

Influence of the democratic climate of classrooms on student civic learning in North Sulawesi, Indonesia

Sulaiman Mapiasse¹

Flinders University, School of Education sule_btnyeleng@yahoo.com.au

This study is intended to examine the influence of the democratic climate of classrooms on student engagement and learning outcomes in order to find out a more adequate model of learning in Civic Education classrooms. A model is developed for testing with data obtained from a sample of 930 students from schools in North Sulawesi. Prior to the analysis, scales are analysed using Confirmatory Factor Analysis (CFA) and are calibrated using Rasch Measurement Model Analysis (RMMA). The analysis shows that the trimmed model (Model B) is slightly more coherent and simpler than the hypothesised model (Model A). However, both models indicate that the democratic climate of Civic Education classrooms has significant effects on student engagement, student civic knowledge and interpretation skill, and student concepts of citizenship.

Civic education, democratic climate, classrooms, student engagement, citizenship

Johnson and McClure (2004) define the classroom learning environment as a social atmosphere in which learning takes place that is sometimes called the educational environment. Kubow and Kinney (2000) argue that educational environment is related to how teaching is conducted in the classroom setting. More specifically, Moos (1979) conceptualises educational environment as a system that have four variables, namely physical environment, organisational aspects, teacher characteristics and pupil characteristics in which classroom climate is viewed as the mediator between these variables that operated through interactions among class members, teachers and students. This process is influenced by the orientation, the quality and the quantity of interactions and intercommunications between the classroom members (Allodi, 2002). These, in turn, affect student satisfaction, self-concept and the learning processes that influence learning outcomes.

Research into classroom environments has been carried out over many years. Different studies have been undertaken to investigate a variety of aspects of classroom environment. These studies have ranged from investigating factors influencing learning environments to the students' perceptions of their classrooms, and the relationship between student perceptions of their classrooms and their learning outcomes. These studies have been extended to cover schools and families (Parsons, 2002). In addition, the researchers have conducted studies about the effects of the classroom environment on the learning of different subject matter in different parts of the world. Aikin (1942) studied the effects of democratic processes in the classrooms and the schools in the Eight Year Study in the United States (reported in Morgenstern & Keeves, 1997). Kim, Fisher and Fraser (1999) investigated science classroom environments; Waldrip and Fisher (2003) investigated the differences between urban and country student perceptions of their learning environment (reported in Dorman, 2003); and Guthrie and Cox (2001) investigated the school and classroom context that would make students want to engage in reading longer.

¹ Preparation of this paper was supported by the Cultural Inclusivity through Publishing Project and funded by a Flinders University Diversity Initiative Grant.

Researchers in this field have divided engagement in classroom learning into three categories, namely behavioural, cognitive, and emotional engagement. Behavioural engagement consists of actions like following the rules, adhering to the classroom norms, and the absence of disruptive behaviours such as skipping school or getting into trouble, participating in classroom learning and academic tasks, persistence, effort, attention, asking questions, and participating in school-related activities. Emotional engagement includes student positive and negative affective reactions in the classroom, students' emotional reactions to the school and the teacher, feeling of being important to the school, and valuing success in school-related outcomes. Cognitive engagement is conceptualised in terms of a psychological investment in learning, a desire to go beyond the requirements of school, and a preference for challenge by being strategic or self-regulating (Fredricks, et al., 2003, 2004).

Studies have been undertaken to identify the correlation between behavioural engagement and learning outcomes for elementary and high school students (e.g. Alvermann et al., 1987; Ames, 1992; Finn et al., 1995; Guthrie & Cox, 2001; Miller & Meece, 1999). Other studies have focused on the correlation between discipline problems, behavioural disengagement and achievement across grade levels (e.g. Aikins et al., 2005; Barker & Gump, 1964; Bates et al., 2003; Finn & Pannozzo, 2004; Fredricks & Eccles, 2002). The finding is that behavioural engagement has long-term effects on student performance. Students who show engagement and interest in their early grade levels are found to be performing better in their later years (Fredricks et al., 2003).

Brown (1997), and Turner and Scott (1995) emphasise that social discourse in learning communities is intrinsically motivating. Furthermore, Wentzel (1991, 1997, 2002, 2003), Urdan and Maehr (1995) demonstrate that student possession of pro-social goals lead to their constructive social behaviours in the classroom. Fredricks, Blumenfeld, Field and Paris (2002) found that there was a unique relation of a challenging and a structured work environment involving student affect, behaviour and cognition. Skinner and Belmont (1993) also found that there was a reciprocal relationship between teacher behaviour and student engagement in the classroom. Teachers' interactions with students predicted student behavioural and emotional engagement in the classroom, both directly and indirectly through their effects on student perceptions of their interactions with teachers. In addition, Kindermann (1993) and Wentzel (2002) argue that there is an association between children peer groups and the amount of engagement the children's showed in the classroom. Palincsar (1998) in the analysis of the theory of constructivism claims, that the growing interest in social constructivist perspectives is propelled by recent educational reform efforts encouraging students to assume a more active role in their learning, to explain their ideas to one another, to discuss disagreements, and to cooperate in the solution of complex problems, while teachers participate in the design of these contexts and the facilitation of this kind of activity. However, to make an effective context for learning, discourse must be communicative. These findings confirm the importance of learning environment in fostering student learning (Clark et al., 2003; Belenky, 1997; Greeno 1998; Randolph, 2000; Roeser, Midgley & Urdan, 1996; Ryan & Partick, 2001; Turner et al., 1998; Wentzel, 2002).

