

Lecturer Efficacy, Professional and General Competencies of Malaysian Polytechnic Technical Lecturers

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Abstract

The move towards globalization has enhanced the need for changes and innovation in education. The Malaysian polytechnics should be prepared to provide quality education to meet the current demands. This calls for polytechnic lecturers who are competent and have a belief that they are able to deliver quality education. Much research has also been carried out to identify the competencies needed by technical instructors for successful teaching. While these competencies have been identified, research on the level of knowledge and the level of performance on these competencies is very limited. This study aimed to identify the competencies needed by polytechnic technical lecturers based on the level of importance of each competency. This study also aimed to identify the level of knowledge and performance of these competencies as perceived by polytechnic technical lecturers. This study also sought to find the relationship between lecturer efficacy and lecturer competency. Using a survey questionnaire, 401 technical lecturers from five polytechnics participated in the study. The variables of interest were statistically tested using descriptive statistics as well as the Pearson product moment correlation. A discrepancy analysis was also conducted to identify competencies that could be enhanced through relevant professional development programmes. The results of this study support much of the previous research in validating competencies needed by technical lecturers. The results also indicated that there was a positive relationship between lecturer efficacy beliefs and lecturer competency. The study revealed that technical lecturers with high personal teaching efficacy were also those who demonstrated high level of lecturer competency.

Keywords: personal teaching efficacy; general teaching efficacy; level of importance; level of knowledge; level of performance

1. Introduction

In the global front, changes and innovations have taken place within the educational scenario. Such changes and innovation in education call for competent polytechnic teaching personnel who are able to deliver quality education. In 2008, technical lecturers faced greater challenges when they were required to teach in English, thus involving a switch from the former medium of instruction, Bahasa Melayu to English (Mas Nida 2009; JPPKK 2007). Only recently three polytechnics have been selected as the nation's premier polytechnics. The higher ministry of education has the objective that premier polytechnics will foster the internationalisation of local knowledge, innovation and technology applications (JPP 2010).

Malaysian polytechnics need technical lecturers who possess the necessary competencies and have the belief that they are able to deliver quality education to accommodate changes in the education system. This belief, known as "teacher efficacy" has been recognized as a very powerful construct by previous studies (Gibson and Dembow 1984). It was found to influence certain patterns of classroom behavior such as the amount of effort, student

achievement, level of competence and when dealing with changes or innovations in education (De Mesquita & Drake 1994; Trentham et al. 1985)

1.1 The construct of teacher efficacy

Researchers have linked the construct of teacher efficacy to Bandura's (1977) social cognitive theory. According to Bandura, two types of expectations determine human behavior, (a) an expectation that a certain behavior will lead to a certain outcome, and (b) an expectation that one can perform the required behavior in order to bring about the desired outcome. Researchers have conceptualized these two expectations as "general teaching efficacy" and "personal teaching efficacy" (Gibson & Dembow 1984; Ashton & Webb 1986).

1.2 Efficacy and the implementation of educational innovation

Change is a gradual and difficult process for teachers (Guskey 1988). De Mesquita and Drake (1994) suggested that an individual teacher's sense of

efficacy has been found to be an important characteristic determining the effectiveness of any innovation in education. The implementation of change and innovation may have a negative effect on teachers' personal efficacy. However, improvements that occur in personal teaching efficacy due to increased skills may be offset by changes in the definition of what constitutes good teaching (Stein & Wang 1988). Rising standards challenge teachers and their existing beliefs about the effectiveness of their teaching strategies (Ross 1994; Stein & Wang 1988).

1.3 Lecturer competency

Much research in the past was carried out to identify the competencies needed by technical lecturers (Coyner & McCann 2004; Roberts et al. 2007; Kaagari 2007). Based on the level of importance of each competency, these competencies have been identified. The researchers were in agreement that the competencies needed by technical instructors are professional competencies related to the knowledge, skills and abilities that the lecturers require to teach effectively (Toglia 2004). These competencies refer to the pedagogical and instructional techniques that technical instructors should possess (Toglia 2004; IBSTPI 2003; Roberts et al. 2007). Norton and Harrington (1978) suggested that technical instructors also require general competencies which refer to skills, knowledge and abilities in other subjects such as science, language, mathematics and psychology. General competencies are helpful for the development of competencies in technical and professional areas. For the purpose of the present study, general competencies refer to the language aspect, specifically the English Language.

