The Determinate Factors Affecting Teachers' Internal Conflict on Using Interactive Whiteboard

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***Abstract*—A teaching technology, interactive whiteboard--IWB, has been proved to improve the learning environment and performance. However, teachers' intention to use IWB is not as expected high in elementary school. The purpose of this study examines school context and conditions surrounding disagreement or dispute and the perspectives that inform how individuals perceive or feel conflicts. This study participates three theories of conflict and focus on the process of covert conflict. Once the covert conflict is understood, it can be reconciled and will not turn into an overt one which is harmful to organization goal or project. Communication competence, school support, and personality of innovativness are examined the effect on both perceived conflict and felt conflict. Partial Least Squares was used to analyze data which was collected from a paper-based survey. The sample size is 294. The results found that communication, school support, and teachers' innovativeness have significant effects the conflict of using IWB. Perceived conflict has positive relationship with felt conflict. Especially, the factor of communication plays the most significant one on it. The contributions of this study provide better understanding on teachers' conflicts on IWB usage. School administrator have clear objective to process to enhance the usage of IWB.The electronic file of your paper will be formatted further at Journal of Advances in Computer Networks. Define all symbols used in the abstract. Do not cite references in the abstract. Do not delete the blank line immediately above the abstract; it sets the footnote at the bottom of this column.**

***Index Terms*—Interactive whiteboard, conflict, teaching technology, theory of conflict.**

I. Introduction

Using information communication technology--ICT on pedagogy is an important issue in education sector. Both teaching and learning performances are enhanced by using the ICT. The use of interactive whiteboard --IWB, one kind of application of ICT, is also identified in many studies as a good teaching tool. It captivates learners of the digital age by increasing student engagement with instant, tactile access to digital resources.

The prevalence of IWB forces teachers to quickly modify a great part of their teaching strategies to adapt it. However, the disadvantage of the IWB embraced technical problems which occur in on-going class and cannot be solved immediately, time demands for teachers' preparation, eye-health risk for students watching strong ray, and students' suppressing of creativity. Teachers encounter and worry these problems which they have no further resource to reach and then result in a conflict manner. When teachers behave in a conflict manner, the negative reactions would be followed. They would give passive obedience to the school's orders and no enthusiastic reply.

Drawing on conflict, it is a kind of opposition between two or more parties. It must be perceived by the involved parties. In other words, if there is opposition but the parties fail to perceive it, then there is no conflict at all. By means of the conflict perceived definitely has causes and has a core process. The contextual antecedents, such as individual characteristics and organizational characteristics, have been identified as causes of conflict. As such, conflict is seen as a process whereby the antecedents, management style and outcome of project affect one another. To well manage conflict, it is essential to recognize the difference between others' needs and wants.

This paper aims to identify the factors affect conflict to use IWB. Some theories of conflict identify several steps to describe the process of forming conflict. Three theories are the framework of this study. They are Walton's two-phase theory of conflict [1], Filley's six-element theory of conflict [2], and Robbins's four-stage theory of conflict [3]. A thorough discussion of conflict and differentiates process of conflict are provided in these theories. Their discussion of conflict describes a process of specific steps of conflict and expresses the process of forming conflict. Understanding the factors affecting conflict perceived by teachers can reduce the conflict and improve performance of the action.

Walton's theory presents two phases of conflict: differentiation and integration. The other two theories also follow the approach and only described more detail. In this study, we examine the determinants affecting the covert conflict before it forms to overt one. The differentiation phase then is the issue in this study. For Filley's theory, antecedent conditions, perceived conflict, and felt conflict are summarized as the differentiation phase. For Robbins' theory, the potential opposition and cognition stages consist with the differentiation phase as well. Two theories are integrated in this study to discuss the relationship among communication, school support, teachers' innovationess, perceived conflict and felt conflict. By understanding the antecedents of teachers' conflict, school administrator can have a constructive plan to reduce the conflict and enhance the intention of using IWB.

