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EXPLORING THE PREDICTOR OF INNOVATIVE TEACHING USING THE JOB DEMANDS-RESOURCES MODEL

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Abstract. *Introduction*. To keep in pace and remain competitive in today's environment, the lecturer must do innovation in educational process. However, encouraging lecturers' willingness to do innovative teaching is challenging in higher education due to the dual roles as teachers and researchers, which makes the excessive workload and leads to the teacher-researcher role conflict (TRC). Therefore, it is crucial to analyse the impact of TRC on the innovative teaching of lecturers. The present study utilises the job demands-resources (JDR) model due to its high popularity but rarely used in higher education.

Aim. This study is *aimed* to explore the predictor of innovative teaching by utilising the JDR model as a theoretical anchor.

Methodology and research methods. This study uses structural equation modelling (SEM) to examine the research model on a random sample of 233 respondents.

Results. The results indicated that teacher-researcher role conflict negatively predicted the innovative teaching of the lecturer. Besides, the occupational well-being is a mediating variable to explain the influence of teacher-researcher role conflict on innovative teaching.

Scientific novelty. This study reveals innovative teaching predictors in higher education by using the JDR model as a theoretical anchor. The authors found out that teacher-researcher role conflict (TRC) was significantly related to innovative teaching. The high-level expression of TRC will reduce the lecturer's innovative behaviour on teaching activity, and vice versa.

Practical significance. The current study provides critical insight into the related stakeholders, such as the universities and related ministries, regarding the negative predictor of innovative teaching. They should discover approaches to reduce the negative effect of TRC on the innovation behaviour of lecturer teaching activity and to address the problem of job role conflict.

Keywords: teacher-researcher role conflict, occupational well-being, innovative teaching, job demands-resources model.

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ИЗУЧЕНИЕ ПРЕДИКТОРА ИННОВАЦИОННОГО ОБУЧЕНИЯ С ИСПОЛЬЗОВАНИЕМ МОДЕЛИ РАБОЧИХ ТРЕБОВАНИЙ И РЕСУРСОВ

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Аннотация. *Введение.* Чтобы идти в ногу со временем и оставаться конкурентоспособным в сегодняшних условиях, педагог должен вводить новшества в образовательный процесс. Тем не менее поощрение готовности лекторов к инновационному обучению в сфере высшего образования является сложной задачей из-за двойной роли преподавателей и исследователей, что создает чрезмерную рабочую нагрузку и приводит к ролевому конфликту «преподаватель – исследователь» (TRC). Поэтому очень важно проанализировать влияние TRC на инновационное обучение педагогов. В данной работе используется модель рабочих требований и ресурсов (JDR) ввиду ее высокой популярности, но редкого применения в высшем образовании.

Цель настоящего исследования – изучить предиктор инновационного обучения с использованием модели JDR в качестве теоретической основы исследования.

Методология и методы исследования. В данной работе используется моделирование структурных уравнений (SEM) для изучения модели исследования на случайной выборке из 233 респондентов.

Результаты. Результаты показали, что ролевой конфликт «преподаватель – исследователь» отрицательно сказался на новаторском обучении педагогов. Кроме того, профессиональное благополучие является опосредованной переменной, объясняющей влияние TRC на инновационное обучение преподавателей.

Научная новизна. В данном исследовании выявлены инновационные предикторы преподавания в сфере высшего образования с использованием модели JDR в качестве теоретической основы. Авторы обнаружили, что TRC в значительной степени связан с инновационным обучением педагогов. Сильное проявление данного ролевого конфликта снизит новаторское поведение преподавателя в учебной деятельности, и наоборот.

Практическая значимость. Настоящее исследование дает критическое представление о заинтересованных сторонах, таких как университеты и соответствующие министерства и ведомства, относительно негативного фактора инновационного обучения. Им следует найти подходы к снижению негативного влияния TRC на инновационное поведение преподавателей и решить проблему конфликта ролей.

Ключевые слова: ролевой конфликт «преподаватель – исследователь», профессиональное благополучие, инновационное обучение, модель рабочих требований и ресурсов.

