Teachers' Belief on The Importance of Personalized Learning Model in Achieving 21st Century Competencies

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Abstract

A changing rapid world has impacted to the need of 21st century competencies, not only for students but also for teachers. Therefore, this study aimed to identify teachers' behavioural attitude, perceived norm, and personal agency as it might be able to change teachers' behaviour and intention to implement personalized learning in achieving 21st century competencies. This study is an exploratory qualitative research that used semi-structured interviews and questionnaires as the instruments to gain data from primary school teachers at East Java. The result of this study revealed that teachers' intention to perform personalized learning has been influenced by their belief about the positive impact of personalized learning in developing 21st century skills. In case of personal agency, teachers' self-efficacy in using technology aimed at personalization and making more meaningful learning for the student motivated teachers to perform personalized learning. Those results provide some insightful considerations regarding to the need to build teachers' belief about the importance of personalized learning at disruptive era since it will be a foundational consideration in shifting teacher paradigm towards the implementation of personalized learning that fits to students' needs and characteristics.

Keywords: Teachers' Belief; Personalized Learning; 21st Century Competencies; disruptive era

1. **Introduction**

The demand of innovative learning model in this disruptive era is a worldwide concern regarding to the need of preparing children for acquiring the 21st century competencies. The 21st century learning paradigm emphasizes students' abilities to think critically, able to connect knowledge to the real context, able to utilize technology and information communication, and able to work collaboratively. Unfortunately, breakthrough researches involving various strategies have been made to encourage students in achieving the 21st century competencies, but almost they were insufficient discussion about teachers' belief as it will positively encourage teachers' intention to implement a meaningful teaching and learning process. Global research propounds that essential competencies and skills such as literacy and numeracy known as 21st century skills are required for improving students' learning quality (Kim, Raza, and Seidman 2019). Otherwise, such research found that lecturing model, which is characterized by teachers' dominant instructional approach, is relatively ineffective for developing students into global citizens of the 21st century (Finnegan 2020). Another research also revealed that transmission is not the most effective way to teach 21st century skills because students have not been able to inquire contextual new knowledge from what they have learnt (Schleicher 2012). Those previous researches have brought shifting paradigm that teachers should be able to formulate teaching and learning framework which transforming 21st century skills since teachers' paradigm have strategic role in supporting the success of students' learning.

Some studies have been conducted show that teacher has the most important impact on learning (Acedo and Hughes 2014); Wiliam, 2011) and that pedagogical quality is a vital part of educational quality. Additionally, instructional quality was more relevant and influenced child learning than structural aspects of schools in developing country (Yoshikawa et al. 2018). The turning of learning and competencies in the 21st century curriculum implies new pedagogical strategies to meet the needs of students in a rapid changing world (Acedo and Hughes 2014). According to this, teachers' beliefs and intention to integrate learning model that fit to students are very necessary because some researches show that teachers' knowledge about Information and Communication Technology (ICT) does not guarantee that the teacher will implement learning based technology (Hsu, Wang, and Runco 2013). However, it depends more on teachers' belief and suggestion that technological and pedagogical technology will succeed the learning.

Many nations around the world have undertaken wide strategies through curriculum and education system to prepare children become globally competitive citizens. To thrive this, teacher should facilitate a teaching and learning that encourage students' critical thinking, problem solving, adaptability, initiative, communication, and collaboration among others. Among those, education also should Some educational researches offered the need of an innovative teaching and learning such as artificial intelligence, Science, Technology, Engineering, and Mathematic (STEM) as an interdisciplinary and applied approach, etc. A research about the implementation of project-based learning in STEM activity with water filtration system topic in improving creative thinking skill implied that students' achievement test on creative thinking skills criteria in the experimental class with STEM was better than in the control class with conventional teacher talk (Ridlo et al. 2020).

