# Teaching Quality Mediation: Contributions to the Principal's Strategy with the Competency of Students

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ABSTRACT--The study aims to describe the influence of the principal's strategy on student competence and indirect influence through teaching quality mediation. Data is obtained from 45 vocational schools in Bandung City and analyzed by the path of analysis. The results of the research obtained the scale score of P-values strategy of the school principal towards the teaching quality of 0.210 while the indirect influence of the principal's strategy on the competency of students through the teaching quality of 0.003. Based on the P-value, it can be concluded that: 1) The principal's strategy has no significant effect on the student's competence; 2) The quality of teaching is capable of dissemination of the relationship between managerial strategies and students ' competence. As a recommendation, in formulating the principal strategy should prioritize on giving teachers the opportunity to focus more on students by reducing the administrative burden of the teaching.

Keywords-- Leadership strategies, student competence, teaching quality, vocational school

# I. INTRODUCTION

The 4.0 industrial era brings a new paradigm in education, especially vocational schools. Vocational schools are currently faced with new demands in creating human resources with new competencies that are much more different from current competencies (Ermawati & Wagiran, 2019). Education in the 4.0 era wants graduates of vocational schools with the ability to finish work with new patterns (Samani, 2018) and ready to work with competencies received in industrial environment (Amiron & Abdul Latib, 2019) and able to compete competitively in the global market (Nurhadi & Lyau, 2017).

The vocational school is closely related to the economic development of a country and becomes a social policy instrument in improving the welfare of the people (Guthrie et al., 2009), designed to meet the demands of industry and the economic growth of the Front (Arifin et al., 2018). This is considering that vocational schools are aiming to provide a working market with sub-professional skills (Rahman et al., 2014). Likewise, in Indonesia, the design of a vocational school is to prepare human resources that are ready to work so that competency mastery becomes an important aspect (Kurniady, DA., Komariah, A., 2018).

The jargon of 'SMK bisa' is a vocational school identity in Indonesia, that SMK graduates are ready to be placed in an industry or self-employed independently. That Slogan was actually a signal that vocational school graduates have a sufficient set of competencies to become independent individuals and become pioneers of new

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employment with entrepreneurial capabilities. Therefore, a number of competencies need to be developed in a more complex and comprehensive direction to meet the demands of the current industry. The industry has great potential to be one of the important driving sectors to create a good and advanced economy (Maulana et al., 2018).

Three competency domains that students need to master include attitudes, skills, and knowledge (Yanto, 2013). The study conducted by Kyndt et al. (2014) resulted in seven specific competencies that became the main provision of students to succeed in the workforce, including: empathy, listening, assertiveness, professional attitude, problem solving, cooperation ability and, planning and prioritizing. Some of these competencies need to be developed in such a way following the demands of industry.

The competency profile of the students of the study results in the city of Bandung, of three studied competencies (knowledge, attitudes, and skills) shows an average score of 6.40. The number is still under the ideal criteria (SNP) set, namely 6.67 - 7.00 (LPMP Jawa Barat, 2019).

By not achieving the ideal competency as an indication that in the process of education in the vocational school is not optimal. A number of factors that are thought to be the reason why this happens between the school is not effective strategy from the principal (Deeboonmee, 2014), and the quality of the learning process performed by the teacher (Nurlatifah & Kurniady, 2019).

The principal's strategy has an important contribution to mastering the competency of students through the creation of a quality learning environment (Cheeseman et al., 2019). In drafting a strategy, the principal must be aligned with a clear vision (Mammadova & Najafov, 2019). One of the principals ' strategy in improving the competency of graduates is through strengthening the professional competence of teachers (Muyiman, 2018); Conducting competency-based training (Malik et al., 2018); Environmental conditioning, character integration through learning activities (Ribuwati et al., 2019); Develop structures, build engagement and collaboration (Bell, 2002). Principals need to map out which strategies are appropriate to make performance jumps at different levels of school hierarchy (Devies & Ellison, 2003). The mapping was carried out as a strategy with the highest strength levels followed by creating opportunities, and ultimately promoting the strategy (Kannan, 2012).