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Introduction

The rise of science and technology encourages the lecturer to adapt to the current condition. It is prompt the lecturer to improve their teaching skill [1]. The essential teaching skill for a higher education lecturer is innovative teaching [2]. Innovative teaching is crucial to the teacher and is a major concern in several studies across various disciplines. Besides, current technology developments are changing the learning process; thus, the old teaching methods may no longer effective [3]. Innovative teaching is the teacher's willingness to seek out different strategies, methods, approaches, and criteria of evaluation in teaching practice [4].

Some literature agrees and recognises that innovative teaching is crucial to prepare creative and future professionals [4], keep students' attention, and encourage class engagement [2]. However, encouraging lecturers' willingness to do innovative teaching is challenging in higher education due to the high demands

of research activities [5]. Being a higher education teacher means being prepared to perform two roles simultaneously, as a teacher and a researcher. Teaching and research are unseparated and reciprocal activities to keep pace with the current science development [6], but teaching and research are different activities. Teaching refers to the student's learning activity, and research is a creative activity to increase human knowledge, such as building, developing, and examining theories [7]. So, it is unavoidable for lecturers to run into conflict in the roles. The role conflicts generate a sense of stress, dissatisfaction, and uncertainty.

Moreover, conducting teaching and research simultaneously leads the lecturers to the excessive workload. The excessive workload experienced by lecturers due to dual role demands, as a teacher and researcher, ultimately leads them to teacher-researcher role conflict (TRC). TRC is a concept where a teacher or lecturer feels those teaching activities are not fit and disturb the research activities [2]. Some literature recognises that lecturers feel burdened working as both teacher and researcher, due to drain of time and energy either physically or psychologically [7, 8], and hard to conduct well in both roles [7].

TRC is one of the specific forms of job demands [2]. In the job demands-resources model (JDR model), job demands related to "those physical, social, or organisational aspects of the job that require sustained physical or mental health and are therefore associated with certain physiological and psychological cost" [9]. This study applies the JDR model as a theoretical basis due to the cross-cultural validity, flexibility, and can be adapted to the different fields of science [10]. Hence, it is appropriate to guide our study to examine the relationship between TRC and innovative teaching and the variables that mediate the relationship between the two, occupational well-being.

Previous studies had some limitations in applying the JDR model. First, the previous research mostly examines partial relationships (direct relationships) in a study, not complex models. Second, the JDR model rarely was used in the context of higher education, except three: Mudrak, Zabrodska [11], Torp, Lysfjord [12], and Xu [7]. The first one ignores the mediated relationship in the JDR model, and the last two only see it as variable antecedents and consequences. The present study tries to accommodate the gap by applying the JDR model in examining the relationship between TRC and innovative teaching by using occupational well-being as a mediating variable in a single study.

Literature Review

1. Job demands-resources model

There are several approaches in research related to stress, such as the job demands control model (DCM), the transactional model of stress and coping, the effort-reward imbalance model (ERI), the job characteristics model (JCM), and

the job demands-resources model (JDR) [13]. The latest one, the JDR model, get high popularity among the researchers in the past decade due to the cross-cultural validity and flexibility [10].

In the JDR model [9, 14], there is an assumption that each job may have its specific risks related to work stress. The risks are divided into two categories, job demands and job resources. Job demands refer to "those physical, social, or organisational aspects of the job that require sustained physical or mental health and are therefore associated with certain physiological and psychological costs" [14]. Job demands will trigger job stress if the workers need to set great effort to meet the expectations [2]. Job resources indicate to "those physical, psychological, social, or organisational aspects of the job that are functional in achieving work goals, reduce job demands and the associated physiological and psychological costs, or stimulate personal growth, learning, and development" [14]. So, job resources are utilised to minimise job demands as well as crucial for their advantages.

Based on the JDR model, there are two diverse psychological processes [14]. First, the health impairment process, where excessive job demands drain employees' mental and physic, leads to a health problem. Second, motivational in nature, where job resources are positively related to work performance. These processes ultimately predict organisational outcomes [13]. Therefore, job resources lessen the effect of job demands and have the motivational potential for employees to give high performance.

