Trends and Issues in Interdisciplinary Behavior and Social Science – Lumban Gaol et al. (Eds)
© 2017 Taylor & Francis Group, London, ISBN 978-1-138-03516-4

The influence of competence and work motivation on innovativeness and their impact on performance of mathematics teachers at technical senior school in Central Java

Suwiyadi
Department of Nautical Merchant Marine Polytechnic (PIP) Semarang, Jawa Tengah, Indonesia

ABSTRACT: This study aims to provide empirical evidence from analyzing the effect of competence, motivation and innovativeness on the performance of mathematics teachers at Vocational Senior High School (VSHS) in the Central Java province. Quantitative research methods were used. Proportional random sampling was used to obtain a sample of 200 mathematics teachers at VSHS in Central Java and measure the effect of teacher competence, motivation, and innovativeness on teacher performance, both directly and jointly using AMOS software LISREL 20. The results show that the variables of competence, motivation, and innovativeness have a positive and significant impact on the variables of performance. This research also shows a positive and significant relationship between the variables of competence and motivation and the variable of innovativeness.

Keywords: performance, competency, motivation, innovativeness

1 INTRODUCTION

Mathematics teachers at a Vocational Senior High School (VSHS) who administer mathematics courses are expected to select appropriate learning strategies, in order that the learning objectives can be achieved effectively and efficiently. This is possible if the VSHS teachers, as well as instructional designers, have a learning management competence. Rusman (2011, p. 19) states that in the world of education, a VSHS teacher is an educator, mentor and coach, and should develop a curriculum that creates conditions and an atmosphere conducive to learning; make learning fun and interesting; give a sense of security and provide space for learners to actively think and be creative and innovative in exploring and elaborating ability. According to the Law of the Republic of Indonesia, Number 14, Year 2005, article 1, paragraph 2 states that teachers are professional educators and scientists with the main task of transforming, developing and disseminating science, technology, and the arts through education, research, and community service.

Based on the observation of applied learning by teachers in the field, it appears there is a tendency for the teaching and learning process in the classroom to be in the classical style, relying only on textbooks, with teaching methods that focus on understanding the process by memorization of concepts, with teachers at the center of learning. The development of processing skills in learners is very rare. The impact of all this means that the study of specific subjects like mathematics is not maximized. Learning mathematics is not a favorite for students; it is very burdensome for some students who find it daunting. Indonesia needs a younger generation who understand mathematics and choose this field for study. It is still far behind other countries in Asia, such as Japan, Korea, and Taiwan. Mathematics is the science which underlies technology, so students must be instilled with a sense of love for learning mathematics. Through strategies and corresponding teaching methods, mathematical learners or students can develop a capability that has always occupied the top ranking in surveys on the skills needed in the working world, the problem-solving ability, interpersonal, and communication will be pursuing a career in the field of exact and non exact.

The ability of teachers to make mathematical learning interesting is desirable, so the mathematics teacher's performance (in terms of planning, organizing, implementing, and evaluating) needs to be investigated. The mathematics teacher's performance is a factor that is crucial to the quality of education/learning of mathematics that will have implications for the quality of the output of education after completing school. Efforts to continuously improve the quality of learning require a professional attitude from educators. Based on the explanation above, teacher performance at the

time of giving lessons to students can be seen from their planning, implementation, and evaluation.

There needs to be development of innovative features which can be used by mathematics teachers in an effort to improve the quality of education and learning of mathematics. Thus, creativity and innovation become very important. According to Rogers (1995, pp. 264–266), creativity is the earliest degree to which an individual or group receives a new idea or innovation compared to others. Innovation in the form of methods can have an impact on the the quality of education as well as being a tool or a new way of solving problems encountered in educational activities. Iskandar (2008), revealed in his study that 20.12% of learning abilities of teachers or teacher's performance is determined by innovativeness. We can define educational innovation as 'any dynamic change intended to add value to ... educational processes and ... resulting in measurable outcomes, be that in terms of stakeholder satisfaction or educational performance' (Pedrò, 2010, p. 12). Based on the explanation above, an innovative learning model is the concept of learning that helps teachers link what is taught to learners' and real-world situations, and encourages students to make connections between the knowledge they possess and its application in their lives as members of family and society.