Teachers play a role in creating quality learning through the mastery of their competence. Competence in question such as pedagogic competence, professional competence, personality competence, and communication competence (Arifin et al., 2018; Ermawati & Wagiran, 2019). The level of competency mastery of students depends on the availability of teachers who are knowledgeable, skilled and able to create quality learning (Che Rus et al., 2017), which is responsible for the transfer of knowledge, skills, and attitude to Students (Nurhadi & Lyau, 2017). Therefore, the quality of the teachers will determine the extent to which the students are able to master the competencies expected.

Vocational school teachers have the responsibility of preparing graduates as a workforce in the future (Mammadova & Najafov, 2019). A reflection of quality learning is when the teacher is able to integrate skills and knowledge that is possessed at the time of teaching (Mammadova & Najafov, 2019). Through a competency-based curriculum, can be expected that aspects of knowledge and competence can be developed. Knowledge aspects integrate practical and theoretical knowledge as well as personal and social qualities in the field of work. While the aspect of competence is more to the performance and the fragmented and narrow task (Brockmann et al., 2008).

Learning in vocational education is oriented towards education and competency based training (Rahman et al., 2014) as an educational innovation globally especially in vocational education (Mulder et al., 2007), although it is

still a polemic in a number of countries (Germany, Netherlands, France, and the United Kingdom). Criticism that is made against this curriculum is delivered due to the lack of a coherent definition of the concept of competency itself, lack of relationship between competence and performance, the presence of ideas in which the concept of competency reduces the value Knowledge, difficulty in translating into teaching practice (Mulder et al., 2007).

### II. LITERATURE REVIEW

#### Principal's Strategy

The headmaster is the person who is responsible for the success of education so that there needs to be a proper strategy in leading and managing the existing resources. The essence of a strategy is to determine the best position of existing opportunities and resources available by adapting to the activities to be performed (Falkheimer et al., 2018). The four elements of strategy that become necessary for the headmaster to make the strategy can run effectively, including: a) contemporary missions, b) a global approach, c) a new thinking paradigm, and d) better decision making process. (Smith & Rayment, 2009). In formulating a strategy, there are three main elements that the principal needs to keep in mind: 1) strategy analysis involving stakeholders; 2) a strategies choice consisting of determining direction, determination of priorities, vision and mission; 3) acts as a interpreter of the strategy (Van Wyk & Moeng, 2013).

As a leader, the headmaster should be able to translate new ideas more practical and easy to implement (Smith & Rayment, 2009), designing and guiding the realization of complex collaborations to accelerate innovation and change (Kinnamon & Carrasco, 2019). The school principal's strategy must be aligned with change. The more efficient the leadership strategy will be the more changes will occur (Zala-Mezö et al., 2019). Strategies can run well when a number of aspects are met. The equality of vision of all elements of the school, the existence of formal relations and collaborative structures involving stakeholders, the presence of open dialogue relating to challenges and solutions, the inclusion of partners, and the benefit of resources Including in terms of school funding (Blank et al., 2012).

The principal strategy is part of the management function of the leadership process that is ran (Eacott, 2011). The school's strategy to improve student competence occurs through the involvement and active role of teachers in learning so that the established strategies must reach out to the needs of the didactic development, professional development of teachers , stakeholder engagement, and fostering teacher innovation and creativity in Learning (Nielsen, 2010). The effectiveness of principal's strategy creates a conducive environment for learning activities (Cunha & Magano, 2019). In terms of strategy determination, the headmaster can use an instructional leadership strategy to improve student learning outcomes as well as improve teacher practice in teaching(Campbelletal.,2019)

#### Student's Competencies

Vocational schools today have the demands to develop the competency of students needed in order to work effectively (Kjellgren & Keller, 2019). This is a challenge for school management in a dynamic era and changes that occur so rapidly (Afandi & Mustajab, 2019). The competency size of the vocational students not only includes knowledge, but also the actions or behaviors demonstrated as the form of mastery of skills (Winther & Achtenhagen, 2009). A number of skill domains that need to be developed in their students are: a) learning and

growth; b) behavior and relationships; c) leadership; d) critical thinking, analysis, planning, and implementation; e) professional communication; f) values and ethics (Regehr et al., 2012). Efforts to develop student skills can be done by organizing industrial work practices, the intensity of work guidance, the specifications of vocational competence, and the implementation of Occupational Readiness Program (Putri & Sutarto, 2018).