2. Teacher-researcher role conflict as the predictor

TRC is a concept where a teacher or lecturer feels that teaching activities are not fit and disturb their research work [2]. The role conflict is the consequence of the teacher in higher education or known as a lecturer. Being a lecturer means ready to conduct the dual role professions as a teacher and a researcher. On the one hand, the dual roles are the demands of the lecturer profession. It gives a great benefit to teaching and keeps pace with science development [6, 15]. On the other hand, the dual roles lead to excessive workload due to lack of time and energy [7]. The previous studies show that lecturers feel burdened, working as both a teacher and a researcher due to drain of time and energy either physically or psychologically [7, 8], and hard to conduct well in both roles [7].

Some literature indicates it is hard for the lecturer to work well in the two roles. The scarcity model [16] revealed too many roles or tasks in a job lead someone to the high possibility of role conflict because of a lack of energy and time. It has led to focuses on one role and less attention to the others as a consequence. In line with, the divergent rewards model [17] found that research and teaching activities have a different distinctive reward, then drive the employee to focus more on the activity or role that gives the higher return. It means there is a role or

task that will be neglect as a consequence. In the personality model [18], teaching and research are jobs with different characteristics; thus, they require different characters. Researchers need a lot of time of less distraction to focus, and it will help to work alone. At the same time, teachers have to communicate and interact with students. It has led to a high possibility of being more distracted.

In summary, it is tough for lecturers to be good in both roles due to high job demands. Consequently, they tend to focus on one role and neglect to the other (role conflict). As discussed before, the teacher and researcher roles are essential for a lecturer. Hence, if the lecturers only focus on one role and less the others, it will negatively affect teaching performance (teaching innovation).

Based on previous studies and the literature, we assume that TRC is negatively related to innovative teaching. The dual roles, which lecturers must carry out, lead to the excessive workload because they focus not only on teaching, but also on research activity. Conducting the dual roles drain the time and energy of lecturers, consequently lack time to think and make some creative for the teaching activity. If the lecturer loses space and time to think, they will be less innovative. Supporting this assumption, previous studies revealed that the role conflict is negatively related to employee innovative work behaviours [19-21]. Further, the increased workload will decrease the innovation potential of employees [22].

Furthermore, according to the JDR model [9], the high job demands will drain the energy and strain that caused stress to the employee. Then, it has a negative impact on occupational well-being. Previous studies show that job demands highly related to well-being [23-27]. The high job demands also trigger job stress if the workers need to set great effort to meet the expectations [2]. These studies supported our assumption related to the link of TRC to innovative teaching and occupational well-being.

3. Occupational well-being as the mediator

The occupational well-being of teachers refers to the optimum condition of psychological and work experience [28]. It is indicated from the presence of job satisfaction and work enthusiasm, also the absence of stress and emotional exhaustion in the teaching activity [29-31]. We concentrate on emotional exhaustion and work enthusiasm to accommodate the positive and negative dimensions of occupational well-being.

Emotional exhaustion points toward the stress dimension of burnout, including the feeling of strain, chronic fatigue, and the decrease of emotional resources [32, 33]. Moreover, emotional exhaustion prevents the employees from innovative behaviours [2], and impedes the teachers in making a challenging and new learning condition [34]. It may hold the teachers from creating innovative instruction that requires the capacity to prepare complex thoughts.

We first assume that emotional exhaustion plays a mediating variable between TRC and innovative teaching. Supporting this assumption, previous studies found that emotional exhaustion of employees mediates the effect of job demands (time pressure, discipline problems, and role conflict) to the job performance [33, 35]. As discussed above, TRC is a form of job demands [2]. The high job demands will drain time and energy, raise the strain, and increase emotional exhaustion. In the end, it will refrain the teacher from creating teaching innovation.

Furthermore, work enthusiasm is related to the feeling of excitement, enjoyment, and pleasure regarding the teaching activity as a teacher [36]. These elements are essential things for teacher to create quality instruction [26, 34]. Hence, high work enthusiasm leads teachers to more engagement and good performance, including innovative teaching.

Thus, we also assume that work enthusiasm mediates the relationship of TRC to innovative teaching. Our assumption was deducting from the previous studies. As we know, TRC is a form of job demands, and the previous studies showing that job demands reduce work enthusiasm [29, 30, 34], and work enthusiasm also been noted to increase teacher work performance [37]. The others also found that work engagement, which indicates work enthusiasm, mediates the link between job demands and job outcomes [38].