Meanwhile, Davis (1994, p. 484) argues that many factors can affect performance, including motivational factors and factor of capacity consists of the ability and capability of potential reality. This is in accordance with the opinion of Kreitner and Angelo (2001, p. 205), who state that motivation is a psychological process that generates and directs behavior toward the achievement of the purpose, or goal-directed behavior. As stated by Mangkunagara (2005, p. 67), the causal relationship between motivation and performance is that the factor affecting performance is the motivation that is formed by the attitude of an employee in the face of a work situation. To pre-empty his assertion, motivation-related factors must be put in place in secondary schools to create job satisfaction among teachers and a good environment for student academic achievement (Adeyemo et al., 2013). On the other hand, motivation also plays an important role in the organization, because it increases the productivity of employees and goals can be achieved in an efficient way. The behavior of employees can be changed in any organization through motivation. From situation to situation, the level of motivation differs between individuals (Robbins et al., 2009). Teacher motivation is very important because it improves the skills and knowledge of teachers, which directly influences students' achievement (Mustafa & Othman, 2010). Based on the explanation above, the motivation of teachers is simply a process that is applied to teachers so that their behavior can be directed at efforts to achieve the objectives that have been set. The work motivation of teachers can be viewed as (1) the urge to be responsible, (2) the drive to achieve, (3) the urge to develop themselves, and (4) the urge to act independently.

Performance refers to skills, attitudes, behavior and action. Competence shows the characteristics of knowledge, skills, attitudes and experience to do the job (Wirawan, 2009, pp. 9–10). Johnson (1980, p. 12) describes the components of the competence unbiased competencies related to professional education, such as mastery of the theory, principles, strategies and techniques of education and teaching. The reality is that changes in the pattern of life that occurred this time was to impact the learning paradigm change. The learning paradigm has changed from a teacher-centered focus to one focused on the learner (student-centered). This learning paradigm change is closely related to the demands for competent mathematics teachers in VSHS. Teacher competence is a reflection of the perceptions, values and beliefs that individuals adopt when entering a teacher training program (Bhargava & Pathy, 2011). This is supported by Hirst (1990) and Koetsier et al. (1997). The same point has also been expressed by Joram and Gabrielle (1998), Anderson et al. (1995), Wubbels (1992), and Zeichner and Gore (1990), who state that most teachers follow a program that is already perceived as a set of skills that can improve teacher competence. Wade and Moor (1992) stated that teachers need pedagogical knowledge and training to develop their own competence. Teacher competence is a set of knowledge, skills and behaviors that must be owned, internalized and mastered by teachers in carrying out their duties in a dignified and responsible manner.

A VSHS professional mathematics teacher is an important determinant of the quality education process. In order to become a professional mathematics teacher at a VSHS school, teachers should be able to discover their identity and actualize themselves in accordance with their capabilities and the rules followed by professional VSHS teachers. Furthermore, in an effort toward self-development, VSHS mathematics teachers should be encouraged to be more creative, innovative and pace themselves when mastering the substance of mathematics and mathematics curriculum subjects. Potentially develop proficiency mathematics learning mathematics that would be very useful in everyday life, both for those who will pursue careers in science or not.

Based on the background of the issues described above, this study will try to empirically

analyze whether the competence, job motivation and innovativeness of mathematics teachers affect their performance. Research has previously been undertaken using a sample of mathematics teachers at a VSHS in the city of Semarang (Suwiyadi, 2012). In the current research, we attempt a study of how VSHS mathematics teacher performance in Central Java province is influenced by the variables of competence, motivation, and innovation. In particular, the formulation of the problem is as follows:

1. Does mathematics teachers' competence have an influence on their performance in the VSHS in the Central Java province?
2. Does mathematics teachers' work motivation have an influence on their performance in the VSHS in the Central Java province?
3. Does mathematics teachers' innovativeness have an influence on their performance in the VSHS in the Central Java province?
4. Does mathematics teachers' competence influence their innovativeness in the VSHS in the Central Java province?
5. Does mathematics teachers' work motivation influence their innovativeness in the VSHS in the Central Java province?