In Indonesia, the recent curriculum has transformed the 21st century educational paradigm as demands of life and work in a global era, stated onto the curriculum by integrating Higher Order Thinking Skills (HOTS), literacy, critical thinking, Creativity, Collaboration, and Communication (4C), and character building. Nevertheless, it still remains such big effort to optimize the results because of some challenges: the profile of students as digital age, environment factor, widespread demography of Indonesia, teacher professional competencies, and a rapid changing world globally. Today's world, students are facing different situation of learning which fundamentally different from the past, mainly due to their characteristic as digital native. According to Mc. Loughlin and Lee, digital-age students want an active learning experience that is social, participatory, and supported by rich media (McLoughlin & Lee, 2010). Students in the 21st century are self-regulated learner that immerse to the technology used in their learning, and therefore require different teaching approaches (Mishra and Mehta 2017).

Furthermore, a recent research in teacher education has identified the theme that require further study is a conceptual teaching and learning model that accommodate 21st skill culture (Longmore, Grant, and Golnaraghi 2018). Moreover, education system today tend to implement "one size fits all" for heterogeneous students' capability. Therefore, the teaching and learning paradigm of our education system need to be restructured so that it is more relevant to todays' world and in the future. Teachers' positive beliefs and intention toward using technologies inside teaching and learning process have been considered as one of the factor that effect students' success. In this context, teachers' belief has related to individual beliefs and decisions about learning. Hence, teachers' perspective about the 21st century skills needed to encourage teachers in designing and implementing teaching learning that best suits for digital age, such as personalized learning. Personalized Learning is a personalized-based learning model that accommodate students' needs, ability, and passion (Patrick, Kennedy, and Powell 2013). This model will help students in determining the learning goals and managing students learning, so learners able to manage and control their own learning. Personalization, controlling, and technology integration are key factors of the successful of learning.

Therefore, the objective of this study was to explore the teachers' beliefs about the importance of personalized learning for digital native at disruptive era since in Indonesian context, research about personalized learning is limited particularly research related to teachers' beliefs and intention toward personalized learning in their classroom. This research was also proposed to identify whether these beliefs influence teachers' intentions to implement personalized learning in their classrooms or not. Teachers' positive beliefs towards the importance of personalized learning will be a major consideration of implementing this model to succeed students' learning in this era. The benefits of this research hopefully reveal what teaching and learning that fit to accommodate diverse learners and pay attention to students' need and passion in the knowledge age as they are digital native.

2.   Literature Review

Education sector has changed rapidly and profoundly because of rapid changing world. Changing in the demand for skills have profound implications for the competencies which teachers themselves need to acquire to effectively teach 21st century skills to their students. According to the Assessment and Teaching of 21st Century Skill Consortium (AT21CS), the 21st century skills categorized into four: ways of thinking, ways of working, tools for working, and living in the world (Schleicher 2012). The 21st century skills is generally defined as a range of competencies to build critical thinking, problem solving, creativity, meta cognition, communication, digital and technological literacy, civic responsibility, and global awareness (Kim et al. 2019), also digital literacy knowledge and skills, media literacy, Information and Communication Technology (ICT), and others (Frydenberg and Andone 2011). Another key finding of research shows that there were 3 essential 21st century skills that are critical thinking, interpersonal, and intrapersonal skills (Shepherd 2018).

To develop those skills, knowledge, attitudes and values in responding the changing nature of knowledge and environment, teachers need to leverage their competencies which basically rooted to the teachers' belief related to teaching approach that effective to achieve the 21st century competences. According to Borg (2011), belief is a mental state which has as its content a proposition that is accepted as true by the individual holding it, although the individual may recognize that alternative may be held by others (Sutiarso and Sutiarso 2012). Meanwhile, teacher beliefs' was viewed as propositions individual that consider to be true and are often tacit, have stimulated and evaluated as a basis for action, and are resistant to charge (Mayumi and Hüttner 2020). To capture teachers' beliefs about one's ability to perform a particular behaviour, this study addressed to develop preliminary theories of how a situation might be working using integrated behavioural model and social cognitive theory as the paradigm.