Based on the literature and previous studies as discussed, we hypothesise as follows:

H1. TRC negatively influence on innovative teaching.

H2. Emotional exhaustion mediates the relationship between TRC and innovative teaching.

H3. Work enthusiasm mediates the relationship between TRC and innovative teaching.

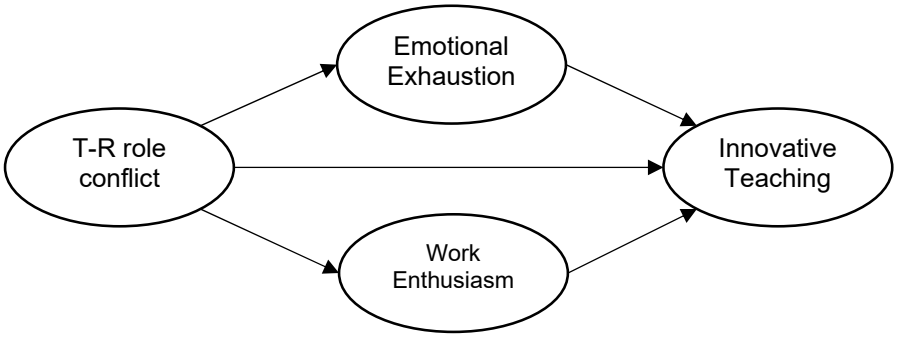

Fig. 1. Research model

Method

1. Sample

The survey was conducted randomly on 250 lecturers from nineteen universities in major cities in Indonesia. Among the selected sample, 17 were dropped because it does not meet the sample requirements, conducting teaching and research activities for at least the last three years.

2. Instruments

We adapted five items (e.g., "the demands of my teaching interfere with my research", "due to teach-related duties, I have to make changes to my plans for research activities") from the work-family conflict scale [39] to measure the TRC. We also adopting four items (e.g., "I sometimes feel really used up at the end of a school day", "I often notice how listless I am at school") from Maslach Burnout Inventory – Educators Survey (MBI-ES) [40] to measure emotional exhaustion and six items (e.g. "teaching is fun for me", "I really enjoy teaching") from Aldrup, Klusmann [29] and Kunter, Tsai [36] to measure work enthusiasm. Last, we utilised six items (e.g., "I like to try out new teaching methods", "In my work, I often come up with ideas") of innovative behaviours from de Jong and Kemp [41] to measure innovative teaching.

3. Data Analysis

We used structural equation modeling (SEM) in WarpPLS 6.0 to examine the research model. First, we tested the outer model, related to the validity and reliability, and the inner model, related to the goodness of fit. The outer test shows all instruments of the present study are valid (loading factors >0.7) and reliable (alpha Cronbach >0.8) [42-44]. Furthermore, the inner model test shows all indicators of research model fit are fit (APC < .001; ARS < .001, AVIF = 1.249, GoF = .381) [44].

Results and Discussion

1. Results

Respondents characteristic in this study (Table 1) show that the majority were male (56%) and female (44%). 83% of respondents hold a master's degree and a doctor's degree is for the rest 17%.

Table 2 shows us the mean, deviation, and correlation among the variable of this study. The result shows TRC significantly related to EE, WE, and IT, while EE did not relate to WE.

Table 1

Respondents characteristics (N = 233)

Respondents characteristics		∑	**%**
Gender	Male	131	56%
	Female	102	44%
Educational background	Master	193	83%
	Doctor	40	17%

Table 2

Mean, standard deviations and correlation among variables (N = 233)

Construct	**Items**	**Mean**	**Std. Dev**	**TRC**	**EE**	**WE**	**IT**
TRC	5	4.81	1.35	-			
EE	4	4.67	1.24	.427**	-		
WE	6	4.62	0.41	-.164**	-.112	-	
IT	6	4.62	1.16	-.512**	-.550**	.161*	-

Note: *p < 0.05; **p < 0.01; TRC = teacher-researcher role conflict, EE = emotional exhaustion, WE = work enthusiasm, IT = innovative teaching

The analysis was run using WarpPLS to examine all paths in the research model (fig. 1) simultaneously. The result (fig. 2) shows us that TRC has a positive effect on EE (β=.47, p<.01) and a negative impact on WE (β=-.17, p<.01). Meanwhile, EE has a negative effect on IT (β=-.38, p<.01), and WE has a positive effect on IT (β=.08, p<.05). Furthermore, TRC has a negative effect on IT (β=-.35, p<.01) directly. Hence, H1 received support.