Some research findings indicate that students ' ability can be developed if supported by the availability of competent teachers, adequate facilities, and the discipline of the students themselves (Nursikuwagus et al., 2018), principal competence (Wagiran et al., 2019), Teaching Factory learning (Alptekin et al., 2001)

#### **Teaching Quality**

Professional teachers are teachers who are able to teach well so that they can create a qualified student (Lazarides & Buchholz, 2019). Therefore, the teaching quality improvement strategy must be conducted by teachers so that students have complete experience and competence. The quality of teaching impacts the quality of education in schools (Skedsmo & Huber, 2019).

Quality teaching comes from the ability, skills, and experience of a teacher that is transformed to students in the form of quality teaching (Vagi et al., 2019). More deeply, the quality of instruction also comes from the self-efficacy of the ability to possess (Jeon, 2019; Liu & Liao, 2019). Quality teaching can foster the creativity of students in learning (Cremin & Chappell, 2019), forming awareness to learn (Yacob et al., 2012), Better learning interests (Mazer, 2013), as well as high learning motivation (Tas et al., 2019).

## III. METHOD

In this study, data was taken from 45 vocational high school in Bandung City. Data obtained next in analysis with path analysis technique. The three variables that focus on the research are the principal's strategy, the competency of graduates, as well as the quality of teaching as a mediation variable.

Data processing results show a model-qualified testing model. This was visible from any value in the model parameter as follows:

- Average path coefficient = 0.001
- Average R-squared = 0.011
- Average adjusted R-squared = 0.018
- Average block VIF = 1,029
- Average full collinearity VIF = 1,497
- Tenenhaus GoF = 0.404
- Nonlinear bivariate causality direction ratio = 1,000

In this study, the school principal's strategy was measured in five strategies: 1) school management; 2) improved teacher quality; 3) strengthening the competency of graduates; 4) curriculum development; and 5) The improvement of teaching quality. In the teaching quality variable, measured through three main indicators, namely: 1) process quality; 2) The quality of the contents, and also 3) class management. As for the students ' competency variables, this study was measured in three indicators including: 1) attitudes; 2) knowledge, and 3) skills.

## IV. RESULTS

From the results of the data processing, obtained the results as shown below.

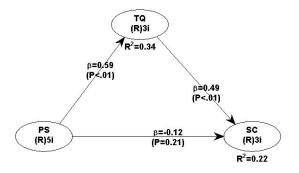


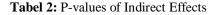
Figure 1: Structural Model Estimation

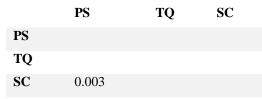
The Model equation above shows the significance score in each of the lines and the beta coefficient. A number of things that can be interpreted from these results are as follows: 1) with a P-value of 0.210 indicating that the principal's strategy (PS) is not significant to the student's competence (SC); 2) Influence of the principal's strategy on the competency of students occurs indirectly through the mediation of the quality of teaching (TQ) P-value of 0.003.

Tabel 1: I	Path (	Coefici	ent
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	PS		TQ		SC
PS					
TQ	(	0.586			
SC	-(	0.120		0.489	

The above regression beta coefficient can explain the influence of the principal's strategy (PS) on student competence (SC) which showed a negative influence with the coefficient value of -0.120. While the indirect effect between PS and SC through teaching quality (TQ) showed a positive influence, with a regression coefficient of 0.586 and 0.489.





The indirect effect of the principal's strategy on student competence through the quality of teaching from the table above shows the P-values of 0.003 or <0.005, which means the principal's strategy had a significant indirect effect on student competency.

# V. DISCUSSION

#### The principal's strategy of graduates ' competence

The results shown in the data processing show that students' competence was not created by the principle strategy directly. Strategy is a management function that does not intersect directly with students. Or rather it was not perceived in real by students but through other elements in the school. This results in strengthening the school as an ecosystem consisting of many components interacting with each other directly or indirectly with the students. The principal's strategy of interacting indirectly through the culture perceived by all students, the existence of pedagogical collaboration, education services, was an essential tool for mastering this form of diversity (Ballangrud & Paulsen, 2018).