Torney-Purta et al. in their cross-national studies on Civic Education reports that a democratic climate of classrooms has a positive effect on student civic knowledge (1975; 2001).

Based on these research studies, it is argued that it is important to encourage students engagement to learning activities in democratic Civic Education classrooms in order to provide them with opportunities to obtain deeper understanding of the civic values transmitted through meaningful classroom experiences in order to enable them to implement their civic values critically and responsibly in their social interactions.

METHOD

Instruments

In order to measure the constructs of the model of this study, instruments were developed by operationalising the concepts into items with categories of meaning that were measurable.

Scale for Democratic Climate of Civic Education Classroom (DCCEC) was constructed basically based on a concept developed by Kubow and Kinney (2000) augmented by concepts suggested by Radz (1983) and Bickmore (1993). Scale for Student Engagement in Civic Education Classroom (SECEC) was constructed by adapting and modifying a scale previously developed by Fredricks et al. (2002, 2003, 2004). Scales for Civic Knowledge and Interpretation Skill (CKIS), Student Concepts of Democracy (SCD) and Student Concepts of Citizenship (SCC) were developed by adapting scales previously used by Torney-Purta, et al. (1975, 2001) in IEA study, MCEETYA (2004) and Mellor (2004), and modifying them based on Indonesian Civic Education curriculum and text books (i.e. DIKNAS, 2003, 2004; Dwiyono et al., 2003). The number of items prepared for these scales were 33, 19, 58, 24 and 27 respectively. A sample is provided in Table 1. All items were delivered to students in Bahasa Indonesia.

Table 1. Sample of Scales and Items

Scale	Dimensions	Descriptions	Item samples
Democratic Climate of Civic Education Classroom (DCCEC)			
Democratic climate of Civic Education Classroom	Active participation	Sharing ideas and among peers and facilitators; teachers do not take a stand as an authority on civic subjects; teachers share impressions on class activities with students.	We feel free to share ideas in class.
Student Engagement in Civic Education Classroom (SECEC)			
Student engagement in Civic Education Classroom	Behavioural engagement	Positive conducts (adhering to classroom norms), absence of disruptive behaviour such as skipping classrooms and getting in trouble; involvement in learning such as effort, persistence, concentration, attention, asking questions; and contribution to class discussions, participation in classroom activities.	I pay attention in the Citizenship Education class.
Student Civic Knowledge & Interpretation Skill (SCKIS)			
Civic knowledge	Key features of Indonesian democracy.	Understand that Indonesian citizens use secret ballots to elect representatives to govern on their behalf.	In Indonesian democracy, how do citizens elect representatives for the People's Representative Council?
Student Concepts of Democracy (SCD)			
Concepts of Democracy	Freedom	Students' beliefs about what is good or bad for democracy with respect to freedom.	When everyone has the right to express their opinions freely that is ...
Student Concepts of Citizenship (SCC)			
Concepts of citizenship	Effective participation in democratic decision-making	A belief that in a democratic society people are entitled to hold and express their views on civic and political matters, within the law, and in turn must respect the others to do the same.	An adult who is a good citizen would participate in a peaceful protest against a law believed to be unjust.

As shown in Table 2, a four point Likert scale using a 0, 1, 2 and 3 scoring scheme was used for Democratic Climate of Civic Education Classroom (DCCEC), Student Engagement in Civic Education Classroom (SECEC), Student Concept of Democracy (SCD) and Student Concepts of Citizenship (SCC) scales. For the Civic Knowledge and Interpretation Skill (CKIS) scale, a four-alternative multiple choice scheme was used.

Complexity of the sample structure entailed the two stages of sample selection, namely, the school level stage using the Probability Proportionate to the Size (PPS) procedure and the student

level stage using a Simple Random Sampling (SRS) procedure (Rosier & Ross, 1992). PPS and SRS procedures gave students the same opportunity to be in the sample at the school level and student level. In selecting students from each school, an intact class was used because the main focus of the study was a classroom environment.

Table 2. Category meanings

Constructs	Category meanings			
	0	1	2	3
Democratic Climate of Civic Education Classroom & Student Engagement	<i>never</i>	<i>rarely</i>	<i>sometimes</i>	<i>often</i>
Student Concepts of Democracy	<i>very bad for democracy</i>	<i>somewhat bad for democracy</i>	<i>somewhat good for democracy</i>	<i>very good for democracy</i>
Student Concepts of Citizenship	<i>not important</i>	<i>somewhat unimportant</i>	<i>somewhat important</i>	<i>very important</i>
Student Civic Knowledge & Interpretation Skill	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>

The sample in this study was stratified into three categories, namely government schools in urban areas, government schools in rural areas and private schools. Eleven schools were selected from each stratum with the cluster size of 30 students for each school. As a result, the effective sample size of this study was 980 students.