Thus, the research hypotheses are as follows:

1. Mathematics teacher competence has an influence on mathematics teacher performance.
2. Mathematics teacher motivation has an influence on mathematics teacher performance.
3. Mathematics teacher innovativeness has an influence on mathematics teacher performance.
4. Mathematics teacher competence has an influence on mathematics teacher innovativeness.
5. Mathematics teacher work motivation has an influence on mathematics teacher innovativeness.

2 METHODOLOGY

The method used in this research is a survey method with a quantitative research approach. This type of survey research focuses on discovery of causal relationships between variables. The dependent variable in this study is a vocational school mathematics teacher's performance, and the three independent variables are: the competence, work motivation, and innovativeness of mathematics teachers at VSHS in the province of Central Java. Data regarding the variables of competence, work motivation, innovativeness and performance were all collected by a questionnaire, which had been developed according to the indicators of each variable.

The population in this study consisted of mathematics teachers from VSHS in the Central Java province that had worked at least three years and had the minimum degree level in mathematics education. The qualifying population numbered 275 people, and the number of teachers of mathematics included in the sample in this study was 200. This sample was analyzed using LISREL (Ghozali, 2008, p. 13), statistical software used to identify latent variables through Structural Equation Modeling (SEM). The technique is proportional to VSHS in Central Java province refers to the presentation of the number of mathematics teachers were taken on each VSHS in a manner proportional random sampling.

3 FINDINGS AND DISCUSSION

As shown in Table 1, the result of the calculations on the 200 samples showed an average (mean) score for mathematics teachers' performance of 86.55. The mode value for performance was 106, with a median of 100.50 and a standard deviation of 22.534. Of the sample, 110 mathematics teachers (55%) performed at the level of the group's average, 24 mathematics teachers (12%) showed performance above average, and as many as 66 mathematics teachers (33%) had performance below average.

The average score for mathematics teacher competence was 135.18. The mode value for competence was 138, with a median of 138.00 and a standard deviation of 11.104. Of the sample, 128 mathematics teachers (64%) demonstrated average competence for the group, with 57 (28.5%) above average, and 15 mathematics teachers (7.5%) being below average.

Table 1. Results of statistical analysis.

	Competency	Work motivation	Innovativeness	Performance
N -valid	200	200	200	200
-missing	0	0	0	0
Mean	135.18	81.96	112.03	86.55
Std. error of mean	.785	1.720	2.488	1.593
Median	138.00	82.00	134.00	100.50
Mode	138	51[a]	61	106
Std. deviation	11.104	24.320	35.189	22.534
Variance	123.304	591.476	1238.260	507.786
Range	52	72	91	62
Minimum	101	48	56	52
Maximum	153	120	147	114
Sum	27036	16392	22406	17310

[a] Multiple modes exist; the smallest value is shown.

In terms of mathematics teacher work motivation, the average value was 81.96. The mode value for work motivation was 51, with median and standard deviation values of 82.00 and 24.320, respectively. Of the sample, 147 mathematics teachers (73.5%) were deemed to have average work motivation, with 27 mathematics teachers (13.5%) having above average work motivation, and as many as 26 mathematics teachers (13%) seen as below average.

The average value of the innovativeness score for the mathematics teachers was 112.03. The mode value for mathematics teacher innovativeness was 61, with a median of 134.00 and a standard deviation of 35.189. Of the sample, 120 mathematics teachers (60%) showed average innovativeness, 38 mathematics teachers (19%) were above average, and as many as 42 mathematics teachers (21%) seen as below average.

Innovative mathematical currently on average this group, 38 people (19%) of teachers of mathematics who innovativeness is above average, and as many as 42 people (21%) innovativeness mathematics teacher who was under average.