II. Related Works

A. IWB's Pros and Cons

IWB is designed to engage a wide variety of students in the

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learning process. It provides teachers with multiple ways to represent information using interactive text, images, sound and video files, and thus engage a broad range of learners. Students can also use the same features of the product to demonstrate their understanding of a topic. Most IWB literature is highly positive about the impact and the potential of the technology [4]-[6]. There was a study focuses on the use of IWB as a tool for supporting classroom dialogue. The result showed that teachers' initial training and professional development are considered for using IWB [7].

However, the reported problems and drawbacks of IWB have been fewer and some have been noted. For the most part, they revolve around either training or practical concerns. Training is often found to be insufficient as lacing the in-depth follow-up. Practical problems include reports of IWB breaking down or freezing up [8] and poor board visibility [9]. Some other problems for teachers time demands for teachers' preparation, health and safety risks from wires for IWB device [10], and unclear copyright act for programs [11].

A study also obtained a results show that having a positive attitude to technological artefacts like IWB is less likely to enrich the learning environment and lead to pedagogical change. Thus, teachers' IWB use is mostly informed by their pedagogical knowledge [12].

Even there are training course for teachers to learn how to use the IWB, but the supplier training focused on how to operate IWB rather than how to use it in a pedagogical manner. Therefore, all the participants perceived IWB as a display tool rather than as being an educational tool that requires special considerations when designing instruction with. Teachers may be ICT literate, but not competent enough to apply the skills in their teaching and learning environments. Another issue for teachers' worry, the materials includes pictures and video might download from the Internet. The copyright of these materials might be neglected and misused. These worries result in teachers' opposition to use IWB.

In terms of students' creativity, they would be overexposure to multimedia resources and are used to 'overwhelm' or 'spoon-feed' [13]. By only watching a multimedia context and holding learners' attention, it would not necessarily educate the students. Students would be lack of thinking and less creativity. Moreover, concerning the health of students, the IWB might reflect light and the non-sufficient illumination would hurt the health of student's eyes. These drawbacks of using IWB result in teachers' conflict to use it.

B. Theories of Conflict

A conflict requires that parties identify actual or perceived incompatibility in their relationship. It, conflict, initiates from divergent perspectives and involve multiple drives. It all goes through a process of moving from covert to overt conflict. Some theories of conflict then proposed two-phase [1] or six-element [2] or four-stage [3] to describe the process of moving from covert to overt one. The process mapping among these three theories is shown in Table I.

This study aims to obtain better understanding on the covert conflict for school teachers to use IWB. By acknowledging the determinate of conflict and its relationship, school administrators can reconcile the conflict and provide an appropriate environment for teachers to use IWB. This study then uses a derived conceptual framework based on these famous theories and only focuses on the first part, as shown at the upper part in Table I, covering the covert conflict which before the conflict behavior occurs.

TABLE I: PROCESS MAPPING OF THREE THEORIES OF CONFLICT

Walton(1969)	Filley (1975)	Robbins(2003)
Phase 1 Differentiation	*Element 1* Antecedent conditions	*Stage 1* Potential opposition (communication, structure, personal variable)
	Element 2 Perceived conflict *Element 3* Felt conflict	*Stage 2 Cognition* and personalization (perceived and felt)
Phase 2 Integration	*Element 4* Manifest behavior *Element 5* Resolution or suppression *Element 6* Aftermath	*Stage 3* Behavior *Stage 4* Outcomes

The approach of drawing the process of conflict originates with [1]. The phase labeled differentiation begins the process and involves raising issues, pursing the rationale for position, and acknowledging the severity of the differences. Individuals enter the integration phase upon arriving at a depersonalized definition of the problem. The phase is characterized by acknowledging common ground and approaching to solutions. These two phases are commonly applied to distinguish the steps of forming conflict and used to ascertain the concern of this study.

