The International Journal of Research and Review

Volume 7(2), October 2011

The International Journal of Research and Review is an international interdisciplinary journal that publish empirical reports in the various fields of Social Science.
The International Journal of Research and Review
An interdisciplinary journal on various fields of the Social Sciences

© 2011 Time Taylor International
This journal is open-access and users may read, download, copy, distribute, print, search, or link to the full texts, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.

The International Journal of Research and Review (TIJRR) is abstracted in the TIJRR is now abstracted and indexed in the Social Science Research Network, Asian Education Index, Summons Serial Solutions Index by Proquest, Ulrich’s Web, Google Scholar, NewJour, Open J-Gate, Journal Finder, DOAJ, Index Copernicus Journals Master List, SSCI, and EBSCO. TIJRR is also hosted by WT Cox Journal finder, EBSCO, and ERIC on-line.

The TIJRR (ISSN 2094-1420) is published two times a year by Time Taylor International. This journal is part of the Asian EFL Journal on-line services. Access to on-line table of contents and articles are available to all researchers at http://journalofresearchandreview.books.officelive.com/default.aspx for details.

The International Journal of Research and Review (TIJRR) is an international refereed and abstracted journal that publish empirical reports in the various fields of arts, sciences, education, psychology, nursing, social consequences of computer science, and business. Contributors from different institutions are welcome to submit their manuscripts for review and publication on-line that is relevant and significant in the various fields. The International Journal of Research and Review publishes articles and studies on-line twice a year.

Submission Guidelines

The empirical reports featured in the TIJRR are diverse considering the varied fields it can accommodate. The types of empirical reports include:

1. Research Article – ranges from basic and applied research empirical studies employing complex methodologies such as experimentation, survey, evaluation etc. using qualitative or quantitative studies.
2. Literature Review and Metanalysis Studies – synthesis of reviews from journals are viable in this category.
3. Commentary article on theories and models – Issues on previous theories and models are acceptable.

Articles are submitted to the editor at tijrr@yahoo.com. A cover letter indicating contact information of the author(s) is submitted together with the manuscript in word format.

Manuscript Preparation

Submitted manuscript should be typed single spaced. Consult the “Publication Manual of the APA” (latest editions) for detailed guidelines in writing and formatting the manuscript.
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Issues of International Student Retention in American Higher Education</td>
<td><em>Krishna Bista and Charlotte Foster</em></td>
</tr>
<tr>
<td>11</td>
<td>Factors Influencing Marital Satisfaction among Christian Couples In Indonesia: A Vulnerability-Stress-Adaptation Model</td>
<td><em>Yonathan Aditiya and Carlo Magno</em></td>
</tr>
<tr>
<td>33</td>
<td>Universities of the Islamic World: Catalysts for Global Sustainability Transformation – A Discourse Analysis</td>
<td><em>Hamoon Khelghat-Doost, Zainal Abidin Sanusi, Govindran Jegatesen, and Tunku Fatimah Firdaus Dato’ Tunku Fariddudin</em></td>
</tr>
<tr>
<td>51</td>
<td>Engagement – Promoting Aspects of Teacher’s Instructional Style and Academic Self Regulated Learning</td>
<td><em>Rita C. Ramos and Ma. Joanna Tolentino-Anonuevo</em></td>
</tr>
</tbody>
</table>

Date Published: September 2, 2011
Issues of International Student Retention in American Higher Education

Krishna Bista  
*Center for Excellence in Education*  
*Arkansas State University, AR (USA)*

Charlotte Foster  
*College of Education*  
*Western Missouri State University, Saint Jo (USA)*

**Abstract**

This paper focused on issues of retention and the individual needs of international students at a southern university through videotaped group interviews with six students from Africa, China, India, Japan, Jordan, and Nepal. Students were asked questions concerning their first experiences at the university, experiences out in the community, academic issues and concerns, and other needs. Asking for and paying attention to the details that support international students in their quest to receive an American education will support the students where they need it and also provide an atmosphere that will encourage more international students to follow.

**Keywords:** Higher education, International students

**Introduction**

The number of international students attending institutions of higher education is on the rise in the United States. The foreign student population rose from 547,867 in 2000 to 690,923 in 2010 (Open Doors, 2010). In 2010, the growth was primarily driven by a 30% increase in Chinese student enrollment in the United States, making China the leading sending country. Indian students represented 15% of all international students in U.S. higher education. Besides these, the significant enrollments were from China, India, Saudi Arabia, Vietnam, Turkey, and the United Kingdom (Open Doors, 2010).