2.1.   The Integrated Behavioural Model

Social cognitive theory explicitly acknowledges the existence of self-efficacy and outcome expectations, and behaviour in which an individual operates his or her cognitive perceptions (Yuen and Ma 2008). Meanwhile The Integrated Behavioural Model (IBM) has rooted to Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB). TRA and TPB concerning the individual motivational as determinants factors that encourage people to perform particular behaviours (Montano and Kasprzyk 2015:95). In this research, TRA and TPB have been underlying the assumption that beliefs and intention are determinant factor to change behaviour. A teacher's individual belief impact to teachers' decision in selecting particular teaching style, influence teacher on how use technology in their classroom, and impact to how teachers decide the teaching and learning design.

The Integrated Behavioural Model (IBM) is a new and emerging theory in the field of health promotion and health education, so more applications are needed to test the usefulness of the model for reaching out research and practice. According to this theory, there are three determinant factors affected to behavioural performance that are behavioural attitude, perceived norm, and personal agency (Montano and Kasprzyk 2015). These clusters of beliefs represents what is identifies as peoples' belief. A persons' perception of control over

behavioural performance, together with intention is expected to have a direct effect on behaviour. Intention seems like self-motivation that can effectively affect peoples' behaviour. Regarding to the use of technology, peoples' intention could be self-motivation for teacher to predict technology adoption behaviours. Intention, as it is an individual internal perception, can influence external behaviours. However, individual behavioural intention can be changed due to external social influences. A research by Sadaf et.al. reveals that teacher pedagogy acceptance has provided evidence of the importance of intentions in predicting usage behaviour (Sadaf, Newby, and Ertmer 2016).

2.2.   Personalized Learning Model

Teachers Personalized learning is a learning approach that tried to facilitate students' learning based on needs, skills, and interests (Li and Wong 2020). In personalized learning, students derive to set their own goals, to learn actively, and engaged to reflective process (Patrick et al. 2013). The personalization process starts from identifying the factors that influence student learning, such as student characteristics, learning environment, and learning outcomes (Walkington and Bernacki 2020). Shemshack also writes that personalized learning can develop students' knowledge, perspectives, skills, and understanding of concepts (Shemshack and Spector 2020).

In todays' classroom learning, the achievement of 21st century education highlights the need to provide broad autonomy for students in determining their learning goals starting from differentiation learning the develops into personalized learning (Kallio and Halverson 2020). The results of such study shows that teachers who have higher techonological pedagogical content knowledge will be more successfull in implementng the curriculum (Neuman and Danielson 2021).

3. Methodology

We took an exploratory – qualitative research design that focuses on providing a description of Indonesian teachers' belief about the importance of personalized learning model to enhance students 21st century competencies needed at disruptive era.

3.1.   Sampling

We worked with primary school teachers at East Java. More specifically, they worked in five major cities in the province: Surabaya, Malang, Madiun, Pasuruan, and Bangkalan. Teachers in these cities tended to integrate technology into their classrooms during COVID-19 pandemic and have implemented recent national curriculum. For this study, the population were all primary school teachers at five cities at East Java. However, based on the result of informed consent letter sent through WhatsApp device, only 25 teachers in total that agreed to participate and fulfil the requirements criteria.

In total, 25 teachers that have agreed to participate had completed the online questionnaire. The majority of participants (48%) were at the age of 25 – 30 years old. The majority of participants (48%) were at the age of 25 – 30 years old, 84 % female primary teachers and 16% male primary teachers. In terms of educational background, 88% of

population has earned a bachelor's degree from primary teacher major. In detail, the participants described as follows:

Table 1. Participants' Characteristics

Demography	%
Gender	
Male	16
Female	84
Age	
< 30	48
31-35	8
36-40	8
> 40	36
Years taught using national curriculum	
≤ 5 years	36
≥ 5 years	64
Implementing e-learning	100
Using ICT on teaching and learning	100
N = 25	

Based on the table, it seems that all participants were able to utilize ICT as a tool for teaching instruction. After gathering and analysing the data of questionnaire, the participants were selected based on significant results regarding to the research topic. The researcher also considered the possibility of the respondents to talk openly about the topic. Therefore, researcher chose participant that had familiar with categorized as follows: 1 female teacher at Surabaya is a teacher of my son at primary school, 1 female teacher at Madiun was my friend at bachelor's degree, 1 female teacher at Malang is an anonymous teacher, 1 male teacher in Pasuruan and 1 female teacher at Bangkalan were my student of in-service teacher training program 7 years ago. Therefore, there were five of the survey participants agreed to participate in a follow up interview which consist of 1 male-teacher and 4 female teachers.

