

1-1-2006

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EDU-COM 2006 International Conference. Engagement and Empowerment: New Opportunities for Growth in Higher Education, Edith Cowan University, Perth Western Australia, 22-24 November 2006.

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**Ketusiri, A., and Waugh, R. Ubon Ratchathani Rajabhat University, Thailand. Lecturer Receptivity to a Major Planned Educational Change at Rajabhat Universities in Thailand**

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Key words: major change, lecturers, receptivity, higher education, Rasch measurement

## ABSTRACT

Thailand passed the National Education Act (1999) which introduced the largest educational change there in over 50 years. This study investigated lecturer receptivity to that change at four Rajabhat Universities in the second year of the implementation stage during 2002. Lecturer receptivity was conceptualised as relating to nine aspects of the change. Data were collected by questionnaire (N=659) with 50 stem-items answered in three perspectives. These were (1) how I expect the change to be planned, (2) how I think the change was really implemented, and (3) what my actual behaviour was. Data were analysed with a Rasch measurement model. Eight of the nine aspects and 18 of the 50 stem-items fitted the measurement model. A good linear scale of receptivity was created where the proportion of observed variance considered true was 95% and data were considered to be valid and reliable. The easiest aspect was comparison with the previous system and the hardest was participation in decision-making. For most items, the perspectives were found to be ordered from easy (perspective 1) to hard (perspective 3) as conceptualised.

## INTRODUCTION

### **The Educational Change in Thailand**

More than 600 higher educational institutions are distributed throughout Thailand, and one category of them is the Rajabhat Institute (now called Rajabhat Universities). These institutions were controlled by ten government organisations and one private organisation (Office of the National Education Commission 1999a). In accordance with National Education Act of 1999, the administration and management systems in these higher educational institutions were changed to lead them into a new culture. One new cultural aspect is that all educational institutions providing education at degree level have become legal entities that are allowed to function with some academic freedom, within the central control of the Office of the National Education Commission. Each institution can develop its own administration and management system with some flexibility and academic freedom under the supervision of the institutional council empowered by its own Act (Office of the National Education Commission 2001). The 'new culture of learning' is concerned with three main aspects. They are (1) the learner as centre of learning; (2) the reform of the curriculum for basic education; and (3) a system of educational quality assurance (Office of the National Education Commission 1999b, pp. 218). As a result of the change, lecturers of Rajabhat Universities now have to teach in this new environment.

The change has profoundly influenced both the content and delivery system for Rajabhat Universities in Thailand. Lecturers at Rajabhats have revised their delivery and teaching procedures and the way in which they teach people to learn. This leads to the focus of this study,

lecturer receptivity to a major new policy change (in the context of planned change at Rajabhats in Thailand), that was theoretically, fully implemented, Thailand-wide, by 2002.

Higher education institutions in countries like Thailand are now concerned with teaching people to become responsible for their own learning, and with embracing new technologies as part of a global economy. Academics have long been accused of being remote from the concerns of society, and sometimes from their students (see Bell and Harrison 1998, Coaldrake and Stedman 1998). Academic expertise has been debated in Thailand around the concept of higher education autonomy, which basically means being able to conduct and implement one's own affairs, and be accountable for them. Higher education is partly autonomous in the sense that academics decide what they teach and research, how they will do it, and who will be admitted, but there are still some central controls, including money, quality and accountability.

On 1st July 1999, the Bill received final approval in principle from the House of Representatives. A period of one year and 11 months was devoted to its drafting. On August 14, His Majesty King Bhumibol Adulyadej, graciously granted His Royal assent for the promulgation of the National Education Act, B.E.2542 (1999), which was subsequently published on 19th August, 1999 in the Government Gazette and brought reform into effect in December the same year (Office of the National Education Commission 1999b). Consequently, the structure of the educational systems in Thailand were reformed, including primary education, secondary education, and higher education. The present study focuses on higher education and, in particular, Rajabhat Universities.