Many overseas students attempting to study in a higher education setting face obstacles such as financing the education, balancing work and study schedules, finding the self-discipline to persist, and many other obstacles that can make attending college a difficult task. In addition to these multiple obstacles, international students face challenges related to language, cultural, and personal barriers although many still manage to persist and even succeed in studying abroad. Fortunately for North American universities, many students from foreign countries are dedicated to receiving a degree in higher education and carry out their studies in spite of the additional difficulties.
Table 1

*Growth of International Students in the US from 2000/01-2009/10*

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth of International Students in the US (Thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000/01</td>
<td>300,000</td>
</tr>
<tr>
<td>2001/02</td>
<td>400,000</td>
</tr>
<tr>
<td>2002/03</td>
<td>500,000</td>
</tr>
<tr>
<td>2003/04</td>
<td>600,000</td>
</tr>
<tr>
<td>2004/05</td>
<td>700,000</td>
</tr>
<tr>
<td>2005/06</td>
<td>800,000</td>
</tr>
<tr>
<td>2006/07</td>
<td>900,000</td>
</tr>
<tr>
<td>2007/08</td>
<td>1,000,000</td>
</tr>
<tr>
<td>2008/09</td>
<td>1,100,000</td>
</tr>
<tr>
<td>2009/10</td>
<td>1,200,000</td>
</tr>
</tbody>
</table>

Source: *Open Doors Report* on International Educational Exchange, 2010

With institutions committing an increasing amount of financial resources to oversee recruitment, many colleges and universities still neglect to recognize the importance of retaining these students. The Noel-Levitz Report (2009) noted 33.9 percent of four-year public institutions had programs specifically designed for retention of international students, but only 6.8 percent of the respondents felt the programs were very effective.

According to the latest survey (October 2010) by *The Chronicle of Higher Education*, sixty-one percent of surveyed institutions reported taking special steps to recruit international students including offering new programs, providing additional staff, increasing recruitment trips, and increasing marketing. All of the included steps may lead to increased attendance of international students, but do not necessarily address the retention of said students.

This paper focused on the individual needs of international students at a southern university through videotaped interviews with six students from Africa, China, India, Japan, Jordan, and Nepal. Both graduate and undergraduate students were interviewed through a semi-structured interview process. Students were asked questions concerning their first experiences at the university, experiences out in the community, academic issues and concerns, and other needs as expressed by the student through the interview process.
What matters to international students?

The retention of international students is dependent upon meeting the needs of the individual students that college support staff serves, internationally or locally. Basically, international students value the quality of their education (Domville-Roach, 2007; Ikwuagwa, 2010). They want their faculty knowledgeable in their fields, and strong in instruction within their areas of study. Campus life issues such as athletics, activities, organizations, are not highly valued by international students, however, these areas should not be ignored (Ikwuagwa, 2010). International students mostly worry about campus safety and security. Due to federal laws, and non-immigrant student visa (F-1) status, most international students do not have the privilege of applying for financial aid.

Welcoming International Students

Many students arrive at the university and find that they have held misconceptions concerning the American university experience from the initial pick up at the airport to housing to availability of familiar food, and so on. Many universities attempt to provide services for international students on the surface, but fail to meet the real needs of the students at a more practical level. One student, arriving from Nepal, was greeted at the airport by a complete stranger. The stranger had no university identifiable information and was also an international student from another country. The new international student was scared to leave the airport with a complete stranger and began asking questions of the stranger. The stranger got frustrated with all the questions and the international student was forced to call the local police to help sort out who she should ride to the university with. After the police made the correct phone calls and assured the student that she would be safe riding with the stranger, she did. It was a long ride to the university with a stranger that was not too happy with her. The student from Nepal said: "I waited for the shuttle for several hours in front café at the airport. I did not see any staff from the university with a name card or university t-shirt. After hours of waiting a person came and asked me to walk to the parking lot. I was scared and I asked the police for help. I also told the police to make a call to the university to make sure he was proper driver. I spoke with the school adviser, and only then was sure of riding the shuttle." This is just one example of the university providing a service to the international students, but not really an effective service. Universities could assure new students that they are welcome by providing proper identification, a sign with the student’s name and university logo, and a university t-shirt for those assigned to retrieve international students from the airport.
Without a procedure to evaluate support systems that are already in place, universities may think they are doing a better job than they actually are. First impressions are most important and universities want to put their best foot forward in welcoming international students. New students expect to begin entertained, informed and well received by their international staff, students and teachers throughout the first couple of weeks. Once they are familiar with their particular campus building, cafeteria, library, apartment, they can assimilate much easier (Ikwuagwa, 2010; Kuo, 2011; Montgomery, 2010).