Conflict is seen by Filley [2] as a cyclical process beginning with antecedent conditions and lead directly to the next element of perceived or felt conflict. The antecedent conditions create the chances for conflicts to arise. Perceived conflict is characterized by an initial awareness of difference by the involved parties. It involves cognitive processing that either creates or avoids a conflict behavior. The primary action in this element is an attempt to determine the causes of the differences. The conflict then intensifies into felt conflict. The parties become opposed in this element and assume protective behavior to further their issues.

Robbins' four-stage theory of conflict [3] summarizes the previously discussed theories into four stages: potential opposition, cognition and personalization, behavior, and consequences. An important aspect of the model is the interdependence among the different stages it passes through and the fact that the parties involved are dependent on each other for the consequences. The potential opposition is the same as the antecedent conditions, such as communication processes, structural factors, and personal attributes. The second stage of cognition and personalization requires that the parties perceive a difference in the goals or approaches

for attaining the goals. The perception of difference may not lead to personal involvement in the form of hostility or frustration. It definitely leads to emotional involvement in some other forms.

According to Filley's and Robbins's first step, a chance to arise a conflict is recognized as an approache with communication processes, structural factors, and personal attributes which is taken as the antecedents. The antecedents of conflict to use IWB substitute 1) lack of communication between teachers and school administrator, 2) the structure of implementing the usage of IWB, such as school support, and 3) teachers' personal variables, such as innovativeness. Once the circumstance of conflict occurs, the next step which perceived and felt conflict is followed. Understanding the factors affecting perceived and felt conflict, can reduce the conflict and improve the performance of the action.

Robbins's stage 2 identifies individual's cognition and personalization on receiving a difference in the goal. This is similarly presented in Filley's element 2 and 3 which are perceived and felt conflicts. In this study, the forming of conflict is a way to understand teachers' cognition of using IWB. It is then complied with perceived and felt conflict to examine the process and their relationship. This study aims to examine the factors affecting covert conflict before it turns to overt conflict. As described above there are four constructs which are communication, school support, personal innovativeness, perceived conflict and felt conflict, are used to examine the relationship among them.

C. Three Antecedent Conditions: Communication, Innovativeness, and School Support

Conflicts could be caused by wrong communication, different purposes, dependence of limited resources, dissatisfaction to the professional status [14]. In other words, well communication toward same goals with supporting resource can reduce conflicts. Furthermore, as declared in Robbins' first phase, potential opposition presents approaches with communication processes, structural factors, and personal attributes forming the categories of variables that may lead to opposition between individuals or parties. These three determinants in this study are discussed for resolving the conflict – well communication, school support, and personal innovativeness.

In terms of well communication, communication competence has been taken as a predictor of employee success[15]. The superiors' communication competence of subordinate also affected the superiors' overall performance[16]. For conflict resolution, communication competence is the core issue [17]. When adopting a new technology at elementary school in this study, the degree of communication between school administrators and on-serving teachers results in the degree of conflict.

Support refers to provide resources strategy to promote the interests of the individual, and to assist them from working environment. School support on using IWB includes administrative support, teaching hours and hours, hardware and software environment and teaching equipment[18]. Another study also pointed out, school support, including administrative support, teaching hours and periods, as well as subsidies, provide administrative support part covers learning venues, hardware and software environment and teaching equipment, teaching aids, campus social and cultural interaction between peers[19].

Innovativeness is an important concept in communication in understanding why individuals adopt an innovation or not [20]. Applying IWB is a change for teachers' lecturing approach. It is a stress for them. By IWB training, teachers need to learn a new technology. They need to invest time and the effort is ambiguous. Teachers' willingness to use IWB presents the attitude towards the adoption of a new technology. The findings of Marcinkiewicz [21]stress the character of innovativeness as an important determinant of computer use. For using IWB which changes the traditional teaching approach, individuals with a greater willingness to change have less conflict on new challenge. The innovativeness of personality reduces the motive of conflict.

