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Examining the Global Competence and TPACK Development Model for Prospective Teachers in Accounting Economics

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Abstract: Examining the Global Competence and TPACK Development Model for Prospective Teachers in Accounting Economics. Objectives: This research examines the development model of global competency and technological, pedagogical, and content knowledge (TPACK) of prospective teachers in accounting economics. **Methods:** Design of this research using clausal associative design. The respondents of the study were 91 students of accounting education at Universitas Negeri Semarang. **Findings:** Analysis results using WarpPLS 6.0. shows that socioeconomic status did not affect technological, pedagogical, and content knowledge (TPACK) and global competence. In addition, there is a direct effect of student engagement and student perception of teaching methods on technological, pedagogical, and content knowledge (TPACK) and global competence. The following analysis showed that student engagement mediates the effect of socioeconomic status and student perception of teaching methods on technological, pedagogical, and content knowledge (TPACK) and global competence. **Conclusion:** Student perception about the lecturer teaching methods would increase global competence, and then increasing student engagement would ultimately be able to increase global competence as well.

Keywords: socioeconomic status, student engagement, perception of teaching methods, technological pedagogical content knowledge, global competence.

Abstrak: Mengkajia Model Pengembangan TPACK dan Kompetensi Global untuk Calon Guru Ekonomi Akuntansi. ***Tujuan:*** *Penelitian ini menguji model pengembangan kompetensi global dan technological, pedagogical, and content knowledge (TPACK) dari calon guru ekonomi akuntansi.* ***Metode:*** *Desain penelitian ini menggunakan desain asosiatif kausal. Responden penelitian ini berjumlah 91 mahasiswa pendidikan akuntansi di Universitas Negeri Semarang.* ***Temuan:*** *Hasil analisis menggunakan WarpPLS 6.0 menunjukkan bahwa status sosio ekonomi tidak mempengaruhi TPACK dan kompetensi global. Sebagai tambahan, terdapat pengaruh langsung keterlibatan mahasiswa dan persepsi mahasiswa mengenai metode pembelajaran terhadap TPACK dan kompetensi global. Analisis selanjutnya menunjukkan bahwa keterlibatan mahasiswa memediasi pengaruh status sosio ekonomi dan persepsi mahasiswa mengenai metode pembelajaran terhadap TPACK dan kompetensi global.* ***dan Kesimpulan:*** *Persepsi mahasiswa mengenai metode pengajaran dosen akan meningkatkan kompetensi global dan keterlibatan mahasiswa juga dapat meningkatkan kompetensi global.*

Kata kunci: *status sosio ekonomi, keterlibatan mahasiswa, persepsi metode pengajaran, TPACK, kompetensi global.*

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INTRODUCTION

Globalization influences every aspect of life. Globalization is driving the rise of foreign school branches established in the country. Several foreign campuses also begin to open branches in Indonesia. Popular example is such as London School in Jakarta. Such a phenomenon on the one hand brings the impact that we enjoy the education system with foreign standards in the country. However, if viewed from a more critical perspective, this phenomenon can be seen as an effort to dominate the foreign education system through expansion into the country so that professional competition in the world of education, namely teachers, is getting tougher too.

Increasing competition for jobs requires higher education institutions including the Teacher Training Institute (LPTK) to continue to improve the quality of graduates. Higher education is one of the educational institutions that have a large role in efforts to develop knowledge, skill and competitiveness. Not only the ability or competence in the academic field is needed by a prospective teacher to be able to compete in the competitive world of work. Teacher competencies consisting of professional, pedagogical, social and personality competencies absolutely must be mastered plus global competence. Global competence is a set of knowledge about world regions, cultures and global issues, and the skills and dispositions to engage in the global environment (Foltz & McIlvaine, 2008). 21st Century Teacher Competencies, professional teachers are no longer merely teachers who can teach well but teachers who can be learners and agents of school change, and are also able to establish and develop relationships to improve the quality of learning in their schools. Another aspect that is no less important is techno pedagogic skill, because prospective teachers will currently be dealing with students of digital natives. The study of global competence and TPACK is considered necessary for educators to measure the skill of prospective teachers to deal with cultural diversity and the ability to teach effectively with technology.