Before their arrivals, the offices of international students should make enough communication with these foreign students so that they ensure of their housing, things to bring with them, college fees, friends and flights. Some colleges have developed CDs of college information especially focusing on international students which, in fact, could be helpful resources for them. Strategies of marketing are so important to recruit foreign students, so are to return those admitted students when they start their studies in the colleges and universities. In preparing abroad study, foreign students need more additional and accurate information. Sometimes, they happen to land in another place because they may not know the different places of America with the same name or sister campuses of the university. For example, a student landed in Troy of New York though he was attending Troy campus located in Alabama because he did not know there was another campus at the University because of miscommunication of received information.

**Legal Issues and Communication**

For most of the international students, college rules and regulations are unclear at first. New international students need to know important information when they arrive in the U.S. College I-20s, immigration policies regarding full time and part time course work, pre-requisite course work, English language requirements, compass tests, on and off campus employment, college terminology such as credit, grade, transfer and assignments are all important information that each college student should know. Given this information in advance can save foreign students a lot of trouble and may increase their chance of continuing at the university. College culture is different in Asia and other continents because educational systems including teaching, leaning and assessment are different. For example, in many Asian colleges and universities, assessment is based on annual examinations in which they are graded in per cent instead of GPA or letter grade.
Students Need Forum

International students like to share their problems and comments related to university experiences and experiences through online forums. One student from Zimbabwe stated her frustration at not being able to make appointments to meet with faculty or staff to resolve problems. This student was told by the office staff to come back later, which was an inconvenience for the international student. Many international students have time-sensitive problems relating to visas and other papers that need to be addressed quickly. The African student did not feel comfortable filing a complaint because of a fear of future retribution and felt that she had no voice in this issue. She suggested a forum for her and other international students to be able to openly express their needs. Over 600 international students that participated in online study (Bista, 2011b) openly expressed concerns about academics, personal, administrative, and other areas that they may not have felt comfortable expressing in person. An online forum for students to speak out gives them a voice and allows the university the opportunity to address the needs of international students which may lead to retention. These forums would allow foreign students a place to express their needs. Forums would also serve as a tool to help students make new contacts and establish friendships.

Transportation and Entertainment

During separate interviews with Jordanian and Chinese undergraduate students, both expressed concern about the lack of access to entertainment at the university. Both students, young men, were used to public transit systems that were easily maneuverable and accessible to students to get from campus to the mall, movie, or amusement park. Many universities provide a bus that takes the students to and from popular places in town, but the busses mostly run on limited schedules. International students spend at least double the hours studying that traditional students spend and have a much smaller amount of time to work with transportation issues. Universities in smaller communities may benefit by meeting regularly with international students to assess their transportation and entertainment needs.

Sometimes because of not having access to public transport or shuttle services, students become unable to explore activities that are available in the local communities (Bista, 2011b, Ikwuagwa, 2010). When they do not have access to local places such as theaters, shopping, lakes and parks, they may become bored and lonely, and consider transferring to another college or university. In an interview with Indian student, she said "Jonesboro was boring bro! There were no places to go around, but later my friends took me around... I saw many lakes and parks. At least I was able to go and relax."
Some inexpensive alternatives such as providing understandable lists of local resources or organizations outings with reasonable fees would be options a college or university would offer. Sometimes, international programs can organize short and long distance trips with reasonable fees. International students are not able to go in such tours or trips because they are very expensive. A Chinese student said, "One time I went to Florida from the university but it was very expensive…but I went because I was bored. I did not have other friends from China in the tour. They did not go there because it was very expensive…but there were 15 other students".

On-Campus Employment and Scholarships

Many undergraduate students from foreign countries rely on family financial support to pay for their university experience. One undergraduate student expressed his concern for his parents continuing to send money to support him here in the states. After being at the first American university for a semester, he had already made the decision to transfer to another university in a larger city where he was better able to share expenses with other family members. Working without authorization in the United States is considered a violation of immigration status. Nonimmigrant students (F-1) are not eligible to be employed in federal work-study positions, and federal regulations strictly limit both the kind and the amount of other kinds of work that international students can do in the United States.

Many international undergraduate students disregard the federal laws and find illegal work in order to continue their university expenses. As the rule of the Homeland Security, these students are not allowed to work off campus, yet they are compelled to work. Those who do not get on campus employment, transfer to other colleges where they see the possibility of getting work. A large number of students from Nepal, India and Pakistan transfer to community colleges from the universities for the off campus work. A graduate student from Nepal said, "I went to every department for a graduate assistantship position but I did not get. I tried the whole semester for a job but it was almost impossible for me. This semester I transfer to Texas. My friends work there, and I will get a job". Some Asian businesses will secretly hire foreign students to help with bills.