D. Two Covert Conflicts: Perceived and Felt Conflict

These three antecedent variables discussed above provide the chances for conflicts to occur, based on the individuals involved, and lead directly to the next stage of perceived or felt conflict. Perceived conflict happens when two parties misperceive the mission. Teachers might misperceive that there is no support from administrator. Another case, the conflict could be misperceived even it does not exist. Only one of the parties identified conflict as existing when one of the parties felt uncomfortable. This step of perceived conflict in this stage involves cognitive processing that either creates or avoids a conflict behavior.

Felt conflict, is present with the process of perceiving conflict. A greater probability of conflict exists when individuals are similarly dominant or passive as opposed to a mixed dominant-passive relationship. Individuals then may have an emotional sense of meaning for the relationship. Negative feeling occurs when the relationship is harmful.

Perceived conflict is characterized by an initial awareness of difference by the involved parties. The primary action is an attempt to determine the causes of the differences. The conflict escalates into felt conflict and emotional responses dominate. The parties become polarized and assume protective behavior in order to further their positions on the issues. Felt and perceived conflict form an iterative process that is essential to predicting how the actual behavioral set will proceed.

Lack of communication, less supports from school administrator, and teachers' personality on innovativeness are discussed the relationship on teachers' conflicts in this study.

III. Methodology

The research questions are built on the process of covert conflict. Three constructs indicating the potential opposition are communication between school administrator and teachers, school support on the using IWB, and teachers' personality on innovation. The following forms of opposition are perceived and felt conflict. Perceived conflicts and teachers' emotion on conflicts are measured. They present teachers' perception and emotional reaction on the conflicts, such as angry, refuse to use, less intention to use. These six

hypotheses, shown in Fig. 1, examine the relationships between each two of them. The seventh hypothesis is the relationship between perceived and felt conflict.

H1: Communication has a significant effect on perceived conflict.

H2: School support has a significant effect on perceived conflict.

H3: Innovativeness has a significant effect on conflict.

H4: Communication has a significant effect on felt conflict.

H5: School support has a significant effect on felt conflict.

H6: Innovativeness has a significant effect on felt conflict.

H7: Perceived conflict has a significant effect on felt conflicts.

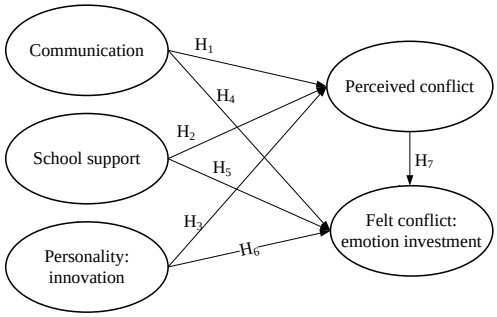


Fig. 1. Research model.

A. Development of Survey Instrument

Communication , it is measured with the Interpersonal Communication Competence Scale(ICCS) [22]. The ICCS has been examined in other study and with a variety of skills [23]. In this study, seven items which present the communication between individual and group are selected. Participants rate the communication process between themselves and the school administrator in terms using a scale ranging from (5) very strong agreement, to (1) very strong disagreement. These items are: My conversations are pretty one-sided, I can put myself in others' shoes, I don't know exactly what others are feeling, Other people think that I understand them, When I've been wronged, I confront the person who wronged me, I let others know that I understand what they say, and I have trouble convincing others to do what I want them to do.

School support, it covers administrative support, equipment, resources, time and space arrangements. The items measure the support obtained from school administrator and adopted from [24]. They includes for example: Top management is much interested in IWB usage rate, Top management is considerably favorable to use IWB, Top management frequently mentions the various prblems and matters related to IWB, and Top management thinks that successful IWB applying can make a contribution.