The Act aimed to stimulate higher education to lead the Thai people to develop their skills to be competitive with other countries. Higher education in Thailand was reformed in line with the National Education Act, with regard to: (1) adjusting the mission and function of higher education institutions in 'similar directions', (2) giving the chance of equality for learning in higher education to each part of society, (3) promoting academic standards and quality assurance so that higher education is acknowledged in local areas, country areas, and internationally, and (4) improving administration and management systems so that they are autonomous institutions, abreast of the time, and (5) mobilising all resources to ensure education is efficient and accountable (Office of the National Education Commission 1999c).

## LITERATURE ON CHANGE

The change has been implemented in two phases so far and this is consistent with some research on system-wide educational changes in centrally controlled systems. These are an initial planning stage (up to 1999) and then an implementation stage from 2000 onwards. Previous research on planned educational changes in centrally controlled systems, shows that, when the change is successful, it has a life cycle that can be divided into three stages: initiation, implementation and routinisation (Moroz and Waugh 2000, pp.159-178, Waugh 2000). Initiation refers to the processes and planning which lead up to and include the decision to proceed with the change. This may take from several months to many years. Implementation refers to the first use of the change on a system-wide basis in the organisation and may extend up to four years or more. Routinisation refers to whether the change becomes an ongoing part of the system.

The change literature in education and the social sciences dates back to at least 1940 and is voluminous. This literature involves numerous aspects such as administrative change, innovations, system-wide change, change with professional development, change in higher education, secondary education, primary education, the politics of change, variable affecting change, and many more. These are reported in refereed journals, in non-refereed journals, in government reports, and in various other publications. Much of the work on change is atheoretical and many of the conclusions and claims are open to challenge. It would be impossible to summarise all the findings and conclusions in this paper, but there are some good commentaries on system-wide change provided in Deem (2001), Doyon (2001), Tack (2001), Waugh (2000), Moroz and Waugh (2000), World Bank (1999), Salmi (1999), Collins and Waugh (1998), Addison (1995), Waugh and Godfrey (1995, 1993), Miller (1995), Conley (1991), Waugh and Punch (1987, 1985), McAtee and Punch (1979).

The change in Thailand was implemented in the year 2000 and data were collected at the end of 2001 and during 2002. It was assumed that receptivity to the change was coming to stability for many lecturers, and that it varied from lecturer-to-lecturer across the universities. This variation in receptivity was seen as being due to differences in the influence of nine aspects stated in the aims. These were selected from the change studies and change commentaries mentioned above.

It was expected, for example, that the higher the perceived benefit of the change, the higher would be the receptivity to the change and the lower the perceived benefit, the lower the receptivity. This is because lecturers who perceive personal benefits in the change (such as better conditions, more resources and so on) would develop better attitudes and behaviours in dealing with the change, and vice versa. As another example, lecturers who find parts of the change to be practical in their classrooms, and beneficial to student learning and interest, would develop better attitudes and behaviours in dealing with the change, and vice versa. These types of arguments can be applied to the influence of all nine aspects on receptivity.

## RASCH MEASUREMENT

The items for lecturer receptivity were designed from easy to hard in order to satisfy certain measurement conditions. The conditions are that lecturers with low measures will have a high probability of answering the easy items positively, and a low probability of answering the medium and hard items positively. Lecturers with medium measures will have a high probability of answering the easy and medium items positively, and a low probability of answering the hard items positively. Lecturers with high measures will have a high probability of answering the easy, medium and hard items positively. Fit to these conditions are tested with the RUMM computer program to create reliable scale.

Each item is represented by a number, estimated from the data by the RUMM computer program, that represents its difficulty. Lecturers with different measures have to agree on the difficulty of the items (such as easy, medium and hard). If the lecturers do not agree on an item difficulty, then this will be indicated by a poor fit to the measurement model, and then the item may be discarded as not belonging to a measure of lecturer receptivity.