International graduate students are normally offered Graduate Assistantships, but these are not available for undergraduate students. Seventy-eight percent of four-year public institutions use student employment as a strategy to engage or retain undergraduate students and reported this strategy as minimally to very effective (Noel-Levitz, 2009). Providing an alternative to illegal employment for international students is another key to international student retention.
Creating a culturally educated community can be another way to increase the retention of international students (Ho, 2007). A Jordanian student trying to figure out how to take the local city bus to a grocery store was met by a bus driver who would not answer questions or even look at the student. Some people in a community do not appreciate the cultural diversity brought into a community by the international student population and may react negatively out of fear and ignorance. The Jordanian student rode the bus for four hours until he finally ended up at the grocery store where he was headed. Universities that take a role in educating the community on the benefits of hosting international students will provide a welcoming community and support the retention of the students.

Universities and colleges can support special relationships with local community people to offer international students home stays, happy families, volunteer opportunities, American parent centers, and other activities to allow foreign students to feel home when they arrive first time in the U.S. To ease the pressure of the red tape, colleges should help these students feel support from the community. A graduate student from India said, "We don’t have any welcoming programs in the community. One time I was ready to participate in a food festival at the Hispanic Center but when the day arrived they told me they did not need me. I bought food and I was ready."

Colleges, therefore, should have several programs of community outreach where students can engage in many activities which eventually help to both host families or organizations and students. One suggestion for universities to consider in addressing the needs of international students is to offer an ongoing forum for international students to express their needs and concerns. Universities may have a plan in place to support international students. A plan in place is the first step; a plan stated, not perceived that effectively supports international student needs is the next step. Some deeper questions for universities to consider may be:

- Is the transportation system that is in place meeting student needs?
- Do international students have entertainment requests that we can accommodate?
- In what ways can we assess the cultural education of our community?
- How often are we requesting input from international students on improving services?
- How satisfied are our students with our services?

International Student Retention Office

Recently, many universities have set up an office of international student retention to assist these foreign students. On the website, Kennesaw State University mentions the mission of the International Student
Retention Services is to "assist [international students] while [they] are in the United States and attending Kennesaw State University (KSU). These retention efforts involve assisting with and/or making referrals regarding admissions, visa concerns, registration, ESL (English as a Second Language), math, personal, and social issues. KSU has services in place to help with your adjustment to a different culture. The Office of International Student Retention Services cannot take the place of your home, but it strives to make you feel at home while you are here".

An office of International Student Retention could serve many purposes on a university campus. With one of the major causes of attrition for international students being a misconception between student expectations and academic programming, a retention office could support the communication between the students so that the misconceptions are cleared before the student makes it to the university and then decides to transfer. Student rapport between the foreign and domestic students is another area that a student retention office could support by offering social, cultural, and entertainment activities. While assisting foreign students with admission referrals, visa concerns, registration and other academic issues that arise, staff and educators at the International Programs bring a big change in college and university. Finally, the student retention office at a university can become a home base for the foreign student which offers support of almost any nature, support that will support the foreign student throughout the transitional times.

These offices should strengthen their support systems such as timely counseling and advising, updates on visa and part-time employments along other physical facilities for international students that are available in the campus. In the *Handbook of the Institutional Student Retention Assessment* (Swail, 2010, p. 20), the following points are recommended to work on retention:

- Positive interaction with a person or activity that boosted self-confidence.
- Quality instructions, relationship with faculty, interactions, feeling of connectedness
- Relationships with faculty, advisors, peers; Interaction with outstanding faculty/staff
- Connecting with some group, academic growth
- Engaged, meaningful connections (personally, with peers or superiors, academically, etc.)
- Relationships with key people: instructors, students, administrators (US TOO)Portland State

International programs can also generate private and funded scholarships to draw the brilliant students. Portland State University (PSU) welcomes students from other countries to pursue higher education in Oregon. Along
with regular private scholarship, PSU has offer, the International Student Retention Scholarship, made possible through funding from the State of Oregon, offers partial tuition scholarships each year to a number of deserving students from many countries throughout the world.

**Conclusion**

Unlike the students in past, each year colleges receive brilliant and diverse international students from different countries, and they need special support while in the U.S. International students want to be welcomed and supported, very much like traditional American students. Asking for and paying attention to the details that support international students in their quest to receive an American education will support the students where they need it and also provide an atmosphere that will encourage more international students to follow. Having foreign students colleges can have diverse culture, language and educational experiences which is beneficial for American students and professors. These students also help colleges generate higher revenue in terms of tuition and other fees. In addition, international students are opportunities for American students and community people to learn more about foreign languages, cultures and traditions.