Sample

The data used in this study were collected using survey instrument and involved 100 items and 1030 ninth grade students in North Sulawesi, Indonesia. Because the responses obtained from 100 cases were found to be unsatisfactory, with substantial missing data (more than 20 %), only 930 cases were included in this analysis.

Instrument Validation

In order to validate the instrument developed, a pilot testing had been undertaken in June 2005 in which 200 hundred ninth grade students were involved. Principal Component Analysis (PCA) and Rasch Measurement Model Analysis (RMMA) led to the omission of several items that did not fit the Rasch Measurement Model. Infit mean square values in the range of 0.78 to 1.30 were used (Bond & Fox, 2001). Values less than 0.78 indicated significant overfit, and values greater than 1.30 indicated significant underfit. Both underfitting and overfitting items were considered misfitting. However, in order to solve item shortage, five items with infit mean square (IMS) less than 0.78 were included in the final instrument. From this pilot testing and analysis, 17, 15, 34, 13 and 21 items for Democratic Climate of Civic Education Classroom (DCCEC), Student Engagement in Civic Education Classroom (SECEC), Student Civic Knowledge and Interpretation Skill (SCKIS), Student Concepts of Democracy (SCD) and Student Concepts of Citizenship (SCC) scales respectively were selected to be used in the study.

After handling the missing data using multiple imputation with NORM software (Darmawan, 2002; Schafer, 1999), two analysis procedures were conducted, namely Confirmatory Factor Analysis using Mplus version 2.1 (Muthen & Muthen, 1998) and Rasch Measurement Model Analysis (RMMA) using Quest (Adams & Khoo, 1993). CFA was used to assess the multidimensionality of the scales and to compare their factorial models, whereas RMMA was used to recheck the unidimensionality of the scales (Bond & Fox, 2001).

In the Confirmatory Factor Analysis (CFA), factorial models (i.e. one factor and multiple factors including uncorrelated, hierarchical and nested models) were compared for each scale. This model comparison was carried out using several statistical fits, namely Chi-Square, Chi-Square divided by Degree of Freedom, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI) and RSMEA. This analysis resulted in the formation of factors as observed variables (manifest variables) underlying five unobserved variables (latent variables). Out of four models compared for each scale, a hierarchical model showed superiority over other models except for Student Concepts of Democracy (SCD) scale where the one factor model was more adequate than others. This CFA results provided the factor structure shown in Table 3.

Table 3. Factor structure in CFA result

Latent Variables	Manifest Variables
1. Democratic Climate of Civic Education Classroom (DCCEC)	1. Classroom participation (PRT) 2. Controversial issues (CONT) 3. Reflective thinking (RFT) 4. Relevant issues (RLV)
2. Student Engagement in Civic Education Classroom (SECEC)	1. Behavioural engagement (BHV) 2. Emotional engagement (EMT) 3. Cognitive engagement (CGN)
3. Student Civic Knowledge & Interpretation Skill (SCKIS)	1. Civic knowledge (KNW) 2. Civic interpretation Skill (INTRSKL)
4. Student Concepts of Democracy (SCD)	Unity Concepts of Democracy (DEM)
5. Student Concepts of Citizenship (SCC)	1. Understanding several ways to participate in civic life (PRTW) 2. Understanding civic aspects to be respected (RESPT) 3. Understanding the nature of laws (LW) 4. Student prudence in responding to different aspects of civic life (PRD)

Items that had loadings less than 0.20 were excluded from the factors of each latent variable. In order to assure the unidimensionality of each construct or variable used, the selected items were then analysed using Rasch Measurement Model Analysis (RMMA) involving only fitting cases and the cases that completed all items or did not have zero or perfect scores. Items that initially fitted the Rasch model were selected to be the start values for estimating measures for each manifest variable in the second RMMA. In this second RMMA run, cases that were excluded initially were pulled back to be re-estimated using the anchoring method. The scores obtained from this estimation were then used as input data for further analysis in the study.

Modelling

Based on the literature reviewed in this study, a hypothesised model for the influence of democratic climate of civic education classroom on student engagement and on the civic learning outcomes was advanced (see Figure 1). It was hypothesised that democratic climate of a civic education classroom could influence student engagement in civic education and the civic education learning outcomes.

Figure 1 represents the structure of the hypothesised model of the study so called Model A. This model consisted of 14 manifest variables (MVs) and 5 latent variables (LVs) that were produced through the previous Confirmatory Factor Analysis (CFA) and Rasch Measurement Model Analysis (RMMA). Democratic Climate of Civic Education Classroom (DCEC) scale, the independent variable (exogenous variable) in the model was formed as an inward or formative mode, whereas all other endogenous variables were constructed in the outward or reflective modes. It is worthy of note that Student Concepts of Democracy (SCD) had just one manifest

variable. The Partial Least Square (PLS) loading or weight for such a variable is always equal to unity regardless of its specification as inward or outward mode.