Each lecturer is represented by a number, estimated from the data by the RUMM computer program that represents the lecturer measure. If different items do not produce agreement on a lecturer measure, then this will be indicated by a poor fit to the measurement model, and then one examines the lecturer response pattern (and the items).

Rasch measurement involves the use of a probability function that allows for some variation in answering items such that, for example, a lecturer with a high measure may give a low response to an easy item, sometimes, or a lecturer with a medium measure might get a hard item right, sometimes. The probability of answering correctly is related to the difference between the lecturer measure and the item difficulty. In situations where there is a large positive difference between the lecturer measure and item difficulty, then there is a strong probability of a correct response and, if there is a large negative difference, then there is a strong probability of an incorrect response.

The unit of Rasch measurement is the logit – the log odds of answering an item positively. It is interpreted in the same way as a unit of length on a ruler. A logit is the unit of lecturer receptivity and unit distances between logit numbers on the scale represent the same amount of receptivity (as shown in Figure 1).

## AIMS

The study aimed to investigate lecturer receptivity to a major, new educational policy change in the context of planned educational change at Rajabhats in Thailand. It aimed to create a linear scale of receptivity using a Rasch measurement model (Rasch 1960/1980), based on nine lecturer-change aspects: (1) attitude to the new system compared to the previous system, (2) practicality in the classroom, (3) alleviation of concerns, (4) learning about the change, (5) participation in decision-

making, (6) personal cost appraisal, (7) collaboration with other lecturers, (8) opportunities for lecturer improvement, and (9) perceived value for students, in the context of three perspectives: (1) How I expect the change to be planned, (2) How I think the change was really implemented, and (3) My actual behaviour to the change involved.

## THEORETICAL FRAMEWORK

A complete understanding of the receptivity of Thai lecturers to the major planned educational change in Thailand is likely to be complex. It will be difficult, and perhaps impossible, to understand fully the inter-relationships between all the aspects affecting receptivity for every lecturer at the Rajabhat Universities. However, it is possible to simplify these relationships by creating a theoretical model of receptivity in which only the expected most important and influential aspects are used. This simplified model can provide an understanding of the inter-relationships between the most important aspects, give direction to research in regard to the collection of data and provide guidelines for measuring receptivity.

The receptivity model developed for this study is proposed as a general model applying to any major educational change (in the context of planned change controlled by a central body), in its implementation stage. The model involves the nine aspects as well as the three perspectives, previously stated. When the receptivity model is applied to the specific case of the change at Rajabhat Universities in Thailand, the model can be tested.

### Model of Receptivity Formation

Lecturer receptivity is conceptualised as composed of nine aspects influencing receptivity. They are: (1) attitude to the change compared to the previous system, (2) practicality in the classroom, (3) alleviation of concerns, (4) learning about the change, (5) participation in decision-making, (6) personal cost appraisal, (7) collaboration with other lecturers, (8) opportunities for lecturer improvement, and (9) perceived value for students. For each aspect, lecturers will have developed expectations that will, in part, influence their behaviours, and their receptivity to the change.

Lecturers will form a view of how they expect the change to be implemented in relation to each of the receptivity aspects. Then, they come up against the evaluation and judgment of how the change is really implemented. The lecturers see how the change is actually implemented at Rajabhats, and they talk to other Rajabhat staff, and receive feedback about ideas, understanding, expectations, strengths and weakness for the change. The lecturers compare their views to those of others. They then behave in certain ways involving the implementation of aspects of the change. That is, their implementation behaviour is related to the interaction between their expectations of how the change is planned and the provisions for its implementation, using evidence from what they see and read, and what others say.

Lecturers may alter their ideal view of the planned change, and their behaviour towards the change. There will be an interaction between their views of how they expect the change to be planned, how the change is actually implemented and their actual behaviour towards the change, in regard to the nine aspects of receptivity. This may be a simplified view of what is probably a complicated process that may vary between lecturers, but it is intended to capture some of the main 'flavours' and interactions in lecturers' receptivity to the planned system-wide change.

