisi mengakomodasi perbaikan Bahasa, kritik dan saran dari kolega anda.

42 SETELAH MENULIS

FINAL CHECK SEBELUM SUBMIT

Format artikel sesuai dengan template? → Format daftar pustaka sudah benar? → Cover letter (1 halaman, singkat, berisi) → Submit

43 SETELAH MENULIS

KEPUTUSAN PERTAMA

ACCEPTED	REVISION	REJECTED
- Sangat jarang - 40%-90% rejected	- Tanggapi seluruh poin yang disorot oleh reviewer. - Perbaiki jika anda setuju dengan pendapat reviewer. Jika perlu, ucapkan terima kasih. - Jika anda tidak setuju, berikan argument yang kuat dan ilmiah. Lakukan dengan sopan. - Buat tabel yang memuat perbaikan yang anda buat. Tunjukkan dengan jelas dimana letak perbaikan tersebut di artikel (misalnya: halaman, paragraph, baris)	- Jangan masukkan ke hati. Sedih boleh, tapi hidup harus move-on. - Jika ingin submit ke jurnal yang sama, jangan abaikan hasil review. Perbaiki paper anda. - Jika submit ke jurnal lain, tetap perbaiki paper anda berdasarkan hasil review. Ingat, reviewer paper anda mungkin saja juga reviewer di jurnal yang anda submit.

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THANK YOU

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