Determinants of work readiness as a teacher for higher education students in industry revolution of 4.0

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Abstract

Purpose – The Industrial Revolution 4.0 impacted education, notably during the COVID-19 outbreak. Teachers should be familiar with the dynamic teaching and learning of classroom and virtual classes. They should provide various and exciting media. It influences the work readiness of a teacher for higher education students. Further, nowadays, interest in becoming a teacher is declining. They prefer having another profession to being a teacher. This study analyzes the determinants of work readiness as a teacher for higher education students.

Design/methodology/approach – This research uses a quantitative research model: a survey method with an influence analysis approach through structural equation modeling analysis to determine the influence of digital literacy, self-efficacy and perceptions of the teaching profession on readiness to become a teacher. The population in this study was the UNNES Economics Education students’ class of the year 2018, totaling 350 students with a total sample of 187. The data collection technique used in this research is a questionnaire with score criteria based on a Likert scale.

Findings – Digital literacy and teacher professional perception play an essential role in work readiness for higher education students as a teacher. Meanwhile, self-efficacy has a positive but insignificant influence on work readiness as a teacher. One of the things that make self-efficacy have a less significant impact is the need for vicarious experience indicators in shaping student self-efficacy.

Practical implications – Teaching is a noble profession. Research on work readiness as a teacher is still limited. Nowadays, only a few students are interested in being a teacher because they need more enthusiasm. The findings of this research can be an alternative solution to managerial staff at higher education to equip the students with digitalization technology, positive teacher perception and increase the students’ self-efficacy.

Originality/value – The study on work readiness as a teacher for higher-education students has yet to be explored. Being a teacher is an art that needs skills and competencies because teachers educate humans that have dynamic critical thinking, ideas and behaviors. This study investigates the determinants of work readiness as a teacher for higher education students in the digitalization technology era.

Keywords Teacher, Competency, Digitalization, Work readiness, Higher education student

Paper type Research paper

Introduction

A teacher is a professional educator with the primary task of educating, teaching, guiding, training, assessing, and evaluating students. Experienced teacher’s involvement will create a great nation. Because of having many tasks, teachers usually have salaries and rewards for their prosperity.

Since the Industrial Revolution 4.0, many professions have demanded high work efficiency involving humans and technology. It also impacts education. Education nowadays needs technology so that teaching and learning can be done anytime and anywhere. Dynamic teaching and learning become crucial to facilitate critical students (Butt et al., 2020). The new paradigm in education demands professional teachers to educate the students in a classroom or virtual class with the ability to implement various media. As a developing country,
Indonesia has set a rule for teaching professions. Based on Indonesia Law number 14, year 2005, a teacher should have pedagogical, social, personal, and professional competence. During the COVID-19 outbreak and even until now, the competence to implement technology in education has been a trending issue. Then, it becomes a primary need in dynamic teaching and learning to welcome the next phase of the industrial revolution. However, the competence of digital technology implementation still needs to be prioritized in Indonesian law. According to (Mohamed et al., 2017), a teacher should improve his competence, which can be done since he has been at college as a teacher candidate so they will have work readiness.

Further, much research on work readiness has been explored. Rogers et al. (2023) studied work readiness for graduate nurses; Wong et al. (2023) studied pharmacy graduates; Barbosa et al. (2022) investigated work readiness for accountants (Boat et al., 2021); have explored work readiness for youth. Phan et al. (2020) studied accounting graduate work readiness (Blayone and VanOostveen, 2021) and (Prikshat et al., 2019) also discuss work readiness, as well as Prikshat et al. (2019). However, research has yet to investigate work readiness as a teacher for higher education students.

Being a teacher takes work, as many competencies are demanded. Many gaps related to the factors that impact work readiness have been explored. First, digital or technology competency is optional in teaching and learning, so in the curriculum, a teacher can delete it (Instefjord and Munthe, 2016). On the contrary, after the COVID-19 outbreak, scholars acknowledge that technology or digital literacy plays a vital role in teaching and learning. Work readiness as a teacher and digital literacy has a positive and significant relationship (Ongoren, 2021) and (Nur’Aini and dan Nikmah, 2020).

