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# Teachers' perceptions of their use of SPADA Brightspace: A professional education for in-service teacher context

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**Abstract.** The Directorate General of Learning and Student Affairs developed a program named professional education for in-service teachers. This program applies a hybrid learning model. The adoption of the hybrid learning model is considered appropriate in the industrial revolution 4.0 era. The teacher professional development program is no longer just a face-to-face course but also can be held in the online form. The online course has been performed using SPADA Brightspace, an e-learning system. This study aims to analyze teachers' perceptions of using the SPADA Brightspace for online learning. A questionnaire survey technique was used for collecting data. The study results showed that the teachers have positive acceptance towards SPADA Brightspace. The teachers perceived the usefulness of SPADA Brightspace to support their online learning process in the in-service teacher professional development program (PPG DALJAB). The use of SPADA Brightspace increases the productivity of teachers because they can manage their time and control their own learning pace. The teachers are also easier to do knowledge sharing by active participation in online discussion forums.

## 1. Introduction

Addressing the challenges of the technological disruption era, the Indonesian government through the Ministry of Research, Technology and Higher Education launched a program named online learning system (SPADA) Indonesia [1]. One of the implementation programs is teacher competency improvement through PPG DALJAB with a hybrid learning model [2]. The implementation of the hybrid learning model is expected to give learning flexibility to PPG DALJAB's participants so that they become professional teachers with good character and national values that can contribute to the development of the industrial era 4.0 which will, in turn, can produce good quality students.

Evaluation of the PPG DALJAB program has been conducted on August 15-16, 2018 through a coordinating meeting on the evaluation of the DALJAB PPG hybrid learning program by inviting university leaders and PPG coordinators from 57 teachers higher education institutions (LPTK) organizing the PPG DALJAB program [2]. The program evaluates the online learning program, process, and content of PPG DALJAB, assessment systems, learning management systems (LMS) used, bandwidth consistency, as well as the need for improvement of modules and teaching materials and the need to make module/teaching material vocational studies, Natural Sciences and Mathematics in order to increase the number of vocational teachers and improve the PISA and TIMSS scores.

Particularly, the investigation of teachers' behavior and intention to use SPADA Brightspace during joining PPG DALJAB has not been done much. A limited number of studies have reported the use of SPADA Brightspace as what has been done by Pamungkas, Novalitasari, Setiani, and Yuhana [3]. They investigated the perception, interaction, and performance of teachers who participated in the PPG DALJAB. The result of their study revealed that 76.25% of teachers have a good perception of SPADA



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Brightspace. This study, therefore, aims to further investigate teachers' behavioral intention to use SPADA Brightspace in their engagement in an online learning environment.

## 2. Theoretical Underpinning

This study used some constructs from the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) to investigate the factors influencing teachers' behavioral intention to use SPADA Brightspace. UTAUT2 is an extension of the UTAUT model that firstly introduced by Venkatesh, Morris, Davis and Davis [4]. In the UTAUT2 model, there are seven independent variables that are considered to affect the user's behavioral intention to use the technology. The independent variables including performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value and habit. Some researchers have been using some or all constructs of UTAUT2 to investigate the acceptance of e-prescribing [5], e-government services [6], mobile banking adoption [7-8], mobile commerce [9-10], and mobile payment with near field communication in hotels [11]. Some studies on the use of UTAUT2 in educational contexts also have been carried out [12-14]. In the context of education, Ain et al. [12] argue that the price value construct is considered not relevant when the use of educational applications is free of charge. They introduced another construct called learning value instead. In this study, the social influence construct is not used because the use of SPADA Brightspace is mandatory in the PPG DALJAB. Thus, the constructs used in this study comprised performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, learning value and habit as summarized in Table 1.

**Table 1.** Constructs used in the current study

Construct	Description
Performance Expectancy (PE)	The beliefs of individuals about technology usefulness to do different activities [15].
Effort Expectancy (EE)	The beliefs of individuals about the ease or effort related to the use of technology [15].
Facilitating Conditions (FC)	The availability of enough resources to support individuals to use technology [4].
Hedonic Motivation (HM)	The pleasure perceived by individuals in using technology [12].
Learning Value (LV)	The relationship of learning, time and effort that has an impact on the intention to use technology [12].
Habit (HB)	Individuals' habitual using technology [12].

## 3. The Context of the Study and Method

The study presented in this paper is part of a larger study that examined user's behavior in the use of SPADA Brightspace for PPG DALJAB at Universitas Negeri Semarang (UNNES). Data was gathered through a questionnaire survey using a five-point Likert scale from strongly disagree to strongly agree (scored from 1 to 5). The survey was administered to respondents in an online form using Google Form. A total of 718 respondents get involved in the current study. Respondents were in-service teachers who are joining PPG DALJAB at UNNES. Table 2 shows the demographic information of the respondents. Most of the respondents (N = 452, 63%) were female teachers and about 96.1% of the teachers had a bachelor's degree. In terms of age, most of the teachers were between 30 and 39 years old (61%). With respect to the year of teaching experiences, about 64.5% has 5-10 years' experience of teaching.