Innovativeness, the most representative scales of innovativeness is presented the ability to introduce newness in one's life. For using IWB, the technological innovativeness is a measure used to assess a person's attitudes towards the need to the tool. An innovativeness scale was developed by Van Braak [25] and there were four items measuring innovativeness. This present study applies the scales on the innovativeness of teachers' personality. Its scopes go beyond the sole adoption of new products. The items are: I consider myself to be creative and original in my thinking and behavior, I am aware that I am usually one of the last people in my group to accept something new, I find it stimulating to be original in my thinking and behavior, and I am challenged by ambiguities and unsolved problems.

Perceived conflict and felt conflict, it is measured with the intragroup conflict scale [26] and process conflict items [27], [28]. We adapted ten items to reference the appropriate of using IWB. Questionnaire items encompass, for instance, how much emotional conflict is there in your work group? How often do people get angry while working in using IWB? How often do you disagree about resources allocation in your work group?

B. Data Collection

Pre-test and pilot-test were conducted to modify and examine the questionnaire. Participants were teachers who have experience on using IWB. Pre-test questionnaire was examined by five experts who were familiar with teaching and IWB. After wording the questionnaire items, pilot-test was implemented by 97 participants. There were 91 ones returned and 11 ones were invalid and dropped. The 80 useful data were examined on the reliability and validity. With respect to the less sample size, the reliability and validity of the trade-offs to adopt a more loosen standard: (1) Eigen-values greater than1 (2) the reliability greater than 0.35; (3) the validity greater than 0.5 [29]. Twelve items were deleted. They are itemBS05, BS06, BS07, BS12, BS13, BS 14, BS15, BP04, BC01, BC04, BC06 and C01. The results of pilot-test are shown in Table II.

TABLE II: RESULTS OF PILOT TEST

	Item #	Eigen-values	Factor loading	Cronbach's α
communication	BC05	2.181	.819	.733
	BC02		.728	
	BC07		.719	
	BC03		.680	
school support	BS01	2.833	.845	.885
	BS03		.819	
	BS02		.778	
	BS04		.745	
	BS10	2.829	.880	
	BS09		.837	
	BS08		.745	
	BS11		.744	
innovativeness	BP02	2.644	.920	.836
	BP01		.879	
	BP03		.744	
	BP04		.687	
perceived conflict	C04	2.699	.758	.791
	C06		.752	
	C05		.734	
	C03		.720	
	C02		.708	
felt conflict	C07	3.078	.904	.900
	C08		.897	
	C09		.873	
	C10.		.834	

PS.: some items were deleted as factor loading were less than 0.5

The formal questionnaire was handed out 344 participants. There were 321 returned with 27 invalid. Of the total 294 valid questionnaires, 70 males and 224 females were included. Mainly the data was distributed in the age between 31 to 45 years-old and109 participants with master degree.

The years of teaching experience, of 58.3% for 5 to 15 years, 5 years of below was 5%, more than 26 years was of 2.4%.

IV. Results and Discussion

The data was analyzed by t-test to examine the difference between female and male group. The result shows that there is no significant difference between groups. Three criteria were then used to assess convergent validity. First, factor loadings of all standardized items should be higher than 0.7. Second, the composite reliability (CR) should be higher than 0.6. Third, the average variance extracted (AVE) should be higher than 0.5 [30]. For discriminant validity, the square root of AVE of each construct should be higher than the correlation coefficients between the particular construct and any other construct [31]. Table III shows the values and all fit the requirement.

After having established the reliability and validity of the data collected, PLS (Partial Least Squares) modeling was used to estimate the structural model using the bootstrapping resampling process. PLS is one kind of structural equation modeling technique which employs a component based approach for estimation commitments. It places minimal restrictions on measurement scales, sample size (ten times the number of cases) and residual distributions. The R2 for dependent latent variables were used to assess predictiveness of the model. It was recommending that standardized paths should be around .20 and ideally above .30 to be considered meaningful. The R2 of perceived conflict (0.461) and felt conflict (0.399) of this data are greater than 0.30. It met the criteria and represented a good model, as shown in Fig. 2.