Then, compared to other South East Asian countries such as Singapore, Thailand, and Filipina Malaysia, Indonesia still needs to provide a maximum salary (Ahdiat, 2023). Many Indonesian youth respect the teacher profession but are interested in something other than being a teacher as their future career. They need more confidence to teach (Widyaningrum and Suratno, 2023). Dicke et al., supported by Dogutas (2016) and Apriani (2018), found that teacher candidates will be ready to teach if their self-efficacy is high. However, Komariyah (2016), who studied the influence of self-efficacy on readiness to become a teacher, said there was no significant influence between self-efficacy and work readiness to become a teacher.

Puspitasari and Asrori (2019) and Kusumajati (2018) agree that the perception of the teaching profession is necessary for higher education students who have an interest in being a teacher. However, Wahyuni (2017) proposed that the perception of the teaching profession does not impact work readiness as a teacher.

The research is centered on exploring digital literacy, self-efficacy, and perceptions of the teaching profession, aiming to uncover and address any existing gaps in our understanding of these areas. Through rigorous empirical analysis, the study seeks to shed light on how these factors interrelate and influence individuals’ readiness to pursue a career in teaching. Ultimately, the findings of this research have the potential to inform educational policies and practices aimed at enhancing teacher preparedness.

**Literature review**

**Work readiness**

Slameto (2015, p. 113) stated that readiness is the overall condition of a person that makes him ready to respond/answer in a certain way to a particular situation. This condition includes (1) physical, mental, and emotional conditions; (2) needs or goal motives; and (3) knowledge and understanding that have been learned. Then, Murtiningsih and Susilaningsih (2014) stated that readiness to become a teacher can be measured through (1) Cognitive Aspects, (2) Affective Aspects, and (3) Psychomotor aspects.
Before a teacher carries out teaching practice, physically, he should be truly convincing, or his appearance should show the authority of a teacher. Regarding physical readiness, several things should be considered, including a genuinely healthy body condition (physical fitness), mental readiness, neatness and harmony that is always clearly visible, and an outward attitude that is natural and not artificial (Slameto, 2015). Murtiningsih and Susilaningsih (2014) explain that Cognitive Aspect (Knowledge), includes the teacher’s ability to master learning material broadly and in-depth, education knowledge that supports the teaching and learning activities. This aspect is closely related to the basic competence of teachers, namely professional competence. Affective (Social) Aspects include work attitudes, interests, having strong personality abilities, noble character, wisdom, and authority, and being role models for students, including the teacher’s ability to communicate and interact effectively and efficiently with other people, especially learners. This aspect is closely related to the basic competence of teachers, namely personality competence and social competence. Psychomotor Aspects (Skills) include students’ skills as prospective teachers in carrying out their duties and obligations in managing learning programs, which can collaborate on students’ abilities, plan, implement, and evaluate learning programs. This aspect is closely related to the basic competence of teachers, namely pedagogical competence.

**Digital literacy**
Digital literacy combines various forms of literacy, including computers, media, information, and communication. Yusuf et al. (2019, p. 4). Therefore, digital literacy is often called the ability to understand and use the Internet, information technology, computers, Information Communication and Technology, or e-literacy. Digital literacy also means using information and communication technology (ICT) to find, evaluate, utilize, create, and communicate content or information with cognitive and technical skills (Kurnia et al., 2019). A teacher needs Digital literacy, especially in the world of education. Mastering digital literacy will encourage educators to provide and convey knowledge to students in a more varied and communicative manner.

**Perception of teacher profession**
Perception is a view, interpretation, or understanding that a person has regarding an object or event with the help of the human senses. Perception can be interpreted as a process of interpreting stimuli received by the five senses into an understanding (Zhafira et al., 2020). Perception also means an individual’s process of organizing and analyzing sensory impressions to provide an experience of their environment (Robbins and Judge, 2015). Perception can also be interpreted as using existing knowledge to obtain and interpret stimuli received by the human sensory system (Desmita, 2009, p. 117).

The teaching profession is a particular field of work that is carried out based on certain principles and qualifications (Sutarsih, 2009). Sya‘Bani (2018, p. 6) explains that the profession is a legal-formal service with its code of ethics to become a standard reference in implementing its program, not only as a profit-oriented business field or a career.