Participants selected in this study for semi-structured interview were 5 teachers included 80% female teacher and 20% male teacher. The participant had a vast array of teaching experiences with *e-learning* during pandemic coronavirus 2019 and had implemented national curriculum more than five years. All those participants have represented five areas in East Java that selected from school with accredited "A".

3.2. Research Instrument

To gain the data, the instruments used were semi-structured interviews and an online questionnaire.

Semi-structured Interviews

The semi-structured interviews were conducted to gain further data related to how teachers' belief might influence their intention to behavioural attitude in implementing more suitable learning with technology based. The interview questions refers to IBM construction

focused on such types of these information; (1) positive and negative feelings about performing the personalized learning, (2) positive and negative outcomes of performing the behavioural beliefs related to the need of integrating personalized learning in the classroom, (3) the belief that an individual can perform a behaviour to implement personalized learning by considering other groups' point of view, and (4) facilitation and the challenge factor that make the behaviour easy or difficult to perform.

To ensure the credibility of the interview questions, I conducted a review with an expert on the area of learning model. The reviewer was an educator with five years of experience in traditional and e-learning and has earned a doctorate degree. Meanwhile, a pilot interview with one of the participants has been done immediately after the expert reviewers' approval and it continuously to select potential participant by sending a recruitment proposal through WhatsApp messenger. The pilot tested on three primary school teachers selected from the same target population from 5 cities in East Java. The result revealed that the questions helped interviewee clarity the information needed and the platform of the instrument was available with the interviewee.

The respondents listed were 5 of 25 participants engaged in conducting the data through online questionnaire. The interviews conducted twice through individual in-depth communication through video conference on zoom application. Individuals are interviewed at 30 minutes in average for each interview. The interview included one-ten open-ended questions and it was being recorded by recording features on zoom application. The audio-recorded data then transcribed textually and the result was clarified through member check to ensure that the data collected was credible.

Online Questionnaire

The questionnaire provides us objective means of collecting information about people's beliefs, knowledge, attitude, and behaviour (Jain, Dubey, and Jain 2016:1). The questionnaire used in this research consisted of two sections. The first section gain the data related to demographic characteristic of the participants and the second section contained sixteen questions related to teachers' belief about the need for implementing personalized learning in the knowledge era. The demographic questions related to how long they had implemented national curriculum, teachers' strategy in teaching and learning during the coronavirus-19 pandemic, and the teachers' capability in integrating Information and Communication Technology (ICT) towards teaching and learning.

Meanwhile, the subsequent questions in the second section of the questionnaires broke down from the theoretical framework of Integrated Behavioural Model (IBM) that postulates three kinds of beliefs including behavioural attitude, perceived norm, and personal agency (Montano and Kasprzyk 2015). Those three aspects will be elaborated more as indicator to explore teachers' belief in implementing personalized learning.