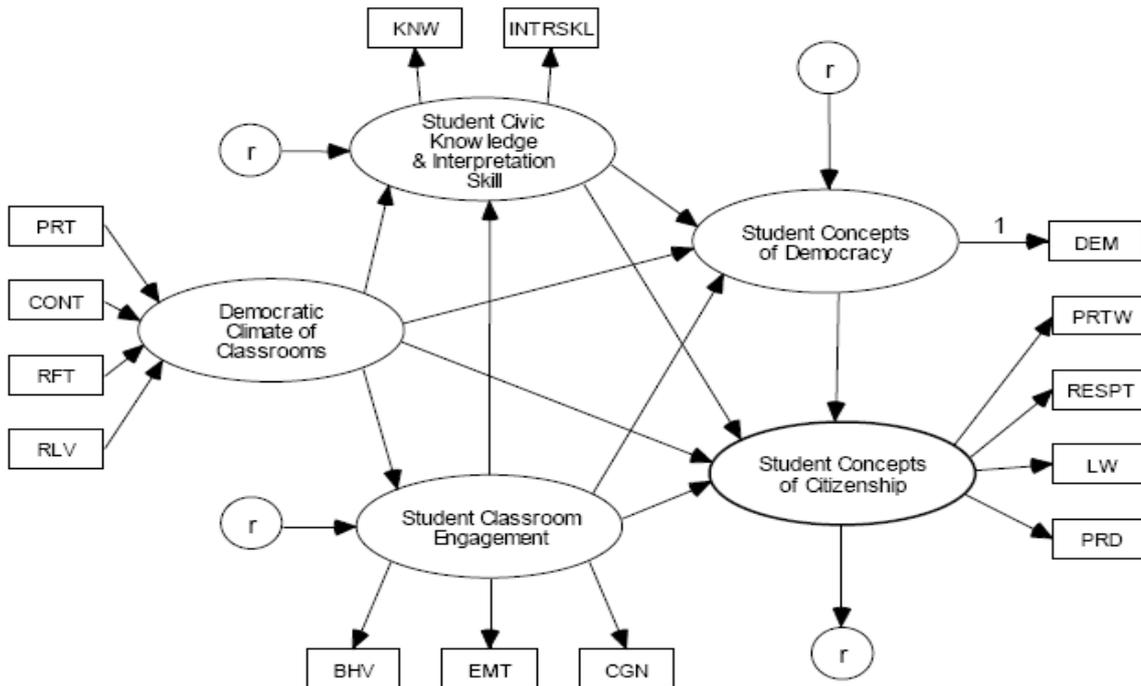


Figure 1. Model A: Structure of the Hypothesised Model

From Figure 1, it could be seen that the inner model structure of Model A formally comprised a recursive path model that in terms of direct effects had four restrictions. These restrictions were about direct effects of other variables on the variable of Student Concepts of Citizenship (SCC) which reflected outcomes, namely student understanding of ways to participate in civic life, aspects of civic life to be respected, nature of laws and student prudence in responding to different aspects of civic life. As shown in Figure 1, Democratic Climate of Civic Education Classroom (DCCEC), Student Engagement in Civic Education Classroom (SECEC), Student Civic Knowledge and Interpretation Skill (SCKIS) and Student Concepts of Democracy (SCD) were assumed to have direct effects on Student Concepts of Citizenship (SCC). Apart from these direct effects, DCCEC and SECEC were assumed to have indirect effects on SCC that operated through SCKIS and SCD. In addition, SCKIS had also an indirect effect on SCC that operated through SCD.

This specification can be justified on the basis of an assumption that those students who are in a democratic civic education classroom will be inspired to engage and learn more actively. Through the democratic climate of the civic education classroom, they do not only have opportunities to learn actively but also to develop their social skills enabling them to participate effectively and responsibly in their civic education classrooms. Hence, a democratic climate does not only influence their cognitive development but also their social skill development. In addition, through engagement in the civic education classroom, they show their positive or negative attitudes towards civic education classrooms. Positive attitudes will result in a better approach to the Civic Education subject that will help them increase their civic knowledge and understanding. Furthermore, since a better approach means deeper exploration and more collaboration, this learning experience will also facilitate the development of their concepts about democracy and citizenship.

The model of this study involved latent variables measured indirectly by different indicators. In order to handle this model, the data were analysed by employing Partial Least Square (PLS) method that was developed by Wold using statistical software called PLSPATH 3.01 (Sellin,

1990). This technique provides explicit estimation of latent variable scores by means of least square methods without requiring stringent distributional assumption (Sellin, 1995).