Students as an educational input instrument were developed in a series of processes involving many components of the school, and the principal as a leader was responsible for engaging those components. Thus it became reasonable when the principal's strategy does not give a real impact on student competence.

Strategy was a matter of the invisible as the form of actualization of ideas in developing the organization in a better direction in the future. The design of the principal strategy should be able to describe the long-term planning, strengthening the learning environment, the quality of students ' teaching, the creation of learning communities, and raising community support for schools (Caswell, 2013).

In addition, the principal as a leader is not an individual who directly interacts with students. Interactions that occur between the principal and the interaction of school policies and programs.

The main component in the principal's strategy was the involvement and role of teachers who interact directly in the process of student competency formation. This means that in the process of establishing this competency, the principal and strategy were set to be external components that support the formation process. Strategy was not present in real time in this process, but it was realized with the support of the resources owned by the school.

A form of support from the school principal in the establishment of the competency of the students through the professional developers and on the development of skills through systematic and sustainable instruction (Burch & Spillane, 2003). This needs to be done not only as part of a leader's work, it was also a strategy for promoting a quality learning environment for students (Cheeseman et al., 2019)

#### Mediation of quality teaching to the principal's strategy with the competence of vocational school students

The contribution of the school's strategy to the competence of vocational students in Bandung City from the research results present through the mediation of teaching quality.

The quality of teaching was key to the success of the school in shaping the competencies in both the attitudes, knowledge, and skills that students need for their future success.

The quality of teaching as a mediation relationship between the principal strategy and the quality of teaching was heavily influenced by teacher factors. Teachers with the ability to transform knowledge and good skills is a guarantee of the learning of quality money. The headmaster strategically sought to influence the composition of school lecturers by maintaining high-performance teachers (Grissom & Bartanen, 2019).

The headmaster's policy of lowering the teacher's burden administratively and providing a broad opportunity for teachers to develop new competencies is an effective strategy in building teaching quality. Leadership and autonomy teachers were able to provide an atmosphere in which teachers can focus more on teaching and development of student competencies (Roy et al., 2018). In addition, by providing teachers with more opportunities to interact with students than can foster a level of learning motivation to students also help teachers to obtain a picture of the competency needs that students need. This way was considered effective to encourage joint success between teachers and students (Roy et al., 2018).

Points that need to be interpreted from the results of the school principal through the quality of teaching are not solely related to the dichotomy of teaching, learning and outcomes, but also related to the integrated conceptualization of the relationship between teaching, ecological learning in the community, especially the industry(Male&Palaiologou,2015).

In a specific strategy, the quality of the school can be developed through the determination of a learning model that enables students' competence to be developed broadly, such as in competency-based learning, which allows better for the learning practices and the integration of characters through learning activities (Ribuwati et al., 2019). Therefore, the quality of teaching was the key element of the school principal in shaping the student competencies needed in this industry era.

## VI. CONCLUSION

Principal strategy was an important factor in developing the competency of students in the 4.0 industrial era with complex demands to the educational institutions in supplying human resources that are aligned with the needs. The competency of students was not formed directly through the strategy established by the principal, but through the quality of teaching that the main element was the teacher. The quality of teaching as a guarantee of better student competency development needs to be used as a priority strategy with the teacher as a component developed. The encouragement and giving teachers the opportunity to focus more on students by reducing the administrative burden of providing opportunities can be considered as a strategy for developing better student competencies.

## REFERENCES

- Afandi, R., & Mustajab, M. (2019). Contestation of Global Competencies: The Concepts of 3 Featured Madrasah Ibtidaiyah in Banyumas. Jurnal Pendidikan Islam. https://doi.org/10.14421/jpi.2018.72.361-382
- Alptekin, S. E., Pouraghabagher, R., McQuaid, P., & Waldorf, D. (2001). Teaching factory. ASEE Annual Conference Proceedings.
- 3. Amiron, E., & Abdul Latib, A. (2019). Industry 4.0 Skills and Enablers in TVET Curriculum.
- Arifin, M. A., Mohd Rasdi, R., Anuar, A., & Omar, M. (2018). Competencies of Vocational Teacher: A Personnel Measurement Framework. International Journal of Academic Research in Business and Social Sciences, 7(14). https://doi.org/10.6007/IJARBSS/v7-i14/3659
- Ballangrud, B. B., & Paulsen, J.-M. (2018). Leadership Strategies in Diverse Intake Environments. Nordic Journal of Comparative and International Education (NJCIE). https://doi.org/10.7577/njcie.2784