**Table 2.** The demographic characteristics of the sample (N = 718)

	Frequency	Percentage
<i>Gender</i>		
Male	266	37.0
Female	452	63.0
<i>Last Education</i>		
Bachelor's degree	690	96.1
Master's degree	28	3.9
<i>Age</i>		
20-29	177	24.7
30-39	438	61.0
40-49	82	11.4
Above 50	21	2.9
<i>Year of teaching experience</i>		
Less than 5 years	74	10.3
5-10 years	463	64.5
11-20 years	173	24.1
More than 20 years	8	1.1

#### 4. Results and Discussion

Table 3 presents the items used to examine the teachers' perceptions of using SPADA Brightspace. The result shows that 93.28% of PPG DALJAB's teachers perceived that SPADA Brightspace is useful. Most of the teachers also felt that SPADA Brightspace helps them to complete their tasks more quickly and increase their productivity. Regarding the easiness of use of SPADA Brightspace, many teachers (92.34%) perceived that SPADA Brightspace is easy to use. They can learn how to use the system swiftly. With respect to facilitating conditions, the IT support team who assists the teachers when they find difficulties in operating the SPADA Brightspace features were considered helpful for the teachers. Of the 76.46% of the teachers agreed and strongly agreed with it.

Regarding the learning value, most of the teachers were agreed and strongly agreed that learning via SPADA Brightspace allows them to quickly and easily share their knowledge with their peers by active participating in the chat sessions and online discussion forums (82.46%). The teachers also have the flexibility to learn with their own pace of learning by tailoring their learning style (76.60%), which will, in turns increase their learning performances (88.30%).

SPADA Brightspace gave PPG DALJAB's teachers such pleasure. The teachers felt fun using SPADA Brightspace (87.46%). They also enjoy using it (85.79%) and keep them entertained (84.82%). The positive acceptance of SPADA Brightspace as a supporting tool for PPG DALJAB's learning encourage the teachers to use it frequently and became a habit for them (61.98%).

**Table 3.** Items associated with constructs used in the current study

Code	Item	SDA	DA	N	A	SA	Mean	SD
PE1	I find SPADA Brightspace useful for PPG DALJAB	0.42	0.42	5.85	31.34	61.98	4.54	0.66
PE2	Using SPADA Brightspace enables me to accomplish class activities more quickly	0.97	1.11	12.26	43.59	42.06	4.25	0.78
PE3	Using SPADA Brightspace increases my productivity	0.84	1.25	12.40	47.21	38.30	4.21	0.77
EE1	SPADA Brightspace is easy to use	0.28	0.84	6.55	40.25	52.09	4.43	0.68
EE2	Learning how to use SPADA Brightspace is easy for me	0.42	1.81	13.23	49.16	35.38	4.17	0.75
EE3	My interaction with SPADA Brightspace is clear and understandable	0.28	1.67	13.23	50.00	34.82	4.17	0.74
FC1	I have resources to use SPADA Brightspace	0.14	2.37	15.04	52.65	29.81	4.10	0.74
FC2	I have knowledge to use SPADA Brightspace	0.42	6.69	29.94	45.68	17.27	3.73	0.84
FC3	IT support person (or group) is available to assist when difficulties arise with SPADA Brightspace	0.97	4.18	18.38	44.57	31.89	4.02	0.87
LV1	Learning through SPADA Brightspace is worth more than the time and effort given to it	0.42	1.25	11.98	44.57	41.78	4.26	0.75
LV2	In less time, SPADA Brightspace allows me to quickly and easily share my knowledge with others (e.g., chat session, forums, etc.)	0.28	2.23	15.04	45.13	37.33	4.17	0.78
LV3	SPADA Brightspace gives me the opportunity to decide about the pace of my own learning	0.56	1.95	20.89	52.37	24.23	3.98	0.76
LV4	SPADA Brightspace gives me the opportunity to increase my knowledge and to control my success (e.g., via quizzes and assignments/ assessments, etc.)	0.28	0.84	10.58	45.82	42.48	4.29	0.71
HM1	I feel fun using SPADA Brightspace	0.70	0.70	11.14	47.21	40.25	4.26	0.73
HM2	I enjoy using SPADA Brightspace	0.56	0.97	12.67	47.63	38.16	4.22	0.74
HM3	Using SPADA Brightspace is very entertaining	0.70	1.25	13.23	46.94	37.88	4.20	0.76
HB1	The use of SPADA Brightspace has become a habit for me	1.67	5.01	31.34	43.73	18.25	3.72	0.88
HB2	I am addicted to using SPADA Brightspace to accomplish my study tasks	1.39	5.43	18.66	45.13	29.39	3.96	0.91
HB3	I must use SPADA Brightspace for my studies	1.81	5.01	30.92	45.96	16.30	3.70	0.86

Note: SA = strongly agreed, A = agreed, N = neutral, DA = disagreed, SDA = strongly disagreed, M= mean, SD = standard deviation

## 5. Conclusion and Limitations

This paper has investigated influencing factors of teachers' behavioral intention to use SPADA Brightspace with some constructs of UTAUT2. Most teachers gave response positively to all items associated with all the constructs, namely PE, EE, FC, LV, HM and HB. Teachers in the current study showed their positive belief about the use of SPADA Brightspace to support their learning activities in the PPG DALJAB program. The study results revealed that the teachers perceived the usefulness of SPADA Brightspace to support online learning activities as a part of the hybrid model used in the PPG

DALJAB. The use of SPADA Brightspace increased teachers' productivity because it is easy to use. Knowledge sharing also became easy to be done through active participation in online discussion forums. The existence of IT support teams is considered significant for the teachers because they can assist the teachers to deal with any technical issues.

This study is not without limitations. This study only focuses on the teachers who joined PPG DALJAB at UNNES. The generalizability of the study is also limited to the teachers who use SPADA DALJAB at UNNES. It, therefore, needs to extend this study by covering a larger population out of the UNNES setting.

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