

**DEVELOPMENT AND VALIDATION OF A QUESTIONNAIRE  
TO ASSESS ACADEMIC LEARNING MOTIVATION  
THROUGH MEASURING REGULATION STYLES  
AMONG INDONESIAN UNIVERSITY STUDENTS**

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## **ABSTRACT**

*Failure to complete studies on time was related to lack of motivation for academic learning. Based on Self-Determination Theory (SDT; Deci&Ryan, 2000), a questionnaire was constructed to measure motivation ranging from amotivation (non self-determined behavior) to intrinsic motivation (self-determined). Items were constructed and tested on two tryouts ( $N_1=432$ ,  $N_2=392$ ). Content validity was obtained through examination of a panel of experts. Construct validity, reliability ( $\alpha>0.7$ ), and item analysis were computed resulting in 94 items measuring six Regulation Styles. The questionnaire is valid to detect strengths and weaknesses in learning motivation which can be used for interventions to overcome related problems.*

*Keywords: motivation, academic learning, Self Determination Theory, university students*

## **INTRODUCTION**

One of the most common problems in the academic world in Indonesia is that the number of students who graduates on time, with at least satisfactory GPA, is relatively low. Preliminary research data (2005) obtained from 161 students of the Faculty of Psychology, University of Padjadjaran (year 2000-2004) showed some factors related to the problems preventing them from graduating on time. Among the internal factors which hinder their study are: low or no motivation, low or no interest, pessimism, lack of ability, personal factors (being lazy, moody, anxious, not confident), and cognitive factors (perceptions about self), according to 54.10% of the respondents. On the other hand, external factors were mostly perceived as supporting factor for their study (75.17% of respondents). Among these external factors are the presence of others (boy/girl friend, friends' help in studying, discussion partners, smart friends, seniors lending books), environmental factors (campus environment, lodging environment, holidays, schedule), facilities (computer, study room, transportation, availability of text books, internet access), financial support, lecturers (systematic, enjoyable, good relationship with the lecturers), subject matter (interesting

material, specific material, interesting/challenging tasks). What factors truly motivate students to study, and what factors enhance their motivation to study? This research was intended to construct measures for answering these questions, based on the Self-Determination Theory (Deci & Ryan, 1985, 2000).

## **PURPOSE**

The aim of this research was to develop a research instrument which is able to describe the academic motivation of the university students, especially University of Padjadjaran students, by measuring their regulation styles. This Regulation Style questionnaire describes the motivation through six regulation styles: non-regulation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic regulation.

## **METHOD**

The outcome of this research is an instrument to measure motivational Regulation Styles as a self-administered questionnaire. Items were constructed and examined through an in-depth analysis by expert reviewers in order to assess the content validity of this instrument. The revised instrument was tried out. At the same time, the students were also given the *Intrinsic Motivation Inventory* (Ryan, 1982) which was validated through Confirmatory Factor Analysis by McAuley, Duncan, and Tammen (1987). Congruent validity was obtained by correlating the constructed instrument with the *Intrinsic Motivation Inventory*. Reliability tests were done to confirm the reliability of this instrument. The item discrimination index was used in deciding which items were to be revised. A second try-out was conducted to obtain the

final set of valid and reliable items. SPSS (Statistical Package for Social Science) software 14.0 was used for all computations.

The instrument was then used to assess the regulation styles of the Faculty of Psychology students (year 2005). A norm was made using the RAI (Relative Autonomy Index - a combination of weighted Regulation Style scores which describe the degree autonomy, Grolnick & Ryan, 1989). Interpretation of the individuals or group could be made based on RAI or the Regulation Style profile.