For exploratory analysis purpose, Model A as a hypothesized model was compared with Model B. As a comparison of the inner model results could not be performed in this kind of analysis, a comparison was only made for the outer model statistics. The descriptive redundancies and the associated jackknife redundancies for each endogenous manifest variable (MV) along with the block total and model total were compared between Model A and Model B. This procedure gave the overall fit of the hypothesized model and the refined model (Sellin, 1995). This fit indicated the predictive power of each model. In addition, the residual path for each latent variable was also calculated using the following expression:

$$r = \sqrt{1 - R^2}$$

where r is a residual path and indicates the effects associated with unexplained variance in a certain latent variable and R^2 is the explained variance associated with latent variable. Furthermore, weights and loadings in the outer model and path coefficients, fit indices and model effects in the inner model obtained from data analysis were used in interpretation and testing of the model.

RESULTS

In order to assess how the measured variables might be linked to each other, how well the data fitted the model proposed and how the democratic climate of civic education classrooms might influence student engagement, civic knowledge and interpretation skill, concepts of democracy and citizenship, the initial model called 'Model A' was assessed and trimmed to produce a more adequate model in its predictive power and coherence called 'Model B'.

Tables 4 and 5 present the PLS results obtained based on the proposed model (i.e. Model A) and the refined model (i.e. Model B).

Table 4. Weights and Loadings of Models A and B

Variable (<i>n</i> =930)	Model			
	A		B	
	<i>Weight</i>	<i>Load</i>	<i>Weight</i>	<i>Load</i>
Democratic Climate				
Participation	0.76	0.85	0.73	0.88
Controversial	-0.36	-0.20	-0.27	-0.04
Reflective thinking	0.48	0.59	0.52	0.69
Relevance	-0.21	-0.01	-0.10	0.16
Student Classroom Engagement				
Behavioural Engagement	0.41	0.78	0.42	0.78
Emotional Engagement	0.48	0.78	0.46	0.77
Cognitive Engagement	0.40	0.77	0.41	0.78
Civic Knowledge & Interpretation Skill				
Knowledge	0.80	0.92	0.79	0.92
Intrepretation Skill	0.40	0.65	0.41	0.66
Student Concepts of Democracy				
Concepts of Democracy	1.00	1.00	1.00	1.00
Student Concepts of Citizenship				
Participation Ways	0.32	0.82	0.32	0.82
Respect	0.26	0.77	0.26	0.77
Law	0.39	0.84	0.39	0.84
Prudence	0.28	0.78	0.29	0.78

Table 4 shows the PLS weights and loadings for each block. Table 5 displays the estimated direct inner model effects, the corresponding jackknife standard errors and the R-square and Q-square values for each inner model equation. All manifest variables were standardised prior to the PLS estimation. Therefore, the loadings and weights displayed in Table 4 are zero-order correlations between manifest variables (MVs) and their corresponding latent variables (LVs). In addition, the inner model coefficients in Table 5 are standardised path coefficients because the LVs are always standardised to unit variance (Sellin, 1995).

Table 5. Estimated Direct Effects. Jackknife Standard Errors in Parenthesis

Predicted	Predictor	Model			
		A		B	
LV (N=930)					
Student Engagement in Civic Education Classroom (SECEC)	Democratic Climate of Civic Ed. Classroom (DCCEC)	0.43	(0.03)	0.44	(0.03)
	R^2	0.18		0.19	
	Q^2	0.18		0.19	
Student Civic Knowledge & Interpretation Skill (SCKIS)	Democratic Climate of Civic Ed. Classroom (DCCEC)	0.14	(0.04)	0.18	(0.03)
	Student Engagement in Civic Ed. Classroom (SECEC)	0.07	(0.03)		
	R^2	0.03		0.03	
	Q^2	0.03		0.03	
Student Concepts of Democracy (SCD)	Democratic Climate of Civic Ed. Classroom (DCCEC)	0.09	(0.05)		
	Student Engagement in Civic Ed. Classroom (SECEC)	0.11	(0.04)	0.15	(0.03)
	Student Civic Knowledge & Interpretation Skill (SCKIS)	0.24	(0.03)	0.26	(0.03)
	R^2	0.10		0.10	
	Q^2	0.09		0.09	
Student Concepts of Citizenship (SCC)	Democratic Climate of Civic Ed. Classroom (DCCEC)	0.22	(0.03)	0.23	(0.03)
	Student Engagement in Civic Ed. Classroom (SECEC)	0.25	(0.03)	0.24	(0.04)
	Student Civic Knowledge & Interpretation Skill (SCKIS)	0.16	(0.03)	0.15	(0.03)
	Student Concepts of Democracy (SCD)	0.16	(0.03)	0.17	(0.03)
	R^2	0.26		0.26	
	Q^2	0.25		0.26	

Table 5 indicates that two direct effects in the model were found to be virtually zero because they did not meet the rule of thumb that weights and loadings must have twice the estimated standard errors (Keeves, Darmawan & Njora, 2003). This resulted into the deletion of the two corresponding paths in Model B. These paths were Student Engagement in Civic Education Classroom (SECEC) on Student Civic Knowledge and Interpretation Skill (SCKIS) and Democratic Climate of Civic Education Classroom (DCCEC) on Student Concepts of Democracy (SCD).