The hardline in Fig. 2 represent the path coefficients (β), which identify the degree of effects between variables. The t-value is denoted in parenthesis. If t-value is greater than 1.96, it presents the significance level of 0.05. The dot lines show the non-significant relationship between variables. As shown in Fig. 1, communication is positively associated with perceived conflict (H1) (β = 0.506, t-value>1.96) and felt conflict (H4) (β = 0.221, t-value>1.96). School support has negative relationship with perceived conflict (H2) (β = -0.345). Innovativeness also has negative effect on felt conflict (H6) (β = -0.090). Perceived conflicts is positively related to felt conflict (H7) (β = 0.470). The t-value of H6 is less than 1.96, but it is still taken as significant as p <0.1. Hypotheses H3 and H5 are not supported by the data.

The path analysis shows that the construct of communication has significant effect on the cognitive conflict and the emotional investment. The difference between traditional whiteboard and IWB is the teaching scenario. By watching the traditional whiteboard, students are quiet to be lectured, while IWB provides a lively teaching way and teacher-student interaction. However, the interaction between students and IWB may easily lead a disorder of the classroom. Students with an unstable mentality in the class, the learning performance are not higher than traditional way as expected.

The overwhelm concernedness on creative, activate teaching approach damage the teaching goal. Moreover, the interesting and lively IWB does not guarantee the achievement of teaching objectives for effective teaching. As students might understand the content of textbooks, but under a limited teaching time, the teaching schedules need to be attained and students have no chance to do a deep thinking. It also deprives the discussion chance between teachers and students.

TABLE III: Results of Convergent Validity Test

Construct	Item #	mean	Factor loading	t-value	CR	AVE	Cronbach's α
communication	BC02	2.51	0.784	24.984	0.833	0.556	0.722
	BC03	2.16	0.785	24.415			
	BC05	3.05	0.748	25.348			
	BC07	2.97	0.670	15.704			
school support	BS01	3.78	0.731	17.139	0.907	0.551	0.880
	BS02	4.26	0.776	29.736			
	BS03	3.79	0.800	27.193			
	BS04	4.19	0.737	22.378			
	BS08	3.55	0.665	12.552			
	BS09	3.71	0.743	21.762			
	BS10	3.70	0.704	15.906			
	BS11	3.68	0.793	26.237			
innovativeness	BP01	3.65	0.811	9.244	0.889	0.668	0.835
	BP02	3.52	0.867	9.363			
	BP03	4.06	0.840	24.756			
	BP04	4.00	0.759	13.343			
perceived conflict	C02	2.14	0.776	23.111	0.857	0.546	0.786
	C03	2.37	0.749	17.328			
	C04	2.62	0.708	22.150			
	C05	2.40	0.691	17.866			
	C06	2.28	0.779	27.763			
felt conflict	C07	2.00	0.919	82.451	0.931	0.770	0.896
	C08	1.86	0.908	49.287			
	C09	1.93	0.817	19.679			
	C10	1.94	0.875	48.699			

For a long term concern, when students are used to looking at the IWB, the curiosity will be gradually getting low. It might lose the attention of students again. For one more reason on the health concern, the ray reflex from IWB may damage students' eyesight. Teachers might concern the learning performance, the health, and the long term concern. They then feel conflict on the usage of IWB.