The result of testing the first hypothesis shows that mathematics teacher competence has a positive and significant effect on the performance of mathematics teachers. Thus competence is the most important variable for improving the performance of teachers of mathematics. This result is consistent with research conducted by Suwiyadi (2012), who shows that competence has a direct and positive effect on fluctuations in the performance variables of mathematics teachers. This finding also supports research conducted by Liu et al. (2005), Collings et al. (2010), and Anwar et al. (2012), who stated that competence affects performance. In addition, these findings support previous research that suggests that there is a positive relationship between competence and performance (Levenson et al., 2006; Ryan et al., 2009; Gammie & Joyce, 2009). The results of this study also support research conducted by Connie (2013), which stated that competence had a positive effect on the variables involved in performance of a high school teacher.

The study of the competence of mathematics teachers from VSHS in Central Java province was found to value competence in both categories. Values of these competencies possessed by approximately 55% VSHS mathematics teacher in Central Java province. This suggests that mathematics teachers have been successful in the use of mathematical concepts being taught to learners. If competency is low in mathematics teachers, then mastery of the theory, principles, strategies and techniques of education and teaching is also low, showing that mathematics teachers have not succeeded in making the subject of mathematics favorable to students, for teachers of mathematics are the parties most directly involved with learners in the mathematics learning process.

The results of testing the second hypothesis show that there is a positive and significant correlation between the work motivation of mathematics teachers in Central Java and their performance; it supports previous research conducted by Suwiyadi (2012) regarding mathematics teachers in a single city school. These findings also support research conducted by Ekosiswoyo (2003) and Tatik (2010), as well as research previously conducted that shows that there is a positive relationship between job motivation of teachers with their performance (Adeyemo et al., 2013; Robbins et al., 2009). Finally, these findings also support research showing that performance is influenced by the work motivation of teachers; thus an increase in their performance will affect the value of the students' level of achievement (Mustafa & Othman, 2010).

Performance and motivation constantly interact with each other. Performance is the embodiment of behavioral dimensions, while motivation is the internal dimension of a person's behavior. The analysis of the descriptive statistics showed that the work motivation of mathematics teachers at VSHS in Central Java province is still low, even though his motivation is good but have not been able to maximize the performance of teachers of mathematics, especially relating to the learning process of mathematics.

Testing of the third hypothesis shows that mathematics teachers' positive innovativeness has a significant effect on their performance. Indeed, innovativeness by mathematics teachers was the most important variable in improving their performance. This is in line with research conducted by Suwiyadi (2012) and Connie (2013), and these findings are also consistent with research conducted by Pedrò (2010), which states that innovation as a process of dynamic change can provide added value in the educational process, resulting in an increase in educational performance. Suharsaputra (2012) states that changes that occur in the community, either through direct input or society as a whole, demand an increase in teachers' capabilities in performing their duties. Mathematics teachers need to develop new ways to improve the quality of learners' education. Based on the analysis of descriptive statistics above, it was found that the mathematics teacher performance has been in the condition above average (60%) and are in good condition with a mean value of 86.55. In accordance with the data obtained in the field, mathematics teachers who have high innovativeness will constantly adjust their lessons to address any