When the change is well planned and implemented, it is expected that lecturers will find it easy to hold positive views about how they expect the change to be implemented for all their teaching classes, and how they think the change was really implemented for all lecturers at the Rajabhats. In contrast, when the change is not well planned and implemented, it is expected that the lecturers will not find it easy to hold positive views about how they expect that the change to be planned for all lecturers at the Rajabhats, much harder to hold positive views about how they think the change was really implemented for all at Rajabhats, and harder even still to be behave positively towards the change at Rajabhats.

In the terms of the main aspects of lecturer receptivity, when the change is not well planned and implemented, it is expected that lecturers will find it difficult to hold positive views about one or more of the aspects. This will lead to them finding it hard to behave positively to the change. They may talk and act against the change because they think that it is not as good as the previous system it replaced, it is not practical in the classroom, their concerns are not alleviated, they are not learning about the change, they are not participating in decision-making, there is a high personal cost to implement the change, it is difficult to collaborate with other lecturers, there are few opportunities for lecturer improvement, or there is little perceived value for students. However, in direct contrast, when the change is well planned and implemented (in the view of the lecturers), and they have positive views about each of the aspects of the change, they will be more likely to behave positively towards the change, and have positive views and behaviours in relation to each of the nine aspects. The questionnaire was designed to be consistent with this model of receptivity to the change.

## METHODOLOGY

The voluntary sample of 659 was taken from 952 lecturers from four Rajabhat Universities in the north-eastern region of Thailand during the academic year 2001-2002. Females represented 45.6 percent and males 54.4 percent. Associate Professors represented 2.9 percent, Assistant Professors 39.4 percent, and lecturers 57.7 percent. In regard to highest qualifications, 6.2 percent had a doctorate, 68.5 percent a master's degree, and 25.3 percent a bachelor's degree.

## DATA ANALYSIS

The model behind the questionnaire was tested by analysing the data with a Rasch computer program, Rasch Unidimensional Measurement Models (RUMM) (Andrich, Sheridan, Lyne & Luo, 2000).

Initial Rasch Analysis with 150 items (50x3 perspectives)

Initial analysis with the RUMM program tested the 150 items (50 items answered in three perspectives) in order to try to create a linear scale of lecturer receptivity. The non-performing items (96 items out of 150) were deleted from the scale, leaving 54 items that fitted the measurement model, creating a linear scale of receptivity.

## RESULTS OF FINAL ANALYSIS (WITH 54 ITEMS)

Data from the final 54 items of the questionnaire had a good fit to the measurement model (see Table 1). The Index of Lecturer Separability (akin to traditional reliability) for the 54 item scale is 0.95. This means that the proportion of observed variance considered true is 95 % and that the measures are well separated compared to the (smaller) errors of measurement. The response categories were answered consistently and logically, as shown by the ordering of the thresholds (produced by the computer program, but not shown here). Thresholds are points between adjacent response categories where the odds are 1:1 of answering in either category. When there are four response categories, there are three thresholds, as was the case in the present study. The items are well targeted against the receptivity measures (from the threshold graph produced by the computer program, but not reported here). That is, the range of item thresholds match the range of receptivity measures of the lecturers on the same scale. The item threshold values range from -2.8 logits (standard error 0.06) to + 2.6 logits (SE 0.06) and the lecturer measures range from -2.8 logits to +4.2 logits. There are only eight lecturers whose receptivity measures are more than +2.6 logits and hence not 'matched' against an item threshold on the scale. Taken together, these results indicate that a good measurement scale of receptivity has been created, that the data are reliable and consistent, that the errors are small in relation to the measures, and that the power of the tests-of-fit are excellent.