- Bell, L. (2002). Strategic planning and school management: Full of sound and fury, signifying nothing? Journal of Educational Administration, 40, 407–424. https://doi.org/10.1108/09578230210440276
- Blank, M. J., Jacobson, R., Melaville, A., & Progress, C. for A. (2012). Achieving Results through Community School Partnerships: How District and Community Leaders Are Building Effective, Sustainable Relationships. In Center for American Progress.
- Brockmann, M., Clarke, L., Méhaut, P., & Winch, C. (2008). Competence-Based Vocational Education and Training (VET): the Cases of England and France in a European Perspective. Vocations and Learning, 1(3), 227–244. https://doi.org/10.1007/s12186-008-9013-2
- Burch, P., & Spillane, J. P. (2003). Elementary School Leadership Strategies and Subject Matter: Reforming Mathematics and Literacy Instruction. In Elementary School Journal. https://doi.org/10.1086/499738
- Campbell, P., Chaseling, M., Boyd, W., & Shipway, B. (2019). The effective instructional leader. Professional Development in Education. https://doi.org/10.1080/19415257.2018.1465448
- 11. Caswell, S. M. (2013). International school leadership: Strategies for sustainability. In ProQuest Dissertations and Theses.
- Che Rus, R., Malik, S., Hanapi, Z., Mohamed, S., Mohammad Hussain, M. A., & Shahrudin, S. (2017). Skills and Knowledge Competency of Technical and Vocational Education and Training Graduate. Asian Social Science, 13(4), 69. https://doi.org/10.5539/ass.v13n4p69
- Cheeseman, S., Walker, R., Corrick, G., & Reed, M. (2019). Pedagogical leadership. In Pedagogies for leading practice. https://doi.org/10.4324/9781351266925-6
- Cremin, T., & Chappell, K. (2019). Creative pedagogies: a systematic review. Research Papers in Education. https://doi.org/10.1080/02671522.2019.1677757
- Cunha, M. Z. B. A., & Magano, J. (2019). Principal's Management Strategy. JOURNAL OF EDUCATION AND HUMAN DEVELOPMENT, 8, 2334–2978. https://doi.org/10.15640/jehd.v8n3a14
- Deeboonmee, W. (2014). Relationship between Strategic Leadership and School Effectiveness. Procedia
  Social and Behavioral Sciences, 112, 982–985. https://doi.org/10.1016/j.sbspro.2014.01.1258
- 17. Devies, B., & Ellison, L. (2003). The New Strategy Direction and Development of The School: Key Framework for School Improvement Planning (Second). Routledge Falmer.
- Eacott, S. (2011). Strategy and the Principal. In School Leadership and Strategy in Managerialist Times (pp. 1–7). SensePublishers. https://doi.org/10.1007/978-94-6091-657-1\_1
- Ermawati, R., & Wagiran. (2019). Profile of Vocational Learning in the Era of Industrial Revolution 4.0 (Studies at Department of Automotive Vocational High School). Journal of Physics: Conference Series, 1273(1), 0–10. https://doi.org/10.1088/1742-6596/1273/1/012015
- 20. Falkheimer, J., Heide, M., Falkheimer, J., & Heide, M. (2018). What is strategy? In Strategic Communication. https://doi.org/10.4324/9781315621555-3
- Grissom, J. A., & Bartanen, B. (2019). Strategic Retention: Principal Effectiveness and Teacher Turnover in Multiple-Measure Teacher Evaluation Systems. American Educational Research Journal. https://doi.org/10.3102/0002831218797931
- Guthrie, H., Harris, R., Simons, M., & Karmel, T. (2009). Teaching for Technical and Vocational Education and Training (TVET). In International Handbook of Research on Teachers and Teaching. (Springer I, pp. 851–864). Springer, Boston, MA. https://doi.org/10.1007/978-0-387-73317-3\_55