Teachers are an integral part of educational organizations in schools (Daryanto dan Tarsial, 2015, p. 2), and teachers are professionals/positions or jobs that demand specific competencies and skills. Uzer Usman (2009, p. 6)

The perception of the teaching profession is an understanding of the knowledge and skills needed for teaching, where a teacher works according to the curriculum and should also know how to make decisions regarding the methods that can be used to achieve the goals set (Taub, 2015). Student perception of the teaching profession is a process of using knowledge and feelings within the individual to describe an object in the environment using sensory organs.
related to the teaching profession (Aini, 2018). Perception of the teaching profession can also mean interpreting stimuli in the form of all information related to the teaching profession.

**Self-efficacy**

Alwisol (2009, p. 287) defines self-efficacy as a perception of how well one can function in a particular situation. Self-efficacy is related to the belief that one can carry out the expected actions (Irwansyah, 2013) states that self-efficacy theory is based on Bandura’s social-cognitive theory, which postulates that a person’s achievement or performance depends on the interaction between behavior, personal factors, and a person’s environmental conditions. He also suggests that self-efficacy consists of the word “self,” defined as an element of personality structure, and “efficacy,” which means self-assessment, whether you can carry out good or bad actions, right or wrong, can or unable to do something as required. Next (Ghufron, 2017, p. 73), viewed self-efficacy as one of the aspects of knowledge about oneself or self-knowledge that is most influential in everyday human life. It is because self-efficacy influences individuals in determining their actions to achieve a goal, including estimates of the various events they face. Finally, Feist et al. (2017, p. 157) also contributed to defining self-efficacy. He proposes that self-efficacy is a person’s belief in their ability to control the person’s functioning and events in their environment. Self-efficacy is related to knowledge about one’s abilities. In contrast, efficacy is considered to be a belief regarding the ability to recognize one’s potential, which will influence the individual in determining an action to be taken. Self-efficacy is an essential aspect of a person’s behavior regarding how confident a person is in acting to carry out tasks or demands.

**Methodology**

This research uses a quantitative research model: a survey method with an influence analysis approach through Structural Equation Modeling (SEM) analysis to determine the influence of digital literacy, self-efficacy, and perceptions of the teaching profession on readiness to become a teacher. The population in this study was the UNNES Economics Education students class of the year 2018, totaling 350 students. The sample for this research was taken randomly, and the number of pieces was calculated using the Slovin formula so that the number of samples taken was 187 UNNES Economics Education students in the year of 2018 batch. The number of respondents who will be taken for each concentration is in Table 1.

The data collection technique used in this research is a questionnaire with score criteria based on a Likert scale, which is filled in directly by respondents as a Google form. Data from questionnaires and observations are input into Ms. Excel to be tabulated, coded, and grouped according to variables and indicators, then saved in CSV file format. The data is exported into the SmartPLS version 3 program to be analyzed using the Partial Least Square Structural Equation Modeling (PLS-SEM) technique to maximize the value R-Square and minimize residuals or prediction errors (Sholihin and Ratmono, 2020, p. 7).

The construct model specifications in this research are presented in Table 2 below.

<table>
<thead>
<tr>
<th>No.</th>
<th>Study program</th>
<th>Number of students</th>
<th>Number of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cooperative Education</td>
<td>109</td>
<td>58</td>
</tr>
<tr>
<td>2</td>
<td>Accounting Education</td>
<td>120</td>
<td>64</td>
</tr>
<tr>
<td>3</td>
<td>Office Administration Education</td>
<td>121</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>350</td>
<td>187</td>
</tr>
</tbody>
</table>

**Table 1.**

The number of Respondents

Source(s): Primary Data of Faculty of Economics and Business 2022 and authors’ work
Evaluation of the model construct consists of analysis of the outer and inner models. Exterior model evaluation is carried out on each construct or measurement model separately by evaluating the convergent validity, discriminant validity, and internal consistency reliability (Composite reliability and Cronbach alpha) of the measurement model. Meanwhile, in assessing the inner model, three things need to be considered: the value and sign (direction) of the relationship on the path coefficient value, the significance of the parameters being estimated, and the coefficient of determination ($R^2$) and effect size. If constructs are not valid or reliable in testing the outer model, the model can be improved (respecified) by eliminating the invalid constructs.