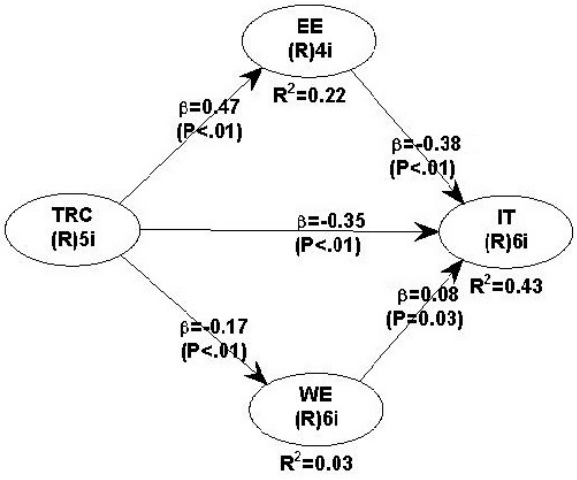

Fig 2. Relationship between variables

The result of the mediation effect testing (Table 3) shows all the paths were significant (p<.05). It indicated occupational well-being (seen from emotional exhaustion and work enthusiasm) is a variable that mediates the relationship between teacher-researcher role conflict and innovative teaching [45]. Moreover, when we are multiplying the path coefficients of both first mediation [(TRC→EE) * (EE→IT) * (TRC→IT)] and second mediation [(TRC→WE) * (WE→IT) * (TRC→IT)], the signs are positive. It indicates the types of mediations are complementary mediation [45]. Thus, both H2 and H3 were supported.

Table 3

The total effect, indirect effects, and direct effect (standardised coeff.)

TRC	**IT**		
	β	SE	P values
Total effect	-0.5422	0.06	.000
Total indirect effects	-0.1922	0.003	.000
Specific indirect effects			
via EE	-0.1786	0.003	.000
via WE	-0.0136	0.003	.004
Direct effect	-0.35	0.06	.000

2. General Discussion

The result (Fig. 2) shows us that the teacher-researcher role conflict positively affects emotional exhaustion and a negative effect on work enthusiasm. As predicted in the theoretical framework, TRC will raise emotional exhaustion and reduce lecturers' work enthusiasm. It has caused the lecturer's great effort to fulfill the job demands (teaching and research) will drain time and energy and be a trigger for job stress. So, the TRC has a negative effect on innovative teaching.

These findings support the JDR model, which states job demands are related to the psychological condition [9, 14]. As a teacher and researcher, the dual roles make lecturers focus on teaching and research activity simultaneously. The dual roles lead to excessive workload, drain time, and energy. Consequently, they lack time and space to think and make some creative for the teaching activity. Thus, they will be less innovative in teaching. This is in line with the findings of previous studies. Role conflict has a negative effect on employees' innovative behaviour [19–22].

The present finding also in line with the previous literature, such as the scarcity model [16], the personality model [18], and the divergent reward model [17]. A lecturer's demands to conduct dual roles simultaneously lead to a high workload and drains time and energy. As a consequence, they will more easily get role conflict (scarcity model). Besides, each job has a unique character that

requires a unique personality according to the personality model. Teaching and research also have different characteristics. Researchers need a lot of time of less distraction to focus, and it will be helpful to working alone. On the other hand, the teachers have to communicate and interact with students and have a high possibility to be more distracted. Thus, it is hard for the lecturer to be good in two different roles.

Moreover, teaching and research activity also provides different reward schemes. These will lead the lecturer to choose and focus on the role, which is more appropriate with their personality, give them more rewards, and be less attentive to the other roles. In other words, a lecturer who gets role conflict may give high priorities to one of the conflicting job roles and neglect the other role. They may feel unwilling to teach when felt teaching activity will take a lot of time, reduce their research performance, and vice versa.