Technological Pedagogical Content Knowledge (TPACK) is a framework for integrating technology in teaching (Koehler et al., 2013). Koehler et al. (2013) further explained the three main knowledge studies in Technological Pedagogical Content Knowledge (TPACK) are technological knowledge, content knowledge, and pedagogical knowledge as well as interactions between each of the two knowledge and between all of those knowledge. Dee (2012) argued that students currently learn differently from previous generations. Thus educators and educational institutions must adapt to this generation, understand their characteristics, modern technology, and most importantly, how they use technology for learning.

There are several studies on Pedagogical Content Knowledge (PCK) including An et al. (2004), Anwar et al. (2016), Margiyono & Mampouw (2011), Turnuklu & Yesildere (2007). The results indicated that Pedagogical Content Knowledge (PCK) is important knowledge for the development of professional skills of teachers and prospective teachers. But the results of Koehler's research, Koehler et al., (2011) showed that most students have little knowledge or skills in the use of technology and lecturers feel complicated to integrate technology for teaching and learning.

Global competence and techno pedagogic of prospective teacher students do not escape the learning process carried out by lecturers with students in class. Accounting learning in the classroom still involves the role of the lecturer as a facilitator even though the current learning paradigm is student-centered. The factor which is suspected to influence global competence and techno pedagogic is students' perceptions about

the teaching methods of lecturers. Slameto (2010) defined perception as a process that involves the entry of messages or information into the human brain. Through human perception, it is constantly in contact with its environment. Students' perceptions about the teaching methods of lecturers are the processes of students receiving and responding to the teaching methods used by lecturers in the learning process in class to create an effective learning condition.

Lecturers as role models students must use a variety of learning methods, so students have attention on the lecture material delivered and do not experience boredom. Students have diverse perceptions of the teaching methods of lecturers. Lecturers who use various methods will be positively perceived by students and students will be inspired. Conversely, if students have negative perceptions about the teaching methods of lecturers, students will tend to pay less attention to the material taught by lecturers and it is difficult to understand the material taught by lecturers so that it will affect student competence.

The global competence of students is also influenced by socioeconomic status. According to Soekanto (2001) socioeconomic is a person's position in society related to other people about social environment, achievements, and rights and obligations. Harris & Hofer (2011) showed that one of the factors that influence TPACK's ability from the Technical and Vocational Training (TVET) instructor is socioeconomic status, in addition to organizational, cultural, and contextual factors.

Another factor that is thought to influence the formation of global competence in techno pedagogic is student engagement. Student engagement is placed as an intermediary / intervening variable between global competence and TPACK's ability and the factors that influence it. This refers to the theory of Input-Environment and Output (I-E-O). The global competence development model and TPACK are shown in that student outcomes are determined by input and environment. This theory explains that at the same time, input factors have a relationship that will affect the environment and affect outcomes. Astin also explained that the relationship between environment and outcome cannot be separated from input Kelly (1996) in Yanto et al. (2011).

METHODS

Participants

The population in this study was 982 students majoring in economic education who had taken their first year of study at the Faculty of Economics, Universitas Negeri Semarang. The sampling method in this study used proportional cluster random sampling. Based on sampling method, we obtained 91 respondents who participating in this study.

Research Design and Procedures

The research design used an associative clause design. Associative design is useful for analyzing the relationship between one or more variables. This research was a research that tried to develop a model for developing global competence and the TPACK ability of accounting prospective teachers. This approach was used to address the issues of global competence and the techno pedagogical skill of accounting prospective teachers who were influenced by various internal and external factors of Universitas Negeri Semarang students.

Instrument

The dependent variable of this research is global competence and TPACK. There are three independent variables i.e. socioeconomic status, student engagement, and lecturer teaching method. Descriptive statistics table is presented as follows.