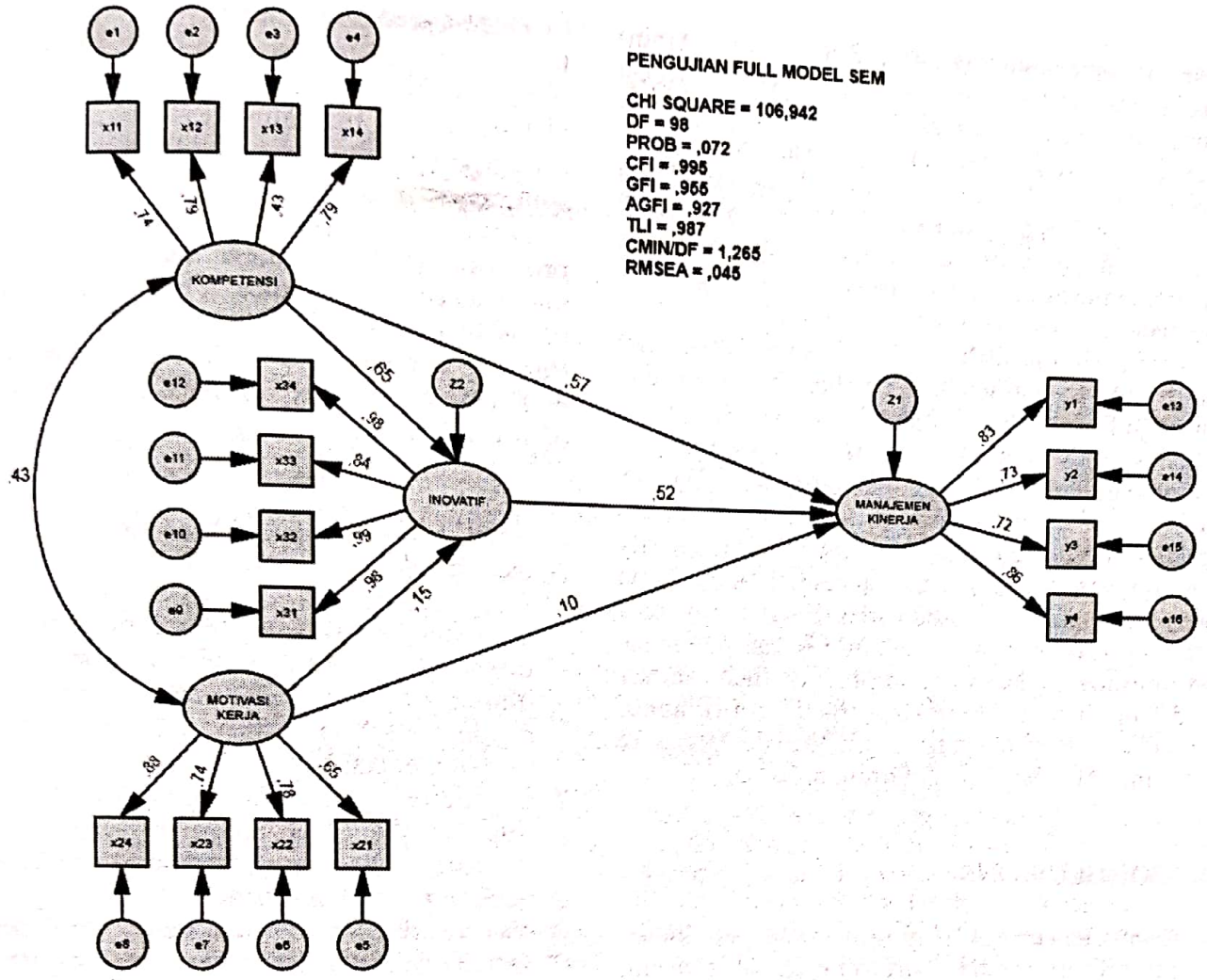

Figure 1. Full model SEM.

Table 2. Index feasibility testing full SEM.

Fit indicator	Cut-off value	Results analysis	Evaluation model
χ^2 - Chi-square	Expected to be small	106.942	Good
Significance probability	≥ 0.05	0.072	Good
RMSEA	≤ 0.08	0.045	Good
GFI	≥ 0.90	0.955	Good
AGFI	≥ 0.90	0.927	Good
CMIN/DF	≤ 2.00	1.265	Good
TLI	≥ 0.95	0.987	Good
CFI	≥ 0.95	0.995	Good

changes in the dynamics of the community so as to have a positive effect on performance.

Testing of the fourth hypothesis showed that mathematics teacher competence had a significant positive effect on the innovativeness of the mathematics teacher. Lower competence values will certainly impair the innovativeness of mathematics teachers, especially in relation to the process of

Table 3. Regression weights of full model SEM.