1.4 The present study

The study on lecturer efficacy was based on Bandura's Social Cognitive theory (1977). For the purpose of the present study, teacher efficacy was termed as "lecturer efficacy", nevertheless it carried the same meaning as teacher efficacy. It was dealt as two separate variables defined by Gibson and Dembow (1984):

1. "Personal teaching efficacy" or PTE is the lecturers' own expectations that they will be able to perform the actions that lead to student learning, and
2. "General teaching efficacy" or GTE is the believe that lecturers' ability to perform these actions is limited to factors beyond school control (such as family background and parental interference).

The study on professional competency was based on the Roberts et al. model (2007) and other related literature (IBSTPI 2003; Toglia 2004; Kaagari 2007).

Professional competencies refer to the pedagogic aspects and instructional techniques that technical lecturers should possess. In line with the need to use English Language as a medium of instruction in Malaysian polytechnics, English Language proficiency was termed as general competency. The study on general competency was based on studies by Noraini et al. (2007) and Norzita (2002) which incorporated grammar, listening, speaking, reading and writing skills. This study had four main objectives. First, it sought to identify the level of lecturer efficacy as perceived by technical lecturers. Second, the study sought to identify competencies needed by polytechnic technical lecturers based on the level of importance of each competency. Next, the study also sought to determine competencies that could be enhanced through professional development programmes. The study also examined the relationship between lecturer efficacy and lecturer competency.

2. Method

2.1 Participants

Six hundred technical polytechnic lecturers were asked to complete a survey on lecturer efficacy and competency beliefs. The lecturers represented 24 polytechnics and were chosen based on stratified random sampling according to five specified zones. Surveys were completed and returned by 502 lecturers (83.6% response rate). Only 401 respondents were retained to accommodate data analysis. The female population represented 59 % of the group while 41% were males. In general, 51% of the participants had taught less than 10 years while 49% were experienced technical lecturers. 58% of the sample held a Bachelors degree, 31% per cent were diploma holders and only 11% held a Masters degree.

2.2 Instrumentation

Data were collected from two sources described below. The sources were Lecturer Efficacy Scale and Lecturer Competency Questionnaire.

2.2.1 Lecturer Efficacy Scale

Lecturer efficacy was measured through the Gibson and Dembow (1984) standard teacher efficacy scale. The scale has been used so frequently that Ross (1994) called it a "standard" measure in the field. In the present study, the shorter version of the Gibson and Dembow scale was selected because the items in the scale had the highest factor loading in the previous studies (Henson 2001; Ghaith & Shaaban 1999). The scale consisted of two dimensions, personal teaching efficacy (PTE) and general teaching efficacy (GTE). PTE is more self-

referent, indicating a lecturer's belief about whether he or she can perform the necessary actions to positively influence student learning. GTE refers to one's belief whether he or she can overcome barriers to positively influence student learning. In the study, PTE was represented by nine items while GTE consisted of 7 items. Both PTE and GTE used a five-point Likert scale format from strongly disagree (1) to strongly agree (5). Internal consistency (alpha reliabilities) for both PTE and GTE were .73 and .72 respectively.

2.2.2 Lecturer Competency Questionnaire

The Lecturer Competency Questionnaire (LCQ) consisted of two dimensions; (a) Professional competency and (b) General competency. The scale for professional competency was adapted from the International Board of Standards for Training, Performance and Instruction (IBSPTI) items as well as other related literature (Toglia 2004; Roberts et. 2007; Kagaari 2007). The general competency scale was used to measure the English Language proficiency level of polytechnic technical lecturers. This scale was adapted based on previous related studies (Noraini et al. 2007, Norzita 2002). In the study, the professional competency scale was represented by 63 items, while the general competency scale consisted of 38 items, both in a five-point Likert scale format. Both scales were used to identify the level of importance, the level of knowledge and the level of performance of each competency. Each scale has a relatively high reliability coefficient. The alpha coefficients for each dimensions are as follows; professional competency: level of importance (.98), level of knowledge (.95), level of performance (.93); general competencies: level of importance (.97), level of knowledge (.94), level of performance (.91).

2.3 Data analysis

Separate personal teaching efficacy scores (PTE) and general teaching efficacy (GTE) were obtained by averaging each respondent's scores on the nine and seven items representing PTE and GTE respectively. The coding on the negatively stated items was reversed to ensure that high scores were indicative of high efficacy. Separate scores were also obtained for each level representing lecturer competency (level of importance, level of knowledge and level of performance) by averaging respondents' responses in the respective scales. High scores indicated high levels of competency. Next, a discrepancy analysis was carried out to identify competencies that needed to be enhanced through professional development programmes. Descriptive statistics were computed for all variables. Finally, Pearson product-moment correlation coefficients were computed to examine the relationship between lecturer efficacy and lecturer competency.