Table 2. The Outline of Questionnaire

Variable	Indicator	Elicitation Questions
Behavioural attitude	Attitude towards the behavioural experiences in implementing technology based learning	8 questions
Perceived norm	Social support from environment in integrating personalized learning	4 questions
Personal agency	Internal and external constraints of integrating personalized learning	4 questions

In determining the reliability of the instrument, it uses Aiken's V. Aiken's V is an evaluation of a content validity degree to which the instrument reflects the concept to be measured (Aiken 1980; Jain et al. 2016). It measured the degree of expert agreement in terms of the extent to which the represents the construct being measured. The formula used described as follows (Azwar 2017).

$$V = \sum s / \{n (C-1)\}$$
$$S = r - Lo$$
$$Lo = \text{Lowest rating score}$$
$$C = \text{Highest rating score}$$
$$R = \text{The score rater}$$

The content validity of Aiken's V is described on the table:

Table 3. The Content Validity of Aiken's V

The Rater	Grade	S = r – Lo
1	3	3 – 1 = 2
2	3	3 – 1 = 2
3	4	4 – 1 = 3
4	4	4 – 1 = 3
5	3	3 – 1 = 3
6	4	4 – 1 = 3
7	4	4 – 1 = 3
	$\sum s$	18

The result showed that the total score of S were 18 with the lowest score was 1 and 4 as the highest score. In this study, the value of V could be scored:

$$V = \sum s / \{n (C-1)\}$$
$$V = 18\{7\{4-1\}\}$$
$$V = 0.875$$

The Aikens' V coefficient was at 0 to 1, and 0.875 coefficient means that the questionnaire instrument has met standardized content validity.

3.3.   Data Analyses Technique

The data analyses of all data obtained through qualitative analyses. Interview responses were examined inductively to substantiate the closed and open ended questionnaire. To ensure the credibility of the data, member check and triangulation was used (Archibald 2016). A member check was completed at the conclusion of each interview and triangulation occurs by combining and prompting the data from questionnaire and the interview. The data from interview transcripts and the questionnaires were then analysed descriptively and qualitatively. For the close-ended questionnaire response, it was calculated through frequency counts and percentages.

To examine the open-ended questionnaire results, data were reduced to themes as a result of repeated coding, comparisons, and categorizations (Creswell and J. David 2018). The data particularly examined through a series of analysing step: (1) the participants' responses were read reflectively to capture a general sense of participants' responses, (2) phrases were then coded based on meaningful pieces of information to cluster the meanings, (3) categorize the data to establish connections between the categories, and (4) capture the essential structure of data to lead common themes in peoples' perception of their beliefs. The analyses of the themes were conducted in order to organize the findings in an effort to provide from the analyses of the common themes and conceptual accomplishment.

4. Finding

This research aimed to explore teachers' belief on the importance of personalized learning model to achieve 21st century learning. Analysis resulted into three major themes including (1) teachers' behavioural attitude, (2) teachers' perceived norm, and (3) teachers' personal agency related to teachers' intentions to implement personalized learning in their classrooms. The results of this study will carry out a deep understanding of implementing personalized learning in the context of Indonesia from the teachers' point of view. Regarding to the key questions rooted to IBM theory, themes have been identified as follows.

4.1.   Behavioural Attitude

Behavioural attitude was determined by behavioural beliefs that influenced by individual's belief. Meanwhile, individual's belief about themselves and their surroundings, carried out by connecting particular behaviour they want to do or not because of its advantages and or the disadvantages. However, individuals' belief can be changed due to external social influences.

Survey responses indicated that all participants (N=25) utilize online learning as an instructional academic support for students. They agreed to use *personalized learning because* they think that students will learn easily through personalized learning. It gives beneficiary in supporting students' learning and it is fit to the students' characteristic as digital native. Even though all participants agreed to implement personalized learning but they feel that personalized learning could not be effective for early grade and for the area that has unstable internet network. That is why, two teachers proposed the idea that personalized learning could be implemented well by considering the availability of means and the internet network.

Based on the results of open-ended questionnaire, it could be stated that teachers' positively response to the belief that personalized learning for primary students gave major impact to develop students' 21st century skills. The majority of participant (84%) thought that personalized learning is very important to develop 21st century skills. Teachers believed that personalized learning provide the means to improve students' creativity since e-learning presented such interesting various media virtually. This condition encouraged students' curiosity to be digital long-life learner.