Table 1. Descriptive statistics

Construct	Number of Items	Mean	Standard Deviation
Socioeconomic Status (X1)	9	24.28	4.86
Student Engagement (X2)	24	90.69	12.67
Lecturer Teaching Method (X3)	75	28.64	26.08
TPACK (Y1)	28	109.09	14.92
Global Competence (Y2)	21	79.3	10.99

This study also asses the validity and reliability of the model. Discriminant validity test can be seen from the results of the cross-loading value. The results of discriminant validity in this study can be seen from the value of the indicator correlation to the construct which was greater than the value of the correlation between the indicator with other constructs. While the reliability test was carried out to prove the accuracy, consistency, and accuracy of the instrument in measuring constructs. Construct reliability in this study was carried out by looking at composite reliability. An indicator was said to be reliable if it had a value >0.7. The following results of the calculation of composite reliability are presented in the following table:

Table 2. Calculation of composite reliability

Construct	***Composite Reliability***	***Cronbach's alpha***	**Reliability**
Socioeconomic Status (X1)	0.965	0.962	Reliable
Student Engagement (X2)	0.943	0.936	Reliable
Lecturer Teaching Method (X3)	0.797	0.715	Reliable
TPACK (Y1)	0.975	0.973	Reliable
Global Competence (Y2)	0.956	0.962	Reliable

Based on the Table 2, the results indicated that all variables met the composite reliability (coefficients >0.70) and all variables also met the internal consistency reliability (cronbach's alpha coefficients> 0.60) so that all variables met the composite reliability and internal consistency.

Data Analysis

This research used WarpPLS analysis to test the hypotheses. WarpPLS is used to identify and estimate the relationship between latent variables.

■ RESULT AND DISCUSSIONS

The evaluation of structural model table is presented as follows.

Based on the table 3, it can be stated that the model was good, with all the criteria fulfilled. The coefficient of determination adjusted for adjusted R2 Y1 was 0.528; Y2 was 0.491; and X2 was 0.190.

Table 3. Evaluation of structural models

Criteria	Value	Acceptance Limits	Conclusion
APC	<0.001	≤ 0,05	Model Fit
ARS	<0.001	≤ 0,05	Model Fit
AARS	<0.001	≤ 0,05	Model Fit
AVIF	1.102	Ideal if ≤ 3,3	Ideal
AFVIF	1.895	Ideal if ≤ 3,3	Ideal
Tenenhaus GoF	0.424	Big if ≥ 0,36	Big
SPR	0.750	Accepted if ≥ 0,7	Accepted
RSCR	0.981	Accepted if ≥ 0,9	Accepted
SSR	1.000	Accepted if ≥ 0,7	Accepted
NLBCDR	1.000	Accepted if ≥ 0,7	Accepted

Based on the table 4, it can be seen that from 12 hypotheses only 2 hypotheses were rejected, namely the effect of socioeconomic status on technological pedagogical content knowledge and the effect of socioeconomic status on global competence.

Table 4. Testing result

No	Hypothesis	Coefficient	P-value	A	Conclusion
1	X1 on Y1	0.039	0,348	0,05	H_1 rejected
2	X1 on Y2	0,086	0,190	0,05	H_2 rejected
3	X3 on Y1	0,172	0,038	0,05	H_3 accepted
4	X3 on Y2	0,178	0,033	0,05	H_4 accepted
5	X2 on Y1	0,655	<0,001	0,05	H_5 accepted
6	X2 on Y2	0,630	<0,001	0,05	H_6 accepted
7	X1 on X2	-0,227	0,009	0,05	H_7 accepted
8	X3 on X2	0,386	<0,001	0,05	H_8 accepted
9	X1 on Y1 through X2	-0,149	0,015	0,05	H_9 accepted
10	X1 on Y2 through X2	-0,143	0,019	0,05	H_{10} accepted
11	X3 on Y1 through X2	0,253	<0,001	0,05	H_{11} accepted
12	X3 on Y2 through X2	0,244	<0,001	0,05	H_{12} accepted

Effect of Socioeconomic Status on Technological Pedagogical Content Knowledge

Based on the Table 4, the direct effect showed that there was no socioeconomic effect on technological pedagogical content knowledge with a path coefficient of 0.039 and p 0.348. Due to p> 0.05, it was said to be insignificant, so H1 was rejected. This indicated that high or low socioeconomic status did not affect technological pedagogical content. The existence of socioeconomic status was not able to affect technological pedagogical content knowledge because the average socioeconomic status of

prospective teachers of economics in the department of economic education had the same strata and each prospective teacher got the same provision for readiness to become a teacher prepared by the department of economic education. The results of the study were not in line with research by Harris & Hofer, 2011) which stated that knowledge was affected by contextual factors, culture, socioeconomic status and organizational factors.