3. Results and discussion

The following tables present some descriptive statistics about the variables, highlights from the discrepancy analysis as well as the intercorrelation results. Table 1 presents the mean scores and standard deviations for both PTE and GTE. Findings indicated that the mean score for PTE was higher than GTE. This suggests that technical lecturers did believe in their personal capability as effective instructors, but such capability was still hindered by external factors beyond school control.

Table 1. Lecturer efficacy: mean scores and standard deviation

Lecturer efficacy	Mean	S.D.
PTE	3.833	0.358
GTE	2.742	0.350

Table 2 presents the mean scores for both professional and general competencies with respect to the level of importance, the level of knowledge and the level of performance on each competency. The results indicated that the mean scores for the level of importance for professional competency ($M = 4.34$) and general competency ($M = 4.05$) were high. This implied that technical lecturers perceived both professional and general competencies in the study to be important. The results also revealed that the mean score for professional competency was higher than general competency. Nevertheless, both professional and general competency indicated that the level of importance was the highest, followed by the level of knowledge and the level of performance. The results indicated that although technical lecturers were in agreement that both professional and general competencies were important, their level of knowledge and performance on these competencies were not on par. Thus further analysis was carried out to investigate total discrepancy among the three levels. A similar analysis was conducted by Simandjuntak (1984) in his studies on competencies of vocational and technical teachers.

Table 2. Lecturer competency: mean scores and standard deviations

Lecturer competency	Mean	S.D.
Professional competency		
Level of importance	4.34	0.41
Level of knowledge	3.96	0.51
Level of performance	3.89	0.50
General competency		
Level of importance	4.05	0.65
Level of knowledge	3.46	0.73
Level of performance	3.34	0.76

3.1 Discrepancy analysis

A discrepancy analysis was conducted for both professional and general competency. Table 3 presents highlights of the discrepancy analysis conducted (professional competency) where only five items are shown. All items are arranged according to the level of importance (I), level of knowledge (K) and level of performance (P). Knowledge discrepancy is the difference between group means of importance and group means of knowledge (I – K). Performance discrepancy is the difference between group means of importance and group means of performance (I – P). Total discrepancy is the sum of knowledge discrepancy and performance discrepancy of an item [(I – K) + (I – P)]. Table 3 shows that the total discrepancy for item 1 is 1.41, while the total discrepancy for item 2 is .66. The higher the total discrepancy of an item, the higher the priority for that competency to be enhanced through professional development programmes. Table 3 also shows that item 1, 4 and 5 have higher total discrepancy compared to item 2 and 3. Based on the 63 professional competencies and 38 general competencies in the study, findings indicated that 12 professional competencies and six general competencies were identified as competencies with the highest total discrepancy. The 12 competencies were related to the professional knowledge and skills aspect, as well as instructional planning, instructional implementation and instructional evaluation. The six general competencies were those related to the hearing, speaking and writing aspects.

3.2 Correlational analysis

The correlational analysis is reported in Table 4 to 7. The results in Table 4 indicated that there was a weak positive relationship between PTE and the level of knowledge on professional competency ($r = .37, P < .001$). There was also a weak positive relationship between PTE and the level of performance ($r = .23, P < .001$).

Similar relationship was reported between PTE and general competency (Table 5). There was a weak positive relationship between PTE and the level of knowledge ($r = .23, P < .001$) as well as PTE and the level of performance ($r = .24, P < .001$). However, there was no relationship between GTE and professional competency, as well as GTE and general competency (Table 6 and 7).

Variable	1	2	3
PTE	-		
Level of importance		-.05	
Level of knowledge			.37*
Level of performance			.23*

Table 4. Pearson product-moment correlations between PTE and professional competency
 Significant at $P < .001$

Variable	1	2	3
PTE	-		
Level of importance		-.37	
Level of knowledge			.23*
Level of performance			.24*

Table 5. Pearson product-moment correlations between PTE and general competency
 Significant at $P < 0.01$

Variable	1	2	3
GTE	-		
Level of importance		-.55	
Level of knowledge			.02
Level of performance			.01

Table 6. Pearson product-moment correlations between GTE and professional competency
 Significant at $P < 0.01$