Based on the results of interview, it was revealed that teachers' intention to implement personalized learning was caused by their beliefs system regarding to the advantages of implementing the learning model. One of the teacher stated that "personalized learning model will effectively help students to learn on their own achievement". Moreover, teachers believed that students will be able to communicate and collaborate with other students through learning with peers and grouping in e-learning context. The beneficiary of implementing personalized learning according to teachers' perspective described on graphic 1.
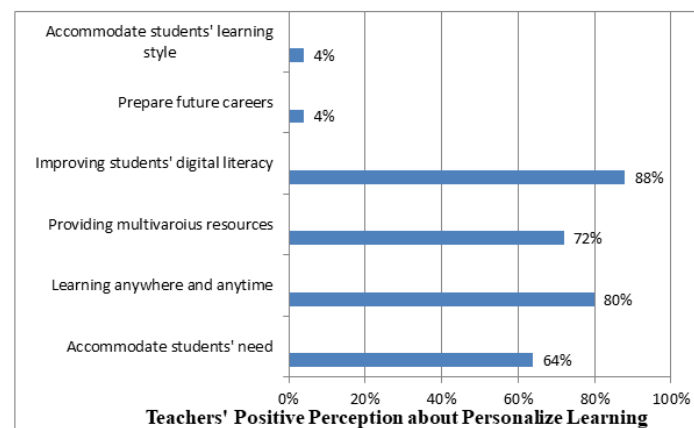
Graphic 1. Teachers' Positive Perception about Personalized Learning

The participants' positive feelings about performing the personalized learning shows that an e-learning technology helps students for having a real-time learning; learning at anytime and anywhere. Almost teacher also talked that personalized learning helped students in improving digital literacy ability as a mean to find any sources for their learning support. As one teacher said, "It provided a way to learn a topic by searching any relevant materials from many sources". Similarly, another teacher talked, "Students could learn themselves from any sources".

Teachers believed that through this way, students could organize themselves to learn independently as it is one of the characteristics of 21st culture learning. Therefore, these responses were very important as the antecedents to analyse the need of technology for students' learning at this time and in the future. Another teacher added that e-learning help students to be self-regulated learner.

Whereas, teachers' negative feeling of performing personalized learning was teachers' difficulty in monitoring whether students followed the teaching and learning process or they

have not joined in the e-learning. Almost teachers also stated that they got difficulty in evaluating students' learning progress.

4.2.Perceived Norm

Subjective norm was one of the predictor of teachers' behaviour by identifying teachers' hope that influenced by significant external. Teachers' perception in this context was subjective based on what other components of school thought about personalized learning. Therefore, this theme elaborated teachers' prediction on succeeding teaching and learning.

Teachers' belief system was not influenced only by internal factor but also determined by external factor such as family, theoretical knowledge, life experiences, and any others. Questionnaire result has shown that almost teachers could implement personalized learning supported by colleague (80%). They also need supporting from other school member to succeed as described on table 4.

Table 4. Teachers' Perceived Norm

Categories	Frequency	Percentage (%)
Schools' principle	12	48%
Administrator	13	52%
Colleague	20	80%
parents	19	76%
Others	3	12%

N = 25

Interview results further revealed that teacher intent to implement personalized learning when schools' learning management system supports the learning model. Teacher believes that supporting from schools' principle, colleague, parents, and others subject related to students needs will give a significant and positive impact to achieve students' learning success.

On the other hand, parents were also considered as obstacle factor in succeeding personalized learning because when students learn outside of the school, teacher could not able to monitor the teaching and learning process. One teacher said, "During the online learning, parents' role in guiding students' learning was effective to succeed the learning. Otherwise, students with no parents guiding tend to get difficulties in the learning process".

Some teachers thought that their belief to implement such decision regarding to teaching and learning process was influenced by peoples' perspectives around them. One of the participant stated that "to optimize the process of teaching and learning through personalized learning model, It is needed such support from parents and school principals". Aligned with all those statements, it is important to be highlighted that teachers' belief system to implement personalized learning was indirectly influenced by the schools' collective goal among teachers, supportive parents, and the role of school principle.