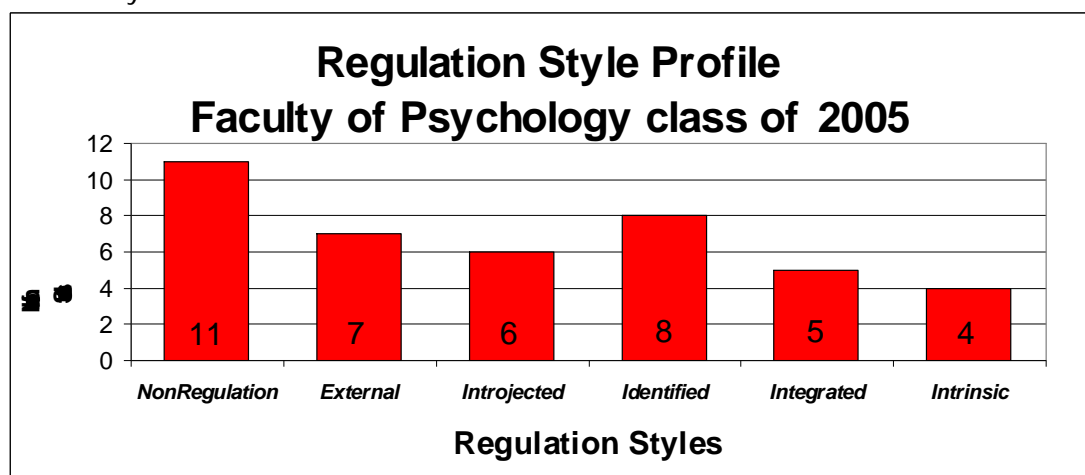
## RESULTS AND DISCUSSION

*Content validity* of the constructed items was obtained through an *in-depth analysis* done by five *expert reviewers*. Based on the experts' review, item revisions were made. The revised instrument (90 items) was then given to 423 University of Padjadjaran students (class of 2004 from 8 faculties). The instrument was correlated with the *Intrinsic Motivation Inventory* (Ryan, 1982)  $r = 0,641$ , at 99% significance. This showed the existence of *congruent validity*. *Construct validity* was also obtained through factor analysis. *Alpha Cronbach* ( $\alpha > 0.7$ ) for each regulation styles showed that this instrument is reliable. Revision from the first try-out (105 items) was then tried out to 392 students, resulting in 94 valid and reliable items ( $\alpha > 0.8$  for each *Regulation Style*, see **Table 1**). However, the *construct validity* obtained through factor analysis eliminated the *ego-involvement* sub dimension of the *Introjected Regulation*. There was an indication that this elimination was related to the difference between Indonesian cultures and Western culture. Deci & Ryan stated that there is considerable variability in the values and goals held in different cultures, suggesting that some of the avenues to basic need satisfaction may differ widely from culture to culture (2000).

Table 1. Reliability (after Factor Analysis)

	<b>REGULATION STYLES</b>					
	<b>NON-REG</b>	<b>EXTERNAL</b>	<b>INTROJECTED</b>	<b>IDENTIFIED</b>	<b>INTEGRATED</b>	<b>INTRINSIC</b>
<b>NUMBER OF ITEMS</b>	19	13	18	14	15	15
<b><math>\alpha</math> Cronbach</b>	<b>0.895</b>	<b>0.832</b>	<b>0.836</b>	<b>0.890</b>	<b>0.888</b>	<b>0.895</b>

Diagram 1. Profile of the Dominant Regulation Styles of the Faculty of Psychology Students year 2005



The data from the year 2005 students of the faculty of Psychology in **Diagram 1** showed that 58.54% students (N=41) were dominant in the *Non-Regulation* (11 students), *External Regulation* (7 students) and *Introjected Regulation* (6 students).

## CONCLUSION

It can be concluded from the psychometric properties that the Regulation Styles research instrument is a valid and reliable alternative measurement of motivation. The weak point of this instrument is that it is not recommended yet to be used in other groups without further study. The strong point is that this instrument is able to describe motivation through its regulation styles. It can be used to assess individuals or individuals as a group, as well as describing the individual's behavior and the relevant regulatory processes. The result of this assessment will be useful for students, counselors,

instructors/lecturers, in addition to other educational stakeholders. Based on the assessed data, a suitable intervention program either for individual or group can be designed accordingly.

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