Effect of Socioeconomic Status on Global Competence

Based on the Table 4, the direct effect showed that there was no effect of socioeconomic status on global competence with a path coefficient of 0.086 and p 0.190. Due to p> 0.05, it was said to be insignificant, so H2 was rejected. These results indicated that high or low socioeconomic status did not affect global competence. This argument can explain that socioeconomic status cannot affect the global competence of a prospective teacher; it was because global competence can be formed anywhere and easily without regard to one's socioeconomic status. The results of this study did not support research conducted by Harris & Hofer (2011) which showed that one of the factors affecting TPACK's ability from the Technical and Vocational Training (TVET) instructor was socioeconomic status, in addition to organizational, cultural, and contextual factors.

Effect of Student Perceptions about the Lecturer Teaching Method on Technological Pedagogical Content Knowledge

Based on the Table 4, the direct effect showed that there was an effect of student perceptions about the lecturer teaching methods on Technological Pedagogical Content Knowledge with path coefficients of 0.172 and p 0.038. Due to p <0.05, it was said to be significant, so H3 was accepted. The results of this study were in line with research conducted by Koehler et al. (2011). The results of research by Juhdi et al. (2010) revealed that teachers would have the ability to manage class (class management) if they often used technology.

Effect of Student Perceptions about the Lecturer Teaching Method on Global Competence

Based on the Table 4, the direct effect showed that there was an effect of student perceptions of lecturer teaching methods on global competence with path coefficients 0.178 and p 0.033. Due to p <0.05, it was said to be significant, so H4 was accepted. Student perceptions about the lecturer teaching method can affect global competence, because perception was characterized by a process that was preceded by sensing about a message / information received by someone, where the sending of the message gave rise to positive or negative stimuli that can affected individual behavior. This was related to the ability of students to receive incoming information, giving rise to different perceptions regarding the teaching methods of lecturers, if students had a positive response to the teaching methods of lecturers, students would be able to improve global competence.

The results of the study were in line with research conducted by Guthrie, et al. (2009) which explained that teaching methods must focus on the promotion of work and life to actualize the relationship between theory and practice that can enhance global competence.

Effect of Student Engagement on Technological Pedagogical Content Knowledge

Based on the Table 4, the direct effect showed that there was an effect of student

engagement on Technological Pedagogical Content Knowledge with path coefficients 0.655 and p <0.001. Due to p <0.05, it was said to be significant, so H5 was accepted. The path coefficient marked positive (0.655) indicated that the better the student engagement was, the technological pedagogical content knowledge would increase. The student engagement affected the ability to know teacher / lecturer knowledge about technology in effective teaching. The results of this study were in line with research conducted by Chua & Jamil (2012) which stated that there was an effect between the teaching experience of Technical and Vocational Education and Training (TVET) instructors on the development of TPACK.

Effect of Student Engagement on Global Competence

Based on the Table 4, it was known that the coefficient value of the direct effect of the student engagement on global competence with a P-value 0.001 <0.05 can be said to be significant, so that H6 was accepted. So that Student Engagement positively affected global competence. The better the student engagement was, the higher global competence was. Attitudes and values must be shown by those who are ready for plurality forms, which have a positive impact on national integrity in general and community harmony in particular, and cannot trigger the expected conflicts.

Effect of Socioeconomic Status on Student Engagement

Based on the table 4, it was known that the coefficient value of the direct effect of the socioeconomic status on student engagement with a P-value of 0.009 <0.05 can be said to be significant, so that H7 was accepted. So that socioeconomic status had a positive effect on student engagement. The better the socioeconomic status was, the higher the value of student engagement students majoring in Economic Education of Universitas Negeri Semarang. The socioeconomic status in the study was determined by the parents' occupation, the last education of the parents, and the income of the parents per month. Devito (2016) revealed that parental support was a factor that can influence the level of student engagement. The manifestation of the involvement of students majoring in economic education can be actualized through participating in student activities on and off campus, such as taking part in scientific writing competitions, compiling research, or organizing. To launch this activity, financial support from parents was needed.