**References**


Factors Influencing Marital Satisfaction among Christian Couples In Indonesia: A Vulnerability-Stress-Adaptation Model

Yonathan Aditya  
*Universitas Pelita Harapan*  
*Karawaci – Indonesia*

Carlo Magno  
*De La Salle University*  
*Manila, Philippines*

**Abstract**  
The present study tested the effect of neuroticism, internal perceived stress, and positive dyadic coping on marital satisfaction among Christian couples in Indonesia, guided by the Vulnerability-Stress-Adaptation model (VSA). The effects of neuroticism, internal perceived stress, and positive dyadic coping on marital satisfaction were investigated using an Actor-Partner Interdependence Model (APIM) and the calculation was done using multilevel modelling (MLM). Self-report data were collected from 203 couples in Indonesia. The results show that internal perceived stress and positive dyadic coping for males (husband) and females (wife) were the predictors of their respective marital satisfaction. Moreover, females’ marital satisfaction was affected by her spouses’ internal perceived stress. Males’ marital satisfaction was affected by his own level of neuroticism. The implications of the findings were discussed.

**Keywords**: Marital Satisfaction, Neuroticism, Internal Perceived Stress, Positive Dyadic Coping, VSA, APIM, MLM, Indonesia.

**Introduction**  
Marital satisfaction is a topic of interest for many researchers who specialize in the study of relationships in the family. Specifically, marital satisfaction affects other areas of human life (i.e., physical and emotional health, relationship between parent and children) (Fincham & Beach, 1999). There are several models used to explain marital satisfaction in research. However, the widely used model is the Vulnerability-Stress-Adaptation model of marriage (VSA) (Bradbury, 1995). The advantage of this model is that it has received enough empirical support and its comprehensiveness. It reflects the diverse intrapersonal, interpersonal, and external factors that impinge marital satisfaction. According to this model, there are three broad categories of factors that affect marital satisfaction namely: Enduring vulnerability, stressful events, and adaptive process. Hence, marital satisfaction depends on the interplay among enduring vulnerabilities, stressful events, and adaptation (Bradbury, 1995).

Enduring vulnerability is a stable characteristic that each spouse brings into marriage. In this Neuroticism was chosen to represent enduring
vulnerability, because Neuroticism is one dimension of personality trait that has the biggest effect on marital relationships (Piedmont, 1998).

Stressful events are developmental transitions, situations, incidents, and chronic or acute circumstances that make couples distress (Bradbury, 1995). Majority of the studies in stressful events examine the effect of major stressful events (i.e., such as serious illness, infidelity or loss of job) to marital satisfaction (Pai et al., 2007). The present study focused on assessing minor stress anchored on Bodenmann (2009) prediction that it has a stronger effect on marital satisfaction.

Adaptive process is the way spouses treat and respond to each other. Studies on adaptive process usually concentrate on communication behavior (Bradbury, Rogge, & Lawrence, 2001). The researchers found that certain types of marital interaction were strongly related to marital dissatisfaction (Caughlin, 2002; Eldridge & Christensen, 2002; Gottman, 1994). However, recent studies place their attention to the coping process of the couple. Bodenmann (2005) conducted meta analysis on 13 studies that examined the role of coping in marital relationships and found that positive dyadic coping was related with higher marital satisfaction, with dyadic coping contributing 30% - 40% of the variance (Bodenmann, 2005). Given the important role of dyadic coping, it was chosen to represent adaptive process.

Most of the studies on marital relationship especially in Indonesia still use an individual approach which assumes characteristics of the actor will influence the satisfaction of his/her. This approach usually utilize simple correlational analyses or ordinary multiple regression that fail to consider the interdependence of husband and wife (Reis, Capobianco & Tsai, 2002). In contrast, the present study used dyadic data analysis that enable the researcher to examine the interdependence of the spouse. For example, how the characteristics of both the self (i.e., the actor) and the marriage partner (i.e., the partner) influence the actor's self-reported marital satisfaction (Kenny, Kashy, & Cook, 2006).

The present study tested how neuroticism and internal perceived stress affected marital satisfaction through dyadic coping. The analysis was guided by Actor-Partner Interdependence Model (APIM). APIM is used for basic dyadic analysis: When there is one actor and one partner such as in marital relationship (one husband and one wife). This model has dyad as its unit of analysis and proposes that the outcome of an individual depends on his or her own independent variables as well as his or her partner independent variables. There are two effects in APIM: Actor effect and partner effect. Actor effect is the influence of a person's independent variables to his/her dependent variables. On the other hand, partner effect is the influence of a person's independent variables on his/her partner dependent variables (Kashy, 2006). Multilevel modelling was used to estimate APIM's parameters.
This current study did not test the VSA model. The VSA model was used as a framework to anchor this study. It helps in the selection of variables and the relationships among variables. However not all paths were tested. This present study only tested path A, B, C and F, because the focus of this study was on marital satisfaction.