4.3. Personal Agency

Personal agency seems to be perceived control that is the individual's perception of how easy or difficult to perform particular behaviour. Teachers' individual perception regarding to teachers' ability in performing personalized learning depends on teachers' self-efficacy whether they able to do so and or hinder to not implement personalized learning.

The result of open-ended questionnaire analyses revealed that teachers' self-efficacy in perceiving personalized learning as a learning model that fit to students' need was affected by their self-confidence towards their professional ability in implementing this model. Teachers' belief to implement personalized learning was also influenced by how they could reach supporting factor from outside. Even though all teachers stated that they have experienced in implementing e-learning but it does not a guarantee that they will sit on the same perspective because each has their own views and thinking based on how they able to reach other support system from the outside. Therefore, in this study, it was needed to categorize teachers' point of view regarding to teachers' individual perception about the factors that support them in implementing this model (table 5).

Table 5. Teachers' Personal Agency

Categories	Frequency	Percentage (%)
Access to technology	21	84%
Teacher's professional ability development	24	96%
School support	22	88%
Relevant curriculum	17	68%
Parents' awareness	2	8%

N = 25

As stated on the previous table that there were 5 factors influenced teachers' self-efficacy to implement personalized learning, that were: (1) teachers' professional development, (2) school support, (3) the access to technology, (4) relevant curriculum, and (5) parents' awareness. Besides that, teachers' self-efficacy regarding to their ability shown that 80% teachers have self-confidence to implement personalized learning model.

Meanwhile, the challenges in the effort to implement personalized learning were the weakness of supporting from the institution, lack of ICT capability to support e-learning, the learning model does not fit to early grade because they still need learning with parents guiding, and unstable internet connection. Other teachers also stated that Moreover, there was a teacher stated that primary students need to embodied character education in their learning than strengthening their technological skill.

5. Discussion

The findings from this study revealed three distinct themes, consisting of behavioural attitude, perceived norm, and personal agency. Regarding to the behavioural attitude, the teachers perceived a particular belief that teachers' intention to perform personalized learning influenced by their belief about positive and negative impact of personalized learning. They

belief that personalized learning could develop students' 21st century skills. Teachers' positive attitude toward personalized learning used in their professional teaching and learning had been influenced by teachers' intention in using personalized learning towards (Cheung and Vogel 2013) .

Based on the results of open-ended questionnaire, it is known that the most reason of why personalized learning needed to implement was because teachers believed that this learning model could be able to develop students' 21st century skill. The shifting paradigm of 21st century learning has brought teachers' insightful consideration to implement learning revolution of 21st century, from teacher-centre to student-centre. Besides, some teachers also believed that the paradigm of one size fits all in learning should be directed into diverse learning to emphasize the needs of learners in the knowledge age. Learning is constructed by the individual and therefore learning must be experiential and active. Dewey advocated this type of learning as the fundamental right of all students (Groff 2017).

By considering those thoughts, the development of adaptive e-learning can be realized by using personalized learning. Teachers' understanding about personalized learning was captured by several key aspects that are: (1) personalize-learning based, (2) technology-based learning, (3) aimed to achieve student's self-reliance, and (4) emphasize on students' need. This conception confirmed prior research that define personalized learning as an adaptive learning platforms that offer students' control in learning to support students learning need (Pane, Steiner, Baird, & Hamilton, 2015; Dishon, 2017).

Teachers also stated that through personalized learning, students became independent learning, known as self-regulated learning. Teachers believed that personalized learning will give beneficiary to encourage students to have self-reliance in learning because students themselves should determine the learning goals. This findings was supported by some empirical studies which had found that self-regulated learning is an effective strategy to achieve the learning goals (Zhu, Au, and Yates 2016). To effectively drive meaningful learning, it could engage peers and the community in teaching and learning process (Redding 2013). Through this way, students will connect to the world outside, relevant, and meaningfull (Farisia 2021).