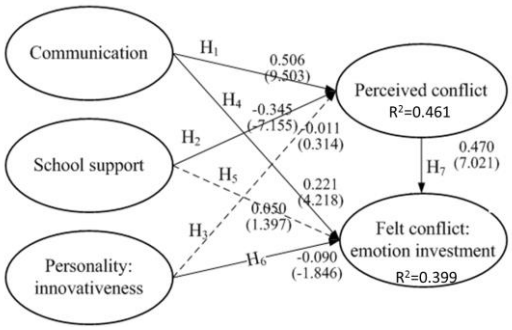
For the construct of school support, there is negative relationship on conflict. In the absence of accessing the support and providing adequate resources, teachers will have cognitive conflict, such as the malfunction of IWB interrupts the teaching activities. The technical problems would bother teachers. Instead, the teachers obtaining more support will reduce the distress and pressure of using IWB on teaching. One with innovativeness accepts easily new things. There would be no conflict on using the whiteboard. The result shows there is no sufficient evidence to identify the relationship between innovativeness and perceived conflict, but the relationship between innovativeness and felt conflict

is negative.

Two constructs of school support and communication have influence on conflicts. In particular, the communication is the most significant one. Lack of communication is often a source of conflict. In this situation, the difficulty which teachers encountered such as class time, health of eyesight, and the teaching approach, needs to be solved. The information exchange allows each party to access the other party's thinking and knowledge, mistrust, confusion and misunderstanding being thus highly diminished.

Effective teaching requires that the teacher is aware of and responds to the diversity of learning needs and learning styles within the group being taught. Teachers also have to prepare materials which are used to lecture on the assistance of IWB in advance. They then have more time in the class to interact with the learners rather than writing information on the board during the period. Preparing the new teaching materials takes more time than chalkboard for them.

Theoretically, the IWB is more than a computer, a projector or a screen. It means that teachers should recognize and adopt a more interactive approach to teaching. To effectively advocate the integration of information technology into teaching, in addition to teachers' own information literacy and a high degree of willingness to use, you must also have adequate hardware and software facilities, good planning to build, and to provide technical support and maintenance professionals, in addition to yet to allocate resources to provide the teachers job training courses, in order to effectively stimulate the willingness of teachers to use. These are all areas of school administrator support. The contributions of this study provide better understanding on teachers' conflicts on IWB usage. School administrator have clear objective to process to enhance the usage of IWB.



Number on line: path coefficient; parenthesis: t-value

Fig. 2. PLS analysis of research model.

V. Conclusion

This study explored the attitudes of teachers toward the use of IWB in elementary school. The process of forming a conflict is applied to obtain better understanding on the antecedents of conflict in on-serving teachers in this study. There are 294 valid questionnaires response from on-serving teachers, 70 males and 224 females were analyzed. The data is examined as no difference between two genders. It is then analyzed by SEM to identify the relationships between constructs. The results show that all communication competence, school support, and teachers' innovativeness influence their attitude to use IWB. The most significant construct affecting covert conflict is the communication competence. The construct of school support is also identified as an important factor affecting teachers' perceived conflict. Teachers' innovationess is also recognized as major factor affecting felt conflict for using IWB. Moreover, the construct of perceived conflict has effect on felt conflict. It presents that reconciling perceived conflict can prevent further process of conflict.

A classroom environment where technology is used in innovative ways could lead to progress learning and teaching. The interactive whiteboard (IWB) is one example of such emerging technologies. It allows teachers and students to relate with technology in a manner that was not previously possible. Students' perspective have positive on the use of IWB. As may be expected, the benefits to be obtained from exploring new technologies, but there is an inevitable investment of time, efforts, new learning and intention to change existing teaching strategies involved in this approach.

Conflicts occur in teachers who with various personnel patterns. In schools, faculties' conflicts generate costs in terms of time, energy, decrease of productivity, increase of stress. It costs quite a long time, especially energy and, if we turn time and energy into money, we will find that conflicts are not cheap. Experienced teachers need more convincing on using IWB. The well communication between school administrative and on-serving teachers could reconcile the covert conflict. It prevent the covert conflict turn to overt one which would reduce the performance of IWB. The school support also increase teachers' feeling to use IWB. In particular, the well communication and support may agitate teachers' innovativeness to obtain well reputation on using IWB. The findings provide a better understanding of teachers' covert conflict for using IWB.

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