**Marital Satisfaction**

Marital satisfaction in this research is conceptualized as a subjective evaluation of the marital relationship. It does not evaluate any behavior observation, such as how well they communicate to each other, or how they solve their differences. This conceptualization is called unidimensional measure of marital satisfaction. Most of the recent study on marital satisfaction used this conceptualization because it gives “a clear cut interpretation, this approach allows the antecedents, correlates, and consequences of marital happiness to be examined in a straightforward manner” (Fincham, 2009, p. 596).

Marital relationship is influenced by norms, customs, and expectations derived from culture. Therefore, the concept of marital satisfaction in Indonesia can be different from the concept of the same in western country because of the differences in culture. However the studies of Jones (2004) and Lucas et al. (2009) indicated that in general marital satisfaction in Indonesia will not be much different from that in western country. Tamimi, Jaswal, Grau, and Banse (2009) also found that VSA model are universal. Integrating the results of three studies above it can be concluded that in general marital satisfaction of Indonesian couples can be explained by the VSA model. However, compare to other studies conducted in other countries, it is possible that there will be some differences in some paths.
Stress in Marriage

Couples are highly interdependent. Therefore, the distress of one partner may influence the other partner also (Cutrona & Gardner, 2006). Hence, stress in marital relationship is better conceptualized as dyadic stress. Dyadic stress is defined as stressful events or circumstances that affects both partners (Bodenmann, 1995). Randall and Bodenmann (2009) differentiated stress according to its source, namely: External and internal. External stress is stress that originates outside the relationship, such as problem in the workplace, neighbourhood, extended family or children. This type of stress does not have a direct effect on marital relationship and its effect is mediated by internal perceived stress (Neff & Karney, 2005). Internal stress on the other hand is stress that originates within the relationship, such as differences in goals, needs, habits, or worry about their spouse well-being (Bodenmann, & Cina, 2005). This type of perceived stress has a direct effect on marital relationship. Therefore, this study focused on internal perceived stress (Ledermann, Bodenmann & Bradbury, 2010).

Neuroticism

Neuroticism is a dimension of trait that measure emotional stability of a person. Costa and McCrae (1992) called neuroticism as “the most pervasive domain scales contrasts adjustment or emotional stability with maladjustment or neuroticism” (p. 14). Therefore, level of neuroticism has a positive correlation with sensitivity to stress. Someone with higher level of neuroticism will be easier to be distressed compare to whom with lower level of neuroticism (Watson, 2000). Most of the studies on the effect of neuroticism on marital satisfaction found that this dimension of big five traits has a negative effect on marital satisfaction. The higher the level of neuroticism the lower is the marital satisfaction (Malouf, 2010).

Dyadic Coping

Bodenmann based his theory of dyadic coping on the transactional stress theory of Lazarus and Folkman (1984). But he expanded it to systemic and process-oriented dimensions. Couples are interdependent where they are reciprocally influencing each other. The way one partner thinks about the problem and tries to solve the problem will influence the other partner. The same is true with the success of their problem solving (Bodenmann, 1995; Cutrona & Gardner, 2006). Bodenmann (2005) wrote “one cannot examine one partner’s stress appraisals or coping efforts without considering the effects on the other partner and the marriage” (p. 36). Bodenmann (2005) distinguishes between positive and negative dyadic coping. However, this study focuses only on the positive type of dyadic coping.
Positive dyadic coping includes positive supportive dyadic coping, common dyadic coping, and delegated dyadic coping. Positive supportive dyadic coping and common supportive dyadic coping can be either problem-focused or emotion-focused dyadic coping. In positive supportive dyadic coping one partner helps their spouse in distress with his/her coping efforts. It can be offering practical help, giving practical advice, giving emotional support, empathic understanding, or helping the partner reframing the situation. In positive common dyadic coping both partners are more or less symmetrically participate in their coping process to solve the problem they encounter. It can be joint problem solving or equal division of task, mutual solidarity, common religious activity, or joint relaxation exercises. Lastly, in delegated dyadic coping one partner take over tasks or responsibility of their spouse in order to reduce their partner stress. This type of dyadic coping is usually used to handle problem-oriented stressors.