With respect to the inner model, a comparison can be made between Model A and Model B if the weights are numerically the same. However, they are usually different because the weights depend on the specified inner model. Therefore, path coefficients, R^2 and Q^2 in the inner model cannot be compared. What are compared in this analysis are the inner path estimates in terms of relative effect sizes (Sellin, 1995) as shown in Table 6.

Table 5 shows that after the deletion of two paths (SECEC on SCKIS and DCCEC on SCD) from the model, there were changes in path coefficients. The effect of Democratic Climate of Civic Education Classroom (DCCEC) on Student Civic Knowledge and Interpretation Skill (SCKIS), the effect of Student Engagement in Civic Education Classroom (SECEC) on Student Concepts of Democracy (SCD) and the effect of Student Concepts of Democracy (SCD) on Student Concepts

of Citizenship (SCC) increased from 0.14 (0.04) to 0.18 (0.03), 0.11 (0.04) to 0.15 (0.03) and from 0.16 (0.03) to 0.17 (0.03) respectively. In addition to the direct effects, Table 6 shows indirect effects in both models. DCCEC had indirect effects on SCKIS through SECEC in Model A (0.03), on SCD through SCKIS in Model A and B (0.09) and through SECEC in Model B (0.11) and on SCC through SCKIS, SECEC and SCD in Model A (0.16) and through SCKIS in Model B (0.15). SECEC also had indirect effects on SCD through SCKIS in Model A (0.06) and on SCC through SCKIS and SCD in Model A (0.03) and through SCD in model B (0.02). Furthermore, SCKIS had an indirect effect on SCC through SCD in both models (0.38 and 0.04) respectively.

Table 6. Direct and Indirect Effects of the Predictors on the Predicted

Predictor	Predicted	Model					
		A			B		
		Effects			Effects		
LV	LV	Direct	Indirect	Total	Direct	Indirect	Total
	(n=930)						
Democratic Climate	Student Engagement	0.43	-	0.43	0.44	-	0.44
	Civic Knowledge & Interpretation Skill	0.14	0.03	0.17	0.18	-	0.18
	Concepts of Democracy	0.09	0.09	0.18	-	0.11	0.11
	Concepts of Citizenship	0.22	0.16	0.38	0.23	0.15	0.38
Student Engagement	Civic Knowledge & Interpretation Skill	0.07	-	.07			
	Concepts of Democracy	0.11	0.02	0.13	0.15	-	0.15
	Concepts of Citizenship	0.25	0.03	0.28	0.24	0.02	0.26
Civic Knowledge & Interpretation Skill	Concepts of Democracy	0.24	-	0.24	0.26	-	0.26
	Concepts of Citizenship	0.16	0.04	0.20	0.15	0.04	0.19
Concepts of Democracy	Concepts of Citizenship	0.16	-	0.16	0.17	-	0.17

Even though the inner models could not be compared, it is possible to compare their outer model statistics using descriptive redundancies and the corresponding jackknife redundancies for each endogenous manifest variables along with block total and model total (Sellin, 1995). As shown in Table 7, the modifications had been made for Model A and Model B yielded only small changes in terms of predictive power because the difference in overall jackknife estimates between the two models was not significant, namely 0.112 to 0.115. However, this small difference to some extent indicates the superiority of Model B over Model A. Therefore, model modification done on Model A had increased its predictive power slightly (Sellin, 1995).

The PLS results presented above suggest that Model B would be preferred to Model A. Apart from its parsimony, Model B was slightly more powerful to Model A in terms of prediction. However, this does not mean that Model B was so-called ‘true’ model because it was just one of many possible alternative models available.

With respect to the direct effects, it could be seen from Table 5 that while Democratic Climate of Civic Education Classroom (DCCEC), Student Engagement in Civic Education Classroom (SECEC), Student Civic Knowledge and Interpretation Skill (SCKIS) and Student Concepts of Democracy (SCD) were found to be the most powerful predictors of Student Concepts of Citizenship (SCC), DCCEC turned out to be the most powerful predictor of Student Engagement in Civic Education Classroom (SECEC) and Student Civic Knowledge and Interpretation Skill

(SCKIS). On the other hand, SCKIS became the most powerful predictor of Student Concepts of Democracy (SCD). It should be noted that SCKIS was found to be weakly predicted by SECEC. On the contrary, SDC was weakly predicted by DCCEC.