**Results**

Analysis of the influence of Digital Literacy (X1), Self-Efficacy (X2), and Teacher Professional Perception (X3) on Work readiness as a teacher (Y1) using PLS-SEM shows the results in Figure 1 below. Measuring the outer model using Partial Least Square (PLS) requires three criteria: Convergent Validity, Discriminant Validity, and Composite Reliability. The results of the Convergent Validity analysis show that each indicator in the variables Digital Literacy (X1), Self-Efficacy (X2), Perception of the Teacher Profession (X3), and Work readiness as a teacher (Y1) is declared valid because the outer loading value of each indicator has a value >0.5. In the Digital Literacy variable (X1), the Analysis and Evaluation (X1.2) and Create (X1.3) indicators are the most vital indicators in forming Digital Literacy. It means that students perceive that, as prospective teachers, digital literacy can be improved or strengthened with analysis and evaluation skills and creating a product. Meanwhile, regarding the Self-Efficacy variable (X2), most students perceive that the Emotional State indicator (X2.4) is the most robust reflection of a prospective teacher’s self-efficacy. The Teacher Obligations indicator (X3.3) is the highest in forming the Teacher Profession Perception Variable (X3) with a loading factor of 0.907. In the variable Work readiness as a teacher (Y1), two factors contribute most strongly, namely the Affective Aspect (Y1.3) and Psychomotoric aspect (Y1.4) indicators with factor loadings >0.9.

<table>
<thead>
<tr>
<th>Latent variable</th>
<th>Indicators (Observed Variables)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exogen Laten Variable (Independent)</td>
<td>Digital Literacy (X1) Access (X1.1)  Analysis dan Evaluation (X1.2)  Create (X1.3)  Reflection (X1.4)</td>
</tr>
<tr>
<td>Sel- Efficacy (X2)</td>
<td>Performance Experience (X2.1)  Vicarious Experience (X2.2)  Social Persuasion (X2.3)  Emotional Condition (X2.4)</td>
</tr>
<tr>
<td>Perception of Teacher Profession (X3)</td>
<td>Teacher qualifications, competencies, and certification (X3.1)  Teacher Rights (X3.2)  Teacher’s obligations (X3.3)  Teacher coaching and development (X3.4)</td>
</tr>
<tr>
<td>Endogen Laten Variable (Dependent)</td>
<td>Work Readiness as a Teacher (Y1) Physical condition (Y1.1)  Kognitif aspect (Y1.2)  Affective aspect (Y1.3)  Psycomotoric aspect (Y1.4)</td>
</tr>
</tbody>
</table>

**Source(s):** Authors’ work

### Table 2. Model specification
Apart from that, the AVE (Average Variance Extracted) values for variables X1 (0.801) and X2 (0.715). Meanwhile, the output discriminant validity value shows that the cross-loading value of each indicator on each variable is higher than the cross-loading value of the indicators on the other variables, which indicates that the indicator meets the Discriminant Validity criteria.

Furthermore, construct reliability testing aims to assess the ability of a research model construct to produce consistent results. Values from composite reliability and Cronbach alpha are used to test construct reliability. The results of construct reliability testing are presented in Table 3 below.

The construct for each variable shows a composite reliability value above ≥0.6 and a Cronbach alpha variable value ≥0.7 (Table 3). It means that the research construct that has been formed can measure a value consistently in the same population. Next, the inner model analysis consists of testing the hypothesis (significance) of the R square value and the F square value obtained using the Bootstrapping method. The results obtained from the initial model and the modified model are compared and presented in Table 4 and Table 5 below.