Table 1  
Global fit statistics for Lecturer Receptivity Scale (N=659, I=54)

	Items	Lecturers
Location mean	0.00	0.27
Standard deviation	0.34	0.94
Fit statistic mean	-0.08	-0.88
Standard deviation	0.88	3.16

Notes on Table 1

1. The item means are constrained to zero by the measurement model.
2. When the data fit the model, the fit statistics approximate a distribution with a mean near zero and a standard deviation near one. The item-fit data are an excellent fit to the measurement model. Lecturer fit data, while acceptable, are not as good as could be.

Equal differences on the scale (see Figure 1) between the measures of Lecturer Receptivity represent equal differences in item difficulty. However, there is no true zero point of item difficulty, or Lecturer Receptivity, and the scale is thus at the interval level. The 54 items of the scale are ordered from easy to hard. Nearly all lecturers answered the easy items positively (such as comparison with the previous system from perspective 1). As the item difficulties become positively higher on the scale, the lecturers need a corresponding higher receptivity measure to answer them positively. The hardest items are only answered positively by lecturers who have high receptivity measures (such as participation from perspective 3). Lecturers with low measures of Lecturer Receptivity cannot answer the difficult items positively.

Table 2 below shows the mean difficulties of items that fitted the measurement model for each aspect and ordered from easiest to hardest. For example, the aspect of comparison with the previous system is the easiest aspect (for the expectation perspective, the mean score is -0.75, for the implementation perspective, the mean score is -0.08, and for the behaviour perspective, the mean score is -0.04). In contrast, the aspect of participation in decision-making is the hardest aspect (for the expectation perspective, the mean score is -0.17, for the implementation perspective, the mean score is +0.51, and for the behaviour perspective, the mean score is +0.53).





Notes on figure 1

1. The scale is in logits, the log odds of answering positively.
2. Measures of receptivity are calibrated on the same scale as the item difficulties.
3. Measures are ordered from low to high on the LHS and mean item difficulties are ordered easy to hard on the RHS. Each X represents 4 lecturers.
4. Items at the easy end of the scale are answered positively by most lecturers. As the items become harder, lecturers need a higher receptivity to answer the items positively.
5. The mean item measures are given in Table 3. P1 means perspective 1, P2 means perspective 2 and P3 means perspective 3, as in Table 2.

Table 2

Mean item difficulty by aspect and perspective from easiest to hardest

Aspect	Mean score (by perspective)		
	Expectation	Implementation	Behaviours
Comparison with previous system	-0.75	-0.08	-0.04
Perceived value for students	-0.51	-0.15	-0.12
Practicality in the classroom	-0.48	+0.02	+0.08
Collaboration with other lecturers	-0.34	+0.16	+0.21
Learning about the change	-0.43	+0.19	+0.32
Alleviation of concerns	-0.19	+0.28	+0.35
Personal cost appraisal	-0.18	+0.36	+0.39
Participation in decision-making	-0.17	+0.51	+0.53

Note:

1. The scores are the mean of the item difficulties in logits for the items that fit the measurement model and belong to the aspect indicated.
2. Negative values indicate the means are low on the scale (or easier). Positive values indicate that the means are high on the scale (or harder).
3. Mean scores are reported to 2 decimal places because errors are about 0.07.

### Comparison with the Previous System

The perception of most Rajabhat lecturers was that they found it easy to agree that the new educational system was better than the previous system (mean difficulty -0.75). It was harder (but still easy) for Rajabhat lecturers to say that the change was actually implemented to achieve this (mean difficulty -0.08) and that their actual behaviour to the change was better than the previous system (mean difficulty -0.04). This means that the implementation of the change and lecturers' actual behaviour towards the change was harder than their expectations, as conceptualised.

### Perceived value for Students

The perception of most Rajabhat lecturers was that they found it easy to agree that they expected the new educational system to provide better value for student learning (mean difficulty is -0.51). It was harder (but still easy) for Rajabhat lecturers to say that the change was actually implemented to provide for good student learning (mean difficulty is -0.15) and that their actual behaviour to the change involved providing for good student learning (mean difficulty is -0.12).