Relating Neuroticism, Internal Perceived Stress, and Positive Dyadic Coping

Semmer (2006) proposed Neuroticism can influence internal perceived stress through four mechanisms: (1) exposure to stressors, (2) appraisal of the stressors, (3) reaction to the stressors, and (4) coping with the stressors. Individuals high in neuroticism tend to be hostile, critical, and demanding. As a result, they are more likely to get negative responses from their environment. Therefore, compare to individuals with low levels of neuroticism, individuals with high levels of neuroticism are more likely to encounter stressful interpersonal events (Bolger & Zuckerman, 1995; Magnus, Diener, Fujita, & Pavot, 1993). Individuals who have high levels of neuroticism also tend to report higher levels of behavioral and functional impairment of their spouse, unrelated to the actual sickness of their spouses (Bookwala, & Schulz, 1998). Neuroticism has a high reactivity to negative affect. Stressors will induce negative affect. As a result neuroticism can magnify the impact of negative events. Compared to people with low levels of neuroticism, people with high levels of neuroticism tend to react stronger to stressors (Bolger & Zuckerman, 1995; Bookwala, & Schulz, 1998).

Lastly, neuroticism can influence the type of coping people used in time of distress. Individuals high on neuroticism have a high reactivity to stressors, therefore, they have a tendency to experience negative emotions (Watson, 2000). Hence, it is likely they use emotion-focused coping strategies in order to manage their own distress (Lee-Baggley, Preece, & DeLongis, 2005). As a result they have difficulty in empathizing with others when distressed. In the context of close relationship, they tend to choose maladaptive coping strategies such as confrontative coping or escape avoidance (DeLongis & Holtzman, 2005). Therefore, it is likely individual high on neuroticism will not use positive dyadic coping.
Relating Internal Perceived Stress and Positive Dyadic Coping

The transactional stress model of Lazarus (1984) implies that situations can influence coping strategies. Coping is considered as a dynamic process that changes over time depending on the stressors and appraisals of the individuals at that time. Hence, type of stressors and appraisals of those stressors may influence coping strategies used by individuals (Moos & Holahan, 2003).

Bodenmann (2009) have similar conception about the effect of stressors and appraisals of stressors on coping strategies. Stress reduced individuals’ ability to deal effectively with problem (Neff & Karney, 2009). Under stress, individual tends to be easily angry and impatience. They are likely to pay attention to their own well being and pay less attention to their spouse problem (Randall & Bodenmann, 2009). Hence, it is predicted that internal perceived stress will have a negative effect on positive dyadic coping.

Relating Neuroticism and Marital Satisfaction

Couples bring to their marriage their own level of enduring vulnerabilities (neuroticism). Huston and Houts (1998) predicted that one’s level of those characteristics as well as the characteristics of their partner will shape the psychological infrastructure of their marriage. Their marital relationship is influenced by these traits (Malouf, et al., 2010). Neuroticism is one of the personality traits that usually have a bad influence on marital satisfaction. Individuals high on neuroticism tend to be distress easily and to show negative behaviors under stress. Therefore, this trait is usually related to marital dissatisfaction (Bradbury, Fincham & Beach, 2000; Caughlin, Huston & Houts, 2000). Malouf et al. (2010) did a meta-analysis on the effect of partners’ trait to marital satisfaction, using a total of 3848 respondents from 19 samples. The method used was zero order correlation without controlling actor effect. They found that neuroticism ($r = -.22$) has the highest correlation.

Neuroticism is not only affect marital satisfaction of individuals but also marital satisfaction of their partner. Having a partner with a high level of neuroticism tends to decrease marital satisfaction, because individuals with high level of neuroticism tend to express behaviors such as: criticism, contempt, defensiveness, and stonewalling. These behaviors are known to have a detrimental effect on marital relationship (Gottman, 1994). There is no gender difference on the partner effect of neuroticism. Both husbands and wives are affected by the level of neuroticism of their partner (Robins, Caspi, & Moffitt, 2000).

Charania (2006) and Dyrenforth, Kashy, Donnellan, and Lucan (2010) did similar studies but employed a better method. They measured the partner effect while controlling the effect of actor effect. Dyrenforth (2010) used large
samples from Australia and United Kingdom. They found the significant effect of actor neuroticism on their level of marital satisfaction. However, the partner effect of neuroticism on marital satisfaction of their partner gave conflicting results. Charania (2006) did not find significant partner effect of Neuroticism, while Dyrenforth (2010) found a significant partner effect of neuroticism on marital satisfaction, although the magnitude is smaller than that of actor effect.