Based on Table 4 and Table 5, it can be seen that Digital Literacy (β = 0.334) and Teacher Professional Perception (β = 0.437) have a positive and significant influence on Work readiness as a teacher. These results are also supported by the F square value, which is categorized as medium. It means that a student’s readiness for a career as a teacher can be developed and improved by increasing the student’s knowledge and skills in utilizing digital media (such as Internet networks, smartphones, and computers) for continuous learning.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cronbach’s alpha</th>
<th>Composite reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1</td>
<td>0.917</td>
<td>0.941</td>
</tr>
<tr>
<td>X2</td>
<td>0.861</td>
<td>0.908</td>
</tr>
<tr>
<td>X3</td>
<td>0.905</td>
<td>0.934</td>
</tr>
<tr>
<td>Y1</td>
<td>0.918</td>
<td>0.943</td>
</tr>
</tbody>
</table>

Table 3. Results of construct reliability analysis

Source(s): Authors’ work
(digital literacy). The perception of the teaching profession also influences a student’s readiness for a career as a teacher. If a student has a good perception and sufficient knowledge of the teaching profession, then the student will be more ready to become a professional teacher.

Meanwhile, Self-Efficacy ($\beta = 0.149$) has a positive but insignificant influence on Work readiness as a teacher, even though the effect size ($F$ square) given is categorized as weak. One of the things that makes self-efficacy have a less significant influence on Work readiness as a teacher is the lack of vicarious experience indicators in shaping student self-efficacy. It means that UNNES economics education students still do not have an optimal experience in observing and learning various attitudes, skills, and successful behaviors of a teacher to apply to themselves so the self-efficacy of each student causes them to be less prepared when it comes to a career as a teacher.

**Discussion**

Students’ readiness to become teachers is an important issue. Dynamic teachers will always be needed, especially to face the Industrial Revolution 4.0, which cannot be separated from technology and digitalization. This situation forces prospective teachers to be able to master digitalization technology in the field of education, so it can be said that digital literacy is something that supports readiness to become a teacher. Nowadays, learning can be done anywhere and at any time because teachers with digital knowledge will always be ready to educate their children with innovative learning both in the classroom and virtual classes. The results of this study support Nurjanah et al. (2017), who explain that literacy has found a new, more complex meaning, and literacy means a person’s ability to understand information as it is presented. In this research, digital literacy is measured by access, analysis, evaluation, creation, and reflection indicators. Integrating technology and digital literacy is the main thing for prospective teachers; this indicates that digital literacy influences readiness to become a teacher in the era of dynamic teaching and learning. Another factor that supports readiness to become a teacher is the perception or view of the teaching profession because it will impact behavior. A teaching student with good teaching knowledge will also have a good perception of the teaching profession so that when he completes his teaching and education studies, he will be ready to become a teacher. Finally, even though Self-Efficacy has a positive but insignificant influence on Work readiness as a teacher, but self-efficacy is needed to support readiness to become a teacher. This is because self-efficacy is an individual’s power to believe in their ability to succeed in specific situations.

**Table 4.** Hypothesis test

<table>
<thead>
<tr>
<th>Path</th>
<th>Coefficient</th>
<th>St. Dev</th>
<th>$T$ statistics</th>
<th>$p$ values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 $\rightarrow$ Y1</td>
<td>0.334</td>
<td>0.106</td>
<td>2.968</td>
<td>0.003</td>
<td>Significant</td>
</tr>
<tr>
<td>X2 $\rightarrow$ Y1</td>
<td>0.149</td>
<td>0.088</td>
<td>1.812</td>
<td>0.071</td>
<td>Not Significant</td>
</tr>
<tr>
<td>X3 $\rightarrow$ Y1</td>
<td>0.437</td>
<td>0.068</td>
<td>6.562</td>
<td>0.000</td>
<td>Significant</td>
</tr>
</tbody>
</table>

**Source(s):** Authors’ work

**Table 5.** $R$ square and $F$ square

<table>
<thead>
<tr>
<th>Path</th>
<th>$F$ Square</th>
<th>$R$ Square</th>
<th>Effect Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1 $\rightarrow$ Y1</td>
<td>0.174</td>
<td>0.609</td>
<td>Moderate</td>
</tr>
<tr>
<td>X2 $\rightarrow$ Y1</td>
<td>0.033</td>
<td>Weak</td>
<td></td>
</tr>
<tr>
<td>X3 $\rightarrow$ Y1</td>
<td>0.273</td>
<td>Moderate</td>
<td></td>
</tr>
</tbody>
</table>

**Source(s):** Authors’ work
assessments of whether he can become a teacher. It is in line with Arghode et al. (2020) who stated that self-efficacy influences the career selection process and the subsequent process in switching careers.

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Further reading