### Practicality in the Classroom

The perception of most Rajabhat lecturers was that they found it easy to agree that the new educational system was expected to be practical in the classroom (mean difficulty is -0.48). It was harder (but still easy) for Rajabhat lecturers to say that the change was actually implemented to be practical (mean difficulty -0.15) and that their actual behaviour to the change made it practical (mean difficulty -0.12). This means that the implementation of the change and lecturers' actual behaviour towards the change, in terms of its practicality, was harder than their expectations, as conceptualised.

### **Collaboration with Other Lecturers**

The perception of most Rajabhat lecturers was that they found it easy to agree that they expected the new educational system involved them collaborating with other lecturers at their Rajabhats when they needed help to implement the change (mean difficulty is -0.34). It was harder to say that the change was actually implemented to allow them to be involved in collaborating with other lecturers when they needed help to implement the change (mean difficulty is +0.16) and to say that their behaviour involved actually collaborating with other lecturers (mean difficulty is +0.21).

### **Learning about the Change**

The perception of most Rajabhat lecturers was that they found it easy to agree that they expected that information would be provided about how best to implement the new educational system (mean difficulty is -0.43). It was harder for Rajabhat lecturers to say that they were actually provided with information about how best to implement the change (mean difficulty is +0.19) and harder still to say that their actual behaviour to the change involved learning about how to best implement the change (mean difficulty is +0.32).

### **Alleviation of Concerns**

The perception of most Rajabhat lecturers was that they found it easy to agree that they expected that their concerns would be alleviated (mean difficulty is -0.19). It was harder for Rajabhat lecturers to say that the change was actually implemented to alleviate their concerns (mean difficulty +0.28) and that their actual behaviour to the change involved alleviating concerns (mean difficulty +0.35).

### **Personal Cost Appraisal**

The perception of most Rajabhat lecturers was that they found it easy to agree that they expected the new educational system to increase their satisfaction (non-monetary cost benefit) with teaching (mean difficulty is -0.18). It was harder to say that the change was actually implemented to increase their satisfaction with teaching (mean difficulty is +0.36) and to say that their actual behaviour to the change involved increased satisfaction with their teaching (mean difficulty is +0.39).

### **Participation in Decision-Making**

The perception of most Rajabhat lecturers was that they found it easy to agree that they expected the new educational system was planned to involve them in participating in Rajabhat decisions related to implementing the change (mean difficulty is -0.17). It was harder to say that the change was actually implemented to allow them to participate in Rajabhat decisions related to implementing the change (mean difficulty is +0.51) and that their actual behaviour to the change involved them in participating in Rajabhat decisions that related to implementing the change (mean difficulty is +0.53).

Table 3 Item difficulties by item by perspective (N=660, I=54)

Item No.	Item Wording	Item Difficulties by Perspective		
		Expectation	Implementation	Behaviour
<b>Comparison with the Previous System</b>				
1-3	Providing for the needs of students better than the previous system.	-0.85	-0.21	-0.07
4-6	Providing for better classroom management than the previous system.	-0.65	0.05	0.00
<b>Practicality in the classroom</b>				
7-9	Providing sufficient flexibility in the changes to suit the needs of different students.	-0.64	0.05	0.09
10-12	Providing sufficient resources to allow me to implement the changes in my classroom.	-0.32	-0.02	0.06
<b>Alleviation of Concerns</b>				
13-15	Contributing to regular Rajabhat meetings at which I can raise my concerns about the change.	-0.18	0.31	0.26
16-18	Being able to solve quickly any classroom problems in implementing the changes at my Rajabhat.	-0.14	0.40	0.57
19-21	Providing for specific concerns of lecturers to be raised with the Rajabhat administration and staff.	-0.24	0.08	0.20
22-24	Having the principal supporting the change at my Rajabhat in practical ways.	-0.20	0.30	0.37
<b>Learning about the Change</b>				
25-27	Providing how to learn best about implementing the change.	-0.52	0.18	0.35
28-30	Providing information on adapting the change to the classroom.	-0.55	0.17	0.23
31-33	Providing information about the most important issues relating to the change.	-0.44	0.09	0.32
34-36	Providing for the Rajabhat staff and management to discuss the change.	-0.20	0.30	0.35
<b>Participation in Decision-making</b>				
37-39	Participating in Rajabhat decisions that are related to implementing the changes.	-0.16	0.50	0.53