Effect of student Perception of lecturer teaching method on Student Engagement

Based on the table 4, it was known that the coefficient value of the direct effect of student perception of the lecturer teaching method on student engagement with a P-value of 0.001 <0.05 can be said to be significant so that H8 was accepted. Student' perception about the lecturer teaching method had a positive effect on student engagement. The better the perceptions given by students about the teaching methods used by lecturers in the classroom, the better the value of student engagement. This was in line with the results of the study put forward by Bock & Erickson (2015) that in achieving student engagement, a teacher must be able to support student autonomy and provide a clear structure of learning activities. Furthermore, the implementation of learning in class can take place actively and collaboratively if the lecturer uses the right method. As a result of research that reveals that the integration of active learning and internet-based learning is able to increase the activeness and creativity of student learning in Madrasah Ibtidaiyah of teacher education courses (Effendi, 2013).

Effect of Socioeconomic Status on Technological Pedagogical Content Knowledge through Student Engagement

Based on the Table 4, it was known that the path coefficient of the indirect effect of socioeconomic status on technological pedagogical content knowledge through student engagement was -0.149 with a p value of 0.015. Due to the value of $p < 0.05$, it can be said to be significant, so that H9 was accepted. That is, student engagement was a mediating variable because it was able to mediate the relationship between socioeconomic status and technological pedagogical content knowledge and was included in the category of full mediation because direct testing with insignificant results and indirect testing with significant results can be said to be the variable of full mediation. The results of this study supported research conducted by Harris & Hofer (2011) which explained that knowledge was influenced by contextual factors, culture, socioeconomic status, and organizational factors.

Effect of Socioeconomic Status on Global competence through Student Engagement

Based on the Table 4, it was known that the path coefficient of the indirect effect of socioeconomic status on global competence through student engagement was -0.143 with a p value of 0.019. Due to the value of $p < 0.05$, it can be said to be significant, so that H10 was accepted. Student engagement acted as an intermediary between the relationship of socioeconomic status on global competence, where before the existence of student engagement, socioeconomic status cannot affect global competence but after the existence of student engagement, it can affect socioeconomic status on global competence. That is, student engagement was a mediating variable because it was able to mediate the relationship between socioeconomic status on global competence and was included in the category of full mediation because direct testing with insignificant results and indirect testing with significant results can be said to be the variable of full mediation.

Effect of Student Perception about lecturer Teaching Method on Technological Pedagogical Content Knowledge through Student Engagement

Based on the Table 4, it was known that the path coefficient of the indirect effect of student perception of the lecturer teaching method on technological pedagogical content knowledge through student engagement was 0.253 with a p value <0.001. Due to the value of $p < 0.05$, it can be said to be significant, so that H11 was accepted. That is, student engagement was a mediating variable because it can mediate the relationship between socioeconomic status and technological pedagogical content knowledge and was included in the category of partial mediation because direct testing with significant results and indirect testing with significant results can be said to be a partial mediating variable. Lecturers must support the autonomy needs of students and provide a clear structure of learning activities.

Effect of Student Perception about lecturer Teaching Method on Global Competence through Student Engagement

Based on the Table 4, it was known that the path coefficient of the indirect effect of student perception of lecturer teaching method on global competence through student engagement was 0.244 with a p value <0.001. Due to the value of $p < 0.05$, it can be said to be significant, so H12 was accepted. That is, student engagement was a mediating variable because it was able to mediate the relationship between socioeconomic status and global competence and was included in the category of partial mediation because direct testing with significant results and indirect testing with significant results can be said to be partial mediation variables. The better the student

perception about the lecturer teaching methods, it would increase global competence, and then increasing student engagement would ultimately be able to increase global competence as well.

■ CONCLUSIONS

Based on the results of this study regarding the development model of Techno Pedagogical Content Knowledge and Global Competence of Prospective Economics Teachers, it can be concluded that there is a direct influence of student engagement, students' perceptions of lecturer teaching methods on technological pedagogical content knowledge and there is a direct influence on student engagement status, student perceptions of lecturer teaching methods on global competence. In addition, there is an indirect effect of socioeconomic status, perceptions of students on technological pedagogical content knowledge through student engagement and there is an influence of socioeconomic status, perceptions of students on global competence through student engagement.

Based on the results of the analysis and discussion of Development Model of the Techno Pedagogical Content Knowledge and the Global Competence of Prospective Teachers of Economics and Accounting, the researcher can provide suggestions for perfecting research on this theme, then further research can add to the personality factors of the respondents, for example internal and external motivation. This study only focused on one major, so for further research can compare from different majors or educational backgrounds. Future studies can increase the level of better generalizations.

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