3. Mediation effect of occupational well-being

The result shows that occupational well-being, seen from emotional exhaustion and work enthusiasm, significantly plays as a mediating variable of the relationship between TRC and innovative teaching. According to the positive sign of mediation path coefficient multiplying results, the mediations are partial complementary mediations. Thus, the occupational well-being as a mediating variable clarifies, possibly confounds, or falsifies the link between two, TRC and innovative teaching [45, 46].

According to the theoretical framework built, emotional exhaustion and work enthusiasm can serve as explanatory variables to explain how TRC is affecting innovative teaching. First, TRC influence innovative teaching through emotional exhaustion. TRC is a form of job demands. According to the JDR model, job demands are positively related to emotional exhaustion. Hence, the high role conflict that experienced by the lecturer will increase their emotional exhaustion. In turn, the high emotional exhaustion will prevent the lecturer from creating a new teaching strategy or method. The high emotional exhaustion also refrains the lecturer from creating an attractive learning environment and vice versa. This is consistent with the previous finding. The emotional exhaustion prevents the employee from innovative behaviour [2]. In the end, the present finding was strengthening the previous studies, which found that emotional exhaustion establishes the link between job demands and job performance [33, 35].

Second, TRC influence innovative teaching through work enthusiasm. Based on the JDR model, the rise of TRC will decrease the work enthusiasm of lecturer. The low work enthusiasm indicates the low of enjoyment, excitement, and pleasure. So, if the lecturer no longer feels enjoy and pleasure with the job, it will decrease the job performance, including innovative teaching, and vice

versa. As revealed in the previous finding, the teacher's enthusiasm manifested to the readiness to build up the skills and expertise, dedication to the job, and ultimately lead to good performance [37]. The present finding also consistent with the previous finding that found works enthusiasm plays as a mediating role in the relationship between job demands and job outcomes [38].

4. Practical implication

As we know, innovation is a core of competitive advantage that is essential to remain competitive and survive in the competitive environment [47, 48]. Consequently, the university and related institutions should be more concerned about the innovative behaviour of the lecturers. This study provides important insight into the related stakeholders, such as the universities and related ministry, regarding the negative predictor of innovative teaching. They should discover approaches to reduce the negative effect of TRC on the innovation behaviour of lecturer teaching activity. The universities have to ease the issue regarding job role conflict.

There are several points regarding how to mitigate the negative effect. As revealed in this study, the job role conflict is related to the workload, lecturer's personality, and the roles' reward scheme. First, the administrators may redesign the job structure to reduce the teaching hours and hire guest lecturers to fill the gap related to the workload. Second, the lecturer may be allowed to work at their preferences and personality. For instance, the lecturer who likes to teach permitted to increase their teaching hours, and for lecturers who like to research, they are presented to reduce teaching hours. The authors' suggestions are based on the previous finding that revealed the lecturers try to balance the research and teaching activity based on their preferences [7].

Last, related to the reward scheme, the universities may redesign and evaluate the system to balance teaching and research rewards. The new reward scheme will promote the balance of lecturer motivation on teaching and research. In the Indonesian context, most universities give high rewards to lecturers who can conduct research and publications in reputable journals. Consequently, many lecturers choose to conduct research, neglect their duty in teaching activity, and ultimately decreased teaching quality.

Hopefully, redesigning the job structure will reduce the workload, especially related to the number of teaching hours. Evaluating the reward system is expected to minimise the job role conflict of lecturers. The low job role conflict leads to decreasing in emotional exhaustion and promotes work enthusiasm. Thus, the innovative teaching of the lecturer will increase as a result.

Conclusion

This study found that teacher-researcher role conflict (TRC) was significantly related to innovative teaching. The high TRC will reduce the lecturer's innovative behaviour on teaching activity, and vice versa. Furthermore, the present finding also reveals that occupational well-being (emotional exhaustion and work enthusiasm) plays as a complementary mediating variable to explain the relationship between TRC and innovative teaching. Finally, the university and related institutions should be more concerned about creating a balanced environment for lecturers, regarding the job structure and reward system. Hence, the balance job structure and rewards system will encourage lecturers to balance the dual roles as a teacher and a researcher.

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