- Jeon, H. (2019). Teacher Efficacy Research in a Global Context. In International Handbook of Teacher Quality and Policy. https://doi.org/10.4324/9781315710068-27
- 24. Kannan, S. (2012). Principal's Strategies for Leading ICT Integration: the Ma-laysian Perspective. Creative Education, 03(08), 111–115. https://doi.org/10.4236/ce.2012.38B023
- 25. Kinnamon, E., & Carrasco, G. (2019). Book Review Strategic Doing: Ten Skills for Agile Leadership. American Jounral Of Enterperenuship.
- Kjellgren, B., & Keller, E. (2019). Introducing Global Competence in Swedish Engineering Education. Proceedings - Frontiers in Education Conference, FIE. https://doi.org/10.1109/FIE.2018.8659122
- 27. Kurniady, DA., Komariah, A. (2018). A review of continuous professional development in school principal carrier. Opcion. Volume 34. Issue 17.
- Kyndt, E., Janssens, I., Coertjens, L., Gijbels, D., Donche, V., & Van Petegem, P. (2014). Vocational Education Students' Generic Working Life Competencies: Developing a Self-Assessment Instrument. Vocations and Learning, 7(3), 365–392. https://doi.org/10.1007/s12186-014-9119-7
- Lazarides, R., & Buchholz, J. (2019). Student-perceived teaching quality: How is it related to different achievement emotions in mathematics classrooms? Learning and Instruction. https://doi.org/10.1016/j.learninstruc.2019.01.001
- Liu, Y., & Liao, W. (2019). Professional development and teacher efficacy: evidence from the 2013 TALIS. School Effectiveness and School Improvement. https://doi.org/10.1080/09243453.2019.1612454
- 31. LPMP Jawa Barat. (2019). Laporan Akuntabilitas Kinerja LPMP Jawa Barat 2018.
- Male, T., & Palaiologou, I. (2015). Pedagogical leadership in the 21st century. Educational Management Administration & Leadership, 43(2), 214–231. https://doi.org/10.1177/1741143213494889
- Malik, M., Soenarto, S., & Sudarsono, F. X. (2018). The competency-based training model for vocational high school teachers from electrical expertise programs. Jurnal Pendidikan Vokasi, 8, 313. https://doi.org/10.21831/jpv.v8i3.19877
- Mammadova, S., & Najafov, R. (2019). Teacher quality vs. Teaching quality. Azərbaycan Məktəbi, 686, 25–32. https://doi.org/10.32906/AJES/686/2019.01.36
- Maulana, I., Sumarto, S., Hakim, D., & Gafar Abdullah, A. (2018). Photographic skill competency for vocational high school. IOP Conference Series: Materials Science and Engineering, 434, 12300. https://doi.org/10.1088/1757-899X/434/1/012300
- Mazer, J. P. (2013). Associations Among Teacher Communication Behaviors, Student Interest, and Engagement: A Validity Test. Communication Education. https://doi.org/10.1080/03634523.2012.731513
- Mulder, M., Weigel, T. M., & Collins, K. (2007). The Concept of Competence in the Development of Vocational Education and Training in Selected EU Member States: a Critical Analysis. Journal of Vocational Education and Training 59 (2007) 1, 59. https://doi.org/10.1080/13636820601145630
- Muyiman, M. (2018). The strategy of Madrasa Ibtidaiya Principal in human resource development for increasing teachers' professional and academic competency. MUDARRISA: Journal of Islamic Education, 10, 127. https://doi.org/10.18326/mdr.v10i1.127-147
- Nielsen, S. (2010). Vocational Education and Training Teacher Training. In International Encyclopedia of Education (pp. 503–512). https://doi.org/10.1016/B978-0-08-044894-7.00808-3
- 40. Nurhadi, D., & Lyau, N.-M. (2017). A Conceptual Framework for the Development of Twenty-First

Century Vocational Teachers' Professional Competencies. International Forum of Teaching and Studies, 13(2), 8–20.