			Estimate	S.E.	C.R.	p	Label
x3	<---	x1	2.049	0.247	8.281	***	par_11
x3	<---	x2	0.335	0.154	2.178	0.029	par_12
Y	<---	x1	0.595	0.061	9.689	***	par_10
Y	<---	x3	0.171	0.014	12.142	***	par_17
Y	<---	x2	0.078	0.021	3.712	***	par_18
x11	<---	x1	1.000				
x12	<---	x1	0.739	0.064	11.605	***	par_1
x13	<---	x1	0.384	0.064	5.994	***	par_2
x14	<---	x1	0.904	0.079	11.482	***	par_3
x21	<---	x2	1.000				
x22	<---	x2	1.373	0.148	9.253	***	par_4
x23	<---	x2	1.394	0.158	8.824	***	par_5
x24	<---	x2	1.184	0.120	9.895	***	par_6
x31	<---	x3	1.000				
x32	<---	x3	0.991	0.017	56.686	***	par_7
x33	<---	x3	0.652	0.031	20.828	***	par_8
x34	<---	x3	0.722	0.014	50.709	***	par_9
y2	<---	y	0.912	0.071	12.866	***	par_13
y1	<---	Y	1.000				
y3	<---	Y	0.867	0.069	12.554	***	par_14
y4	<---	Y	1.489	0.090	16.581	***	par_16

learning mathematics (Connie, 2013). From a training program attended by teachers this will impact on improving teacher competence. Of these competencies will encourage teachers to innovate in the process of learning (Joram & Gabriele, 1998; Anderson et al., 1995; Barghava & Pathy, 2011; Wubbels, 1992; Zeichner & Gore, 1990). Learning to manipulate in order to improve innovative be easily done by teachers mate.

Testing of the fifth hypothesis showed that the motivation of mathematics teachers has a positive and significant effect on their innovativeness. Mathematics teachers' work motivation is an important variable in improving their innovativeness (Connie, 2013). The high motivation of a mathematics teacher will bring out and improve their creativity and innovativeness, in accordance with the facts on the ground that the mathematics teacher who has a high motivation to work will find it easier to make innovations in learning, improving their impact and, ultimately, improving their performance (Innayatullah & Jengahir, 2013; Malik, Danish, & Usman, 2010; Mustafa & Othman, 2010).

4 CONCLUSIONS

1. Competence has a positive and significant impact on teacher performance. This means that if the competence of teachers increases, their performance also increases.
2. Motivation also has a positive and significant impact on teacher performance. This means that if the motivation of teachers increases, their performance also increases.
3. Innovativeness, too, has a positive and significant impact on teacher performance. This means that if teachers are more innovative then, again, their performance improves too.
4. Furthermore, teacher competency has a positive and significant impact on teachers' ability to innovate in relation to their duties and responsibilities. This means that if the competence of teachers increases, the innovativeness of teachers also increases.
5. In addition, the motivation of teachers also has a positive and significant impact on teachers' ability to innovate in terms of duties and responsibilities. This means that if the work motivation of teachers increases, their innovativeness as teachers also increases.

Based on the results of this research and the wider discussion it can be concluded that variation in the performance of VSHS mathematics teachers in the Central Java province is directly and positively influenced by improvements in their competence, work motivation, and innovativeness.

The recommendation put forward—especially for teachers of mathematics and related parties, such as principals, local government through the Department of Education and Culture, and other researchers in the field of education—is for the continuous improvement of teacher competence, motivation, and innovativeness through specific programs, which will have the effect of enhancing teacher performance. The programs should include further studies for teachers, professional training, seminars and workshops, which will ultimately have an impact on the quality and process of education and learning.

5 LIMITATIONS AND FUTURE RESEARCH

1. This study used a sample of secondary vocational schools, both public and private, randomized; future research can be used to analyze any public school or private course in the province of Central Java.
2. In addition to using questionnaires, future research should also employ secondary data that can be used to determine its effect on the performance of teachers.
3. The test results have analyzed some dependent variables in relation to teachers' performance; future research may explore other variables that might be used to improve the performance of teachers, such as compensation, job satisfaction, commitment and organizational culture.