Table 7. Descriptive (R_j) and Jackknife (R_d) Estimates of Redundancies for Comparing Predictive Power of Model A and B

Variable (<i>n</i> =930)	Model			
	A		B	
	R_d	R_j	R_d	R_j
Student Engagement				
Behavioural Engagement	0.111	0.108	0.118	0.115
Emotional Engagement	0.113	0.110	0.116	0.113
Cognitive Engagement	0.110	0.107	0.117	0.115
Block Total	0.334	0.325	0.351	0.343
Civic Knowledge & Interpretation Skill				
Knowledge	0.028	0.023	0.027	0.023
Intpretation Skill	0.014	0.011	0.014	0.012
Block Total	0.042	0.034	0.041	0.035
Student Concepts of Democracy				
Concepts of Democracy	0.103	0.093	0.095	0.089
Block Total	0.103	0.093	0.095	0.089
Student Concepts of Citizenship				
Participation Ways	0.175	0.169	0.176	0.170
Respect	0.156	0.150	0.157	0.152
Law	0.183	0.176	0.184	0.178
Prudence	0.160	0.154	0.161	0.156
Block Total	0.674	0.649	0.678	0.656
Model total	0.117	0.112	0.119	0.115

With regard to the indirect effects, it should be seen from Table 6 that DCCEC had indirect effects on SCKIS, SCD and SCC. On the other hand, SECEC had an indirect effect on SCC. In addition, SCKIS had an indirect effect on SCC. Regardless of the effect types (i.e. direct or indirect), all predictors had significant effects on the Student Concepts of Citizenship (SCC) as an outcome in the model (see Figure 2).

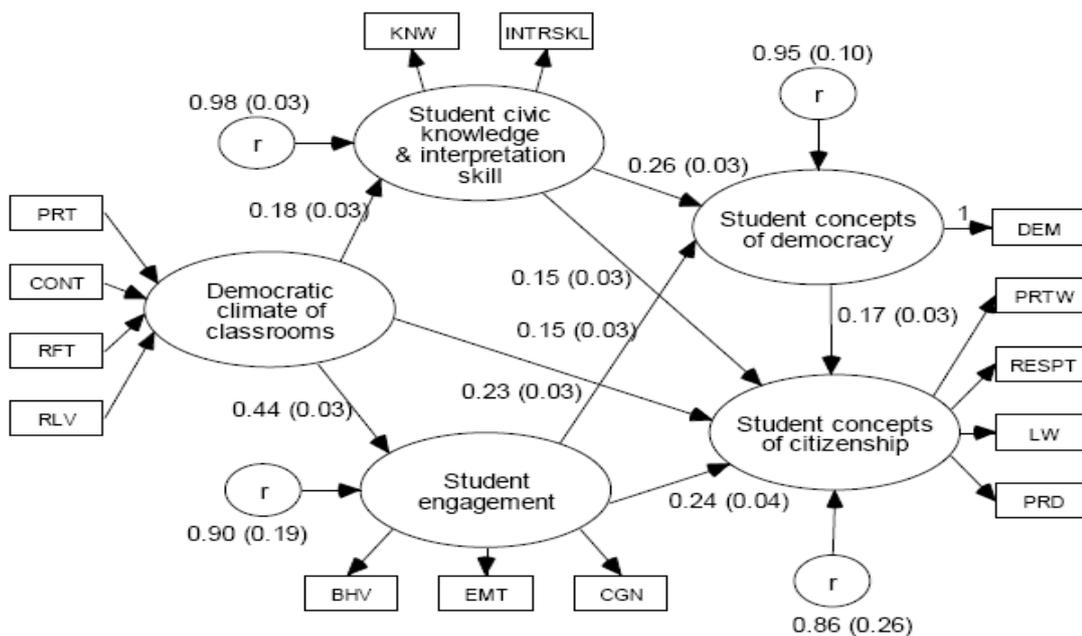


Figure 2. Model B: Structure of Refined Model from PLS Analysis

DISCUSSION

PLS analysis was run to examine the predictive power of the proposed model so called Model A. The analysis showed that this model was slightly less coherent than the refined model so called Model B. This slight difference indicates that Model B has superiority on Model A in its parsimony and slightly more coherent in its theoretical adequacy.

In general, all variables that were predicted to influence student concepts of citizenship were found to have significant path coefficients. This indicates that democratic climate of Civic Education classrooms, student engagement in Civic Education classrooms, student civic knowledge and interpretation skill and student concepts of democracy are four important factors that should be considered by teachers in classrooms in order to produce good citizens.

In details, the democratic climate of Civic Education classrooms played an important role in fostering student civic knowledge and interpretation skill, student engagement and student concepts of citizenship in North Sulawesi. However, democratic climate was found not to contribute significantly to the level of student concepts of democracy. This implies the importance of developing a Civic Education classroom that is characterised with democratic climate where students are provided with chances to practice more reflective thinking. Such a classroom is more likely to facilitate students to obtain civic knowledge and interpretation skill, to make them engaged in Civic Education classrooms and to help them to develop concepts of citizenship properly. These results in general support the importance of social and cognitive environment of classrooms as it is suggested by previous researchers, such as Allodi (2002), Aikin as reported by Morgenstern and Keeves (1997) and Fredricks et al. (2004). The finding that democratic climate does not play statistically a significant role in developing student concepts of democracy in North Sulawesi is not easy to explain because other research (e.g. cross-national studies of Civic Education in 1975 and 2001 by Torney-Purta et al.) has suggested that democratic climate played important roles in developing the student understanding of democracy.