- 41. Nurlatifah, S., & Kurniady, D. A. (2019). Quality of Vocational School Education in Bandung City. https://doi.org/10.2991/icream-18.2019.82
- Nursikuwagus, A., MeLian, L., & Permatasari, D. (2018). Computational model of student competency analysis in fuzzy topsis method. IOP Conference Series: Materials Science and Engineering. https://doi.org/10.1088/1757-899X/407/1/012095
- Putri, D. Y., & Sutarto, S. (2018). The effect of industrial work practice, guidance intensity of industrial side, and vocational competence on working readiness of grade XII students of banking program, Vocational High School Perbankan, Pekanbaru. Jurnal Pendidikan Vokasi. https://doi.org/10.21831/jpv.v8i2.18908
- Rahman, A., Hanafi, N., Mukhtar, M., & Ahmad, J. (2014). Assessment Practices for Competency based Education and Training in Vocational College, Malaysia. Procedia - Social and Behavioral Sciences, 112, 1070–1076. https://doi.org/10.1016/j.sbspro.2014.01.1271
- 45. Regehr, C., Bogo, M., Donovan, K., Lim, A., & Regehr, G. (2012). Evaluating a Scale to Measure Student Competencies in Macro Social Work Practice. Journal of Social Service Research. https://doi.org/10.1080/01488376.2011.616756
- Ribuwati, E, H., & Tobari. (2019). The Principal Leadership In Building The Students' Character. International Journal of Scientific & Technology Research, 8, 1177–1183.
- Roy, D., Baker, W., & Hamilton, A. (2018). Quality teaching. In Teaching the Arts. https://doi.org/10.1017/cbo9781139924504.016
- Samani, M. (2018). Vocational Education in the Era of Industry 4.0: An Indonesia Case. Proceedings of the International Conference on Indonesian Technical Vocational Education and Association (APTEKINDO), January 2018, 4–7. https://doi.org/10.2991/aptekindo-18.2018.10
- 49. Skedsmo, G., & Huber, S. G. (2019). Measuring teaching quality: some key issues. In Educational Assessment, Evaluation and Accountability. https://doi.org/10.1007/s11092-019-09299-3
- Smith, J., & Rayment, J. (2009). Developing school strategy: Developing globally fit leaders. The International Journal of Management Education. https://doi.org/10.3794/ijme.73.223
- 51. Tas, Y., Subaşı, M., & Yerdelen, S. (2019). The role of motivation between perceived teacher support and student engagement in science class. Educational Studies. https://doi.org/10.1080/03055698.2018.1509778
- 52. Vagi, R., Pivovarova, M., & Barnard, W. (2019). Dynamics of preservice teacher quality. Teaching and Teacher Education. https://doi.org/10.1016/j.tate.2019.06.005
- Van Wyk, C., & Moeng, B. (2013). The Design And Implementation Of A Strategic Plan In Primary Schools. International Business & Economics Research Journal (IBER), 13, 137. https://doi.org/10.19030/iber.v13i1.8364
- Wagiran, W., Pardjono, P., Suyanto, W., Sofyan, H., Soenarto, S., & Yudantoko, A. (2019). Competencies of Future Vocational Teachers: Perspective of In-Service Teachers and Educational Experts. Jurnal Cakrawala Pendidikan, 38, 387–397. https://doi.org/10.21831/cp.v38i2.25393
- 55. Winther, E., & Achtenhagen, F. (2009). Measurement of vocational competencies A contribution to an international large-scale assessment on vocational education and training. Empirical Research in

Vocational Education and Training.

- Yacob, A., Kadir, A. Z. A., Zainudin, O., & Zurairah, A. (2012). Student Awareness Towards E-Learning In Education. Procedia - Social and Behavioral Sciences. https://doi.org/10.1016/j.sbspro.2012.11.310
- 57. Yanto, W. (2013). Strategy Of Increasing The Competence Of Graduates Of Vocational High School (SMK) Majoring In Business And Management Based Business And Industrialized. International Journal of Research & Method in Education, 3(6), 25–30.
- Zala-Mezö, E., Bormann, I., Strauss, N. C., & Müller-Kuhn, D. (2019). Distributed leadership practice in Swiss "eco-schools" and its influence on school improvement. Leadership and Policy in Schools. https://doi.org/10.1080/15700763.2019.1631855