REFERENCES

Adeyemo, A.R., Asabi, O. & Adedotun, O. (2013). Teachers' motivation on students' performance in mathematics in government secondary schools, Makurdi LG area. *International Journal of Humanities and Social Science Invention*, *2*(5), 35–41.

Anderson, L.M., Blumenfeld, P., Pintrich, R.R., Clark, C.M., Marx, R.W. & Peterson, P. (1995). Educational psychology for teachers: Reforming our courses, rethinking our roles. *Educational Psychologist*, *30*(3), 143–157.

Anwar, M.R., Djakfar, L.D. & Abdulhafidha, A.K. (2012). Human resources performance and competency of management by using a method of balanced scorecard. *International Journal of Civil & Environmental Engineering*, *12*(4), 1–5.

Bhargava, A. & Pathy, M. (2011). Perception of student teachers about teaching competencies. *International Journal of Contemporary Research*, *1*(1), 77–81.

Connie. (2013). The influence of professional competence, work motivation, and innovativeness on the performance of physics teacher. In *2nd International Seminar on Quality and Affordable Education (ISQAE 2013)* (pp. 133–138).

Davis, K. (1994). *Organizational behavior.* New York, NY: McGraw Hill.

Ekosiswoyo, R. (2003). *Pengaruh Pemberdayaan, Kepemimpinan Dan Motivasi Kerja Terhadap Kinerja Guru Sekolah Menengah Kejuruan Di Semarang.*

Gammie, E. & Joyce, Y. (2009). Competence-based approaches to the assessment of professional accountancy training work experience requirements: The ICAS experience. *Accounting Education, 18*(4–5), 443–466.

Ghozali, I. (2008). *Structural Equation Modeling: Teori, Konsep, dan Aplikasi Dengan Program LISREL 8.80.* Semarang, Indonesia: Badan Penerbit Universitas Diponegoro.

Hirst, P. (1990). The theory-practice relationship in teacher training. In M. Booth, J. Furlong & M. Wilkin (Eds.), *Partnership in initial teacher training* (pp. 74–86). London, UK: Cassell.

Johnson, C.E. (1980). *Answers to some basic questions about teacher competencies and competency-based education.* New York, NY: McGraw-Hill.

Joram, E. & Gabriele, A. (1998). Preservice teacher's prior beliefs: Transforming obstacles into opportunities. *Teaching and Teacher Education, 14*(2), 175–191.

Koetsier, C. Wubbels, T. & Korthagen, F. (1997). Learning from practice: The case of a Dutch postgraduate teacher education programme. In M. Fuller & A. Roise (Eds.), *Teacher education and school partnerships* (pp. 113–132). Lewiston, NY: Edwin Mellen.

Levenson, A.R., Van der Stede, W.A. & Cohen, S.G. (2006). Measuring the relationship between managerial competencies and performance. *Journal of Management, 32*(3), 360–380.

Liu, X., Ruan, D. & Xu, Y. (2005). A study of enterprise human resource competence appraisement. *Journal of Enterprise Information Management, 18*(3), 289–315.

Mangkunegara, A.P. (2006). *Evaluasi Kinerja Sumber Daya Manusia.* Bandung, Indonesia: PT Refika Aditema.

Mustafa, M. & Othman, N. (2010). The effect of work motivation on teacher's work performance in Pekanbaru senior high schools. Riau Province, Indonesia. *Sosiohumanika, 3*(2), 259–272.

Pedrò, F. (2010). The need for a systemic approach to technology-based school innovations. In *Inspired by technology, driven by pedagogy. A systemic approach to technology-based school innovations* (pp. 11–18). Paris, France: OECD Publishing.

Robbins, S., Judge, T. & Sanghi, S. (2009). *Organizational behavior* (13th ed.). New Delhi, India: Pearson Education.