Variable	1	2	3
GTE	-		
Level of importance		.02	
Level of knowledge			-.20
Level of performance			-.24

Table 7. Pearson product-moment correlations between GTE and general competency
 Significant at $P < 0.01$

Table 3. Discrepancy Analysis: level of importance, level of knowledge and level of performance on lecturer competency

Professional competency	Level of importance (I)	Level of knowledge (K)	Level of performance (P)	I – K	I – P	Total discrepancy (I – K) + (I – P)
1 Knowledge on module taught	4.62	3.89	3.94	0.73	0.68	1.41
2 Determine types of evaluation (no. of quiz, assignments, exams, etc.)	4.52	4.23	4.15	0.29	0.37	0.66
3 Deliver information on scope of learning	4.51	4.21	4.12	0.30	0.39	0.69
4 Update knowledge on instructional theory	4.51	3.95	3.95	0.56	0.56	1.12
5 Solve problems professionally	4.48	3.93	3.87	0.55	0.61	1.16

4. Conclusion

This study has identified the personal teaching efficacy and general teaching efficacy beliefs of polytechnic technical lecturers. First, the study showed that PTE was higher than GTE. This suggests that technical lecturers believed on their personal capabilities in teaching and were able to carry out the desired actions to ensure students' success. Nevertheless, these technical lecturers also felt that their capabilities were hindered by other factors beyond their control, such as the environment and parental interference. These findings were in agreement with findings reported by Gibson and Dembow (1984). Second, this study has also identified the level of importance, the level of knowledge and the level of performance on competencies of these lecturers. A discrepancy analysis was also conducted to determine competencies that could be enhanced through professional development programmes. This study also examined the relationship between lecturer efficacy and lecturer competency.

The results suggested the following aspects of interest. First, the study revealed both the professional and general competencies were considered important by technical lecturers. Thus all the 63 items representing professional competency validated findings by previous studies. Toglia (2004) and Kagaari (2007) reported similar results and were in agreement that these competencies were necessary and should be possessed by technical lecturers. Similarly, technical lecturers also perceived general competencies (English language competencies) to be important. Findings by Noraini et al. (2007) and Pandian (2004) also indicated similar results. Though all competencies were considered important by technical lecturers, finding revealed that competencies related to the English language were at a lower level than professional competencies.

Findings also revealed that although technical lecturers perceived that all competencies were important, their level of knowledge and performance on these competencies were not on par. A comparison on the level of importance, level of

knowledge and level of performance indicated that the mean score was highest for the level of importance, followed by the level of knowledge while the level of performance was the lowest. This implied that competencies that needed to be enhanced should be identified. Next, through a discrepancy analysis conducted, 12 professional competencies and six general competencies were identified as competencies that could be enhanced through professional development programmes.

The results also showed that there was a positive and significant relationship between lecturer efficacy and lecturer competency. This supported the findings by Trentham et. al (1985) who reported similar results. Specifically, personal teaching efficacy, rather than general teaching efficacy was related to the level of knowledge and the level of performance on lecturer competency. The findings suggest that efficacious technical lecturers were likely to have a higher level of knowledge on lecturer competency and were able to perform better. The study also implied that technical polytechnic lecturers were more likely to attribute success to their personal efforts and ability to deliver instruction effectively. Ghaith and Shaaban (1999) as well as Edwards et al. (1996) also found personal teaching efficacy to be reflective in teachers' personal ability by demonstrating good teaching performance.

Findings in this research implied that successful technical lecturers did not only rely on their knowledge and skills, but their traits and believes were also key factors to ensure effective teaching. Based on the premise that these lecturers are key agents of change, their traits and believes should be considered in the successful implementation of educational innovations. This study has examined the relationship between lecturer efficacy and lecturer competency. Findings indicated that technical lecturers with high personal teaching efficacy were able to cope with an educational innovation involving them to switch from Bahasa Melayu English language as a medium of instruction.

This supported other findings which indicated that those with high personal efficacy are more open to new ideas and are willing to go far to implement tasks within their responsibility (Guskey 1984; De Mesquita & Drake 1994).

This study provides the possibilities of exploring relevant professional development programmes which could help to enhance lecturer competency. Besides that, one of the most effective strategies to improve technical education is by improving lecturer preparation programmes both in quantity and quality. Competent technical lecturers can only be prepared by offering them an effective and realistic programme. This study provides some insights on the specific competencies that could be focused during lecturer preparation programmes. These prospective lecturers should be well trained to provide students with the knowledge and skills needed when entering the job market.

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