Personal Cost Appraisal				
40-42	Increasing my satisfaction with teaching which outweighs the extra work generated for me.	-0.20	0.30	0.39
43-45	Keeping the emotional strain of the change for lecturers to a minimum.	-0.15	0.41	0.38
Collaboration with Other Lecturers				
46-48	Giving support to other lecturers at my Rajabhat when they need it to implement the change.	-0.33	0.15	0.20
Perceived Value for Students				
49-51	Providing value for my students.	-0.52	-0.25	-0.15
52-54	Providing for good student learning.	-0.50	-0.05	-0.23

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## IMPLICATIONS

### For Administrators

There are implications for administrators flowing from this measurement of receptivity. The results show that the lecturers found it easy to believe that the change was implemented, (1) to provide value for the students, (2) to be a better system than the one it replaced, (3) to be practical in the classroom and moderately easy to believe that (4) the change was implemented to help lecturers collaborate when they had problems with the change. The implication is that the change administrators planned and implemented these aspects satisfactorily and that lecturers had good receptivity to these aspects.

In contrast, the lecturers found it hard (or moderately hard) to say that the change was implemented, (1) to allow lecturers to participate in decision-making about the change at their Rajabhat Universities, (2) to provide value that outweighs the extra work for them, (3) to alleviate their concerns about the change, and (4) to help lecturers learn about aspects of the change relatively easily. The implication is that the change administrators could improve implementation of these four aspects of the change for the lecturers. For example, the administrators could hold meetings at the Rajabhat Universities where lecturers could voice their concerns about various aspects of the change and have their questions answered, or at least have some promises that their concerns will be investigated in the near future. These extra meetings could also have the advantage of helping lecturers learn about the change and allow them to participate in decisions about the change, if there were several held over the course of an academic year.

### For Lecturers

There are implications for lecturers flowing from this measurement of receptivity, too. The results show that lecturers found it easy to say that their own behaviour involved, (1) providing value for their students, (2) providing something better for their students than they did in the previous system, and (3) implementing the change in their classrooms in a practical way. The implication is that lecturers believed that they implemented these aspects of the change well.

In contrast, the lecturers found it hard to say that their behaviour, (1) involved participating in decisions about the change at their Rajabhat Universities, (2) involved providing value that outweighed the extra work for them, (3) involved alleviating their concerns about the change, and (4) involved them learning a lot about the change at their Rajabhat Universities. The implication is that the lecturers have to do more themselves to improve their implementation of the change in these aspects and that the change administrators could try to help the lecturers more in these four aspects. As in all cases of major, educationally change, implementation is a 'two-way street'; that is, a successful change involves good work and good will by both the change administrators and by the lecturers (and others) who actually implement the change in the classrooms.

## For Future Research

The questionnaire can be improved with, for example, alternative wording for some items, to improve fit to the measurement model. Some of the items may fit the measurement model better with small changes to their meaning. No items for the aspect, Opportunities for Lecturer Improvement, did fitted the measurement model and these items should be revised in any further use of the questionnaire. Furthermore, items relating to other aspects such as availability of appropriate resources and in-service training could be added.

Mixed-method research could be employed, too, so that issues flowing out of the Rasch measures could be investigated through, for example, focus group interviews. The Rasch measurement analysis can show which items are easy and which are hard, and a focus group interview could then investigate why particular items are seen to be easy and why other items are seen to be hard. Answers to such questions can be helpful to administrators who have to manage the system-wide change across many Rajabhat Universities.

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