Rogers, C.R. (1982). *Towards a theory of creativity.* In P.E. Vernon (Ed.), *Creativity.* Harmondsworth, UK: Penguin Books.

Rogers, E.M. (1995). *Diffusion of innovations* (3rd ed.). New York, NY: The Free Press.

Rusman. (2011). *Model-Model Pembelajaran: Mengembangkan Profesionalisme Guru.* Jakarta, Indonesia: Rajawali.

Ryan, G., Emmerling, R.J. & Spencer, L.M. (2009). Distinguishing high-performing European executives. *Journal of Management Development, 28*(9), 859–875.

Suharsaputra, U. (2012). *Pengembangan Kinerja Guru.* Retrieved from http://uharsputra.wordpress.com

Suwiyadi. (2012). Model Kinerja Guru SMK Di Kota Semarang. *Jurnal Penelitian Pendidikan, 29*(1), 66–74.

Tatik, S. (2010). *Pengariuh Motivasi Nilai Budaya Kompensasi Pelatihan Motivasi Kerja Dan Kepuasan Kerja Terhadap Kinerja Guru SMA Se-Kota Surakarta.*

Undang-Undang Republik Indonesia Nomor 13 Tahun 2003. Tentang Ketenagakerjaan.

Undang-Undang Republik Indonesia Nomor 14 Tahun 2005. Tentang Guru Dan Dosen.

Undang-Undang Republik Indonesia Nomor 20 Tahun 2003. Tentang Sistem Pendidikan Nasional.

Wade, B. & Moor, M. (1992). *Patterns of educational integration: International perspectives on mainstreaming children with special educational needs.* Wallingford, UK: Triangle.

Wirawan, O. (2009). *Evaluasi Kinerja Sumber Daya Manusia: Teori, Aplikasi, dan Penelitian.* Jakarta, Indonesia: Salemba Empat.

Wubbels, T. (1992). Taking account of student teacher's perceptions. *Teaching and Teacher Education, 8*, 137–150.

Zeichner, K.M. & Gore, J. (1990). Teacher socialisation. In W.R. Houston (Ed.), *Handbook of research on teacher education.* New York, NY: MacMillan.

Trends and Issues in Interdisciplinary Behavior and Social Science

Editors

Ford Lumban Gaol
Fonny Hutagalung
Chew Fong Peng
Zulkifli Md Isa
A.R. Rushdan

CRC Press
Taylor & Francis Group
A BALKEMA BOOK

PROCEEDINGS OF THE 5TH INTERNATIONAL CONGRESS ON INTERDISCIPLINARY BEHAVIOR AND SOCIAL SCIENCE (ICIBSoS 2016), 5–6 NOVEMBER 2016, JOGJAKARTA, INDONESIA

Trends and Issues in Interdisciplinary Behavior and Social Science

Editors

Ford Lumban Gaol
Bina Nusantara University, Indonesia

Fonny Hutagalung, Chew Fong Peng, Zulkifli Md Isa & A.R. Rushdan
University of Malaya, Malaysia

CRC Press
Taylor & Francis Group
Boca Raton London New York Leiden

CRC Press is an imprint of the
Taylor & Francis Group, an informa business
A BALKEMA BOOK

Cover credentials:
Borobudur Temple at sunrise, Indonesia.
By Vorasak Sombatpiboon
Stock photo ID: 164449265

CRC Press/Balkema is an imprint of the Taylor & Francis Group, an informa business

Typeset by V Publishing Solutions Pvt Ltd., Chennai, India
Printed and bound in Great Britain by CPI Group (UK) Ltd, Croydon, CR0 4 YY

Published by: CRC Press/Balkema
Schipholweg 107C, 2316 XC Leiden, The Netherlands
e-mail: Pub.NL@taylorandfrancis.com
www.crcpress.com – www.taylorandfrancis.com

ISBN: 978-1-138-03516-4 (Hbk)
ISBN: 978-1-315-26918-4 (eBook)