In contrast to the democratic climate that was found to influence student civic knowledge and interpretation skill, student engagement was found to have a significant effect on student concepts of democracy, but not on student civic knowledge and interpretation skill. This result was unexpected because the review of literature indicated that student engagement could help students to develop their knowledge (e.g. Fredricks et al., 2002, 2004). Similar to this, democratic climate was strongly suggested to have an effect on student concepts of democracy (e.g. Torney-Purta, 2001). This issue might be associated with the nature of student classroom engagement in North Sulawesi where engagement was shaped not to be compatible with the development of student civic knowledge. The engaging condition of classrooms created by classroom members, teachers and students, could not help students to practice cognitive engagement that was more likely to be associated with knowledge development (Anderson, 2000). In addition, democratic climate developed in Civic Education classrooms was more likely to be designed in a way that did not support the development of student concepts of democracy.

It is understood from the review of literature that discussing controversial and relevant issues (Torney-Purta et al., 2001) are two important elements that are suggested to have significant effects on the student concepts of democracy in Civic Education classrooms. The presence of two manifest variables involving Controversial Issues and Relevance, that contributed negatively to the Democratic Climate of Civic Education Classroom (DCCEC) latent variable, on the one side, and the two other manifest variables involving Participation and Reflective Thinking that made positive contributions to it, on the other side, was an unexpected result. The previous research has suggested that raising controversial and relevant issues in Civic Education classrooms were the most important elements of the democratic climate scale (Kubow & Kinney, 2000; Torney-Purta et al., 2001). Bearing on mind the possible limitation existing in the instrument battery, this might imply that controversial and relevant issues were discussed in Civic Education classrooms by using a method that did not support the shaping of democratic classrooms. For example, teachers

raised controversial issues in classrooms and put themselves as the ultimate resources of final opinions in front of their students. Such a practice might make students incapable to understand and to practice democracy in their classrooms. Another possibility was that teachers, in general, rarely raised controversial and relevant issues in classrooms so that students could not work out properly items addressing both sub-concepts in the instrument.

It is also possible that what makes democratic climate and student engagement behave differently on student civic knowledge and interpretation skill, and on student concepts of democracy is the existing difference in their nature. Democratic climate represents both cognitive and attitudinal elements of learning condition simultaneously, whereas student engagement incorporates cognitive, behavioural and emotional engagement. It was shown in Table 4 that within democratic concept, participation and reflective thinking contributed more to the scale compared to relevant and controversial issues that had negative signs. It was also shown that within engagement concept, emotional engagement became the most dominant element in the scale compared to the behavioural and cognitive elements of sub-scales. As a result, it is assumed that the development of student civic knowledge and interpretation skill is more likely to be associated with the democratic climate compared to the student engagement due to its cognitive nature. In contrast, the development of student concepts of democracy is more likely to correspond to student engagement due to its attitudinal nature. Furthermore, the development of student concepts of citizenship was found to be affected by both democratic climate and engagement because concepts of citizenship are mix of emotional, attitudinal and cognitive representations of knowledge. This explanation is based on the notion of multiple intelligences (Anderson, 2000) that leads to the assumption that each kind of specific knowledge requires different conditions to be nurtured.

Student civic knowledge and interpretation skill that were found to have significant effects both on student concepts of democracy and citizenship indicated that in order to produce a democratic and responsible citizens, students should be provided with a better understanding of civic knowledge and skill. Previous cross-national studies led by Torney-Purta in 1975, 1999 and 2001 strongly suggest that civic knowledge and interpretation skill are important to help students to have a better understanding of democracy and citizenship.

Finally, student concepts of democracy that were also found to have a significant effect on student concepts of citizenship indicated that in order to produce good citizens, to some extent, a good understanding of democracy was required.

CONCLUSIONS

The refined model so called Model B in this study was proved to be more parsimonious and slightly more coherent in its theoretical adequacy. In addition, all variables that were predicted to influence student concepts of citizenship, namely democratic climate of Civic Education classrooms, student engagement in Civic Education classrooms, student civic knowledge and interpretation skill and student concepts of democracy were found to have significant path coefficients in the model tested. Democratic climate of Civic Education classrooms played an important role in fostering student civic knowledge and interpretation skill, student engagement and student concepts of citizenship in North Sulawesi. However, democratic climate was found not to contribute significantly to the level of student concepts of democracy.

Unlike democratic climate, student engagement was found to have a significant effect on student concepts of democracy, but not on student civic knowledge and interpretation skill. In addition, student civic knowledge and interpretation skill were found to have significant effects both on student concepts of democracy and citizenship. Furthermore, student concepts of democracy were also found to have a significant effect on student concepts of citizenship. Finally, this finding should initially be tested and replicated in further studies before acceptance. If the evidence supports the finding emerging from this study, then greater thought should be given to the making

of a democratic and engaging classroom climate and to what is involved in building such a classroom environment.

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