This fact implies assumption that personalized learning proposed students in the driver's seat. Students were encouraged to choose how to navigate the content and methods of their education. In this context, teacher has been a facilitator to create learning environments and experiences to facilitate students' unique needs and strengths of each student. This way place students as the ownership of their learning while giving them a more meaningful and effective education (Groff 2017). According to the theory of personalize learning, the process of learning is not only to help students learning pathway but it emphasize on giving students' reflect what they need to learn.

All those perspectives helped teachers in shaping their beliefs about the importance of personalized learning for students at the global era. Therefore, it confirmed prior research conducted by Tosuntas et.al that behavioural intention is suggested as effective for predicting behaviour (Tosuntaş, Karadaℋ, and Orhan 2015). These findings also highlighted previous noticeable research that teachers' intention to implement personalized learning depends on how well a teacher accepts it (Wong 2015).

The second theme, related to perceived norm implies that the individual's belief on the importance of personalized learning is affected by individual self-motif and could be changed by other perspective. Based on the research finding, it could be stated that subjective norms impact an indirect influence for teacher to determine whether personalized learning could be implemented or not. Teachers believed that expectation and other perspectives from schools' principle, colleague, parents, and others subject related to students needs influenced them to implement personalized learning into class room.

Implementing personalized learning in the context of e-learning will support an adaptive e-learning by providing personalized and adaptive learning service. As it is concluded in static context model that a context aware e-learning model is needed to optimize the impact of e learning in improving students' capability (Das. M 2010).

By implementing personalized learning, teachers believed that students will learn on their best pathway. It provided a context that teachers' capability to improve the quality of learning influenced by subjective norm. Teachers were relatively believed (80%) that colleagues were the biggest factor that affected teachers' individual belief to realize personalize learning into their class room. Therefore, there is a need for school management system to design teacher school cluster as a forum to share and reflect teaching learning process of each teacher. To acquire the 21st century skill, there should be teaching and learning that help students achieving their competencies. Therefore, the agenda should be how pedagogy can address students' need in achieving 21st century skill.

The last theme, personal agency, it is shown that teachers' self-confidence in implementing personalized learning was affected by their professional ability in implementing this model. This results verified the importance of teachers' professional development as an urge component to build teachers' confidence in integrating technology used into class room (Ertmer and Ottenbreit-Leftwich 2010). This finding can help teachers develop positive behavioural attitude to improve their professional development.

behavioural attitude, perceived norm, and personal agency determined the behavioural intention. Recent research has revealed that perceived control and self-efficacy could motivate behavioural intention while on the contrary it could be affected by the external factors (Ajzen 2002). If teachers felt himself have the quality to implement personalized learning they intend to implement the learning model. As it was formulated earlier by Ajzen that attitude has been constructed by behavioural beliefs and the normative expectations influenced by a normative beliefs and a will to meet the expectations. Meanwhile, a behavioural control influenced the decision to do or not to do (Nie et al. 2020). Nugraheni's research (2012) supports the statement of Ajzen that teachers' readiness will influenced the mindset, feelings, and attention of individuals which are reflected in behaviour that starts with their intentions (Kreitner and Kinicki 2010; Nugraheni 2012).

Three of those themes above are important in determining whether behavioural intentions can result in behavioural performance. Theoretically, the results of this study were insightful in understanding how teachers' behavioural in implementing personalized learning could be influenced by teachers' belief. From this theorem, it is necessary to suggest behavioural intention among teachers in finding the best way for digital native teaching and learning since it is effective to predict performance behaviour.

6. Conclusions

Teachers' behavioural attitudes, teachers' perspective norm, and teachers' personal agency have encouraged teachers' intention and self-motivation to implement personalized learning. The results of this study revealed that teachers' behavioural performance were closely related to teachers' perception about the importance of personalized learning to achieve 21st century skill. The fact that almost teacher agreed the importance of personalized learning in the future implies that build positive belief towards learning improvement is extremely important.

Furthermore, additional research is needed to explore and expand upon the findings from this study. Teachers' belief about the importance of personalized learning to achieve 21st culture competencies should be crosscheck to what actually students' need on their learning.

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