Relating Internal Perceived Stress and Marital Satisfaction

Stressful life events that are perceived by couples may add problems to couples’ relationship. Under stress individuals tend to withdraw or to show hostile behavior. Hence, their communications are disturbed. Stress also reduces positive interactions between couples (Cohan & Bradbury, 1997; Frye & Karney, 2006). Those behaviors will reduce their marital satisfaction. Ledermann, Bodenmann, Rudaz and Bradbury (2010) did a cross-sectional research to study the effect of stress on marital satisfaction. They found that internal stress has a significant negative effect both for actor and partner effect for husband and wife. Higher internal stress on one spouse will decrease marital satisfaction of the other spouse and vice versa.

Relating Positive Dyadic Coping and Marital Satisfaction

Enduring vulnerabilities and stressful life events will influence marital satisfaction through adaptive process (dyadic coping). Through this adaptive process, couples will try to solve the entire problem in their relationship. This adaptive process in the end will affect marital satisfaction. Positive dyadic coping is effective in reducing stress and improving the quality of relationship because individuals with high level of positive dyadic coping tend to help their partner in time of distress and also believe that their partner will do the same (Bodenmann, 2005).

Positive dyadic coping also is also likely to have a significant partner effect on marital satisfaction. Individuals with high level of positive dyadic coping is likely to help their partner and do not pay attention only on their own interest. This positive behavior is likely to improve the marital satisfaction of their partner. However, there is a gender difference on the partner effect of positive dyadic coping on marital satisfaction. Only males’ positive dyadic coping has a significant partner effect on their wives’ marital satisfaction. Males’ marital satisfaction is not depending on their wives’ positive dyadic coping (Bodenmann, 2006).
**Purpose of the Study**

The goal of the present study is to investigate the predictors of marital satisfaction among Christian couples in Indonesia following Vulnerability-Stress-Adaptation model (VSA) (Bradbury, 1995). As mentioned in the review of related literature VSA provided an appropriate framework for understanding marital relationships: neuroticism together with internal perceived stress affect marital satisfaction through positive dyadic coping. The type of dyadic analysis chosen was Actor-Partner Interdependence model (APIM) (see Figure 2). This model pays attention both on the characteristics of husbands and wives and the interdependence of the couples. Therefore, this model enables the researcher to capture both actor effect and partner effect. The actor effect focuses on the effect of the individual’s own predictors on the individual’s outcome (i.e., the effect of husband’s agreeableness on his marital satisfaction), while the partner effect focuses on the effect of the individual’s own predictors on the partner’s outcome (i.e., the effect of husband’s agreeableness on his wife’s marital satisfaction). Hence, it is likely this perspective can give more accurate picture of marital relationship compared to the separate model. (Charania & Ickes, 2009).

![Figure 2. APIM Model. There are two members of the dyad (1 and 2), one independent variable (X) and one dependent variable (Y). E represent error variance which is not explained by the APIM. a is the actor effect while p is the partner effect.](image-url)

The framework for the analysis is illustrated in Figure 3.
Specifically, it tested several hypotheses:

1. Actor’s neuroticism, internal perceived stress, and positive dyadic coping have a significant effect on both actor and partner marital satisfaction.
   a) Actor’s neuroticism has a significant negative effect on both actor and partner level of marital satisfaction.
   b) Actor’s internal perceived stress has a significant negative effect on both actor’s and partner’s marital satisfaction.
   c) Actor’s positive dyadic coping has a significant positive effect on both actor’s and partner’s marital satisfaction.

2. Actor’s neuroticism and internal perceived stress have a significant effect on both actor’s and partner’s positive dyadic coping.
   a) Actor’s neuroticism has a significant negative effect on both actor’s and partner’s positive dyadic coping.
   b) Actor’s internal perceived stress has a significant negative effect on both actor’s and partner’s positive dyadic coping.

3. Actor’s neuroticism has a significant effect on both actor’s and partner’s internal perceived stress.
Method

Participants

The participants of this study were members of churches in Jakarta, Bandung, Jogjakarta and Surabaya. Those four cities are big cities in the island of Jawa where many Christian live. The inclusion criteria were: (a) the respondents should be married for at least one year; and, (b) both husband and wife should participate in the study.

The number of participants was guided by the recommendation given by Ackerman, Donnellan and Kashy (2010). Given the alpha level is .05 and power is 80% and considering the expected actor/partner effect ranges from .2 (trait to marital satisfaction) to .5 (dyadic coping to marital satisfaction), while the expected expected within-dyad associations for independent variables ($r_x$) is .2 and within-dyad associations for dependent variable ($r_y$) is .6 (Ackerman, 2011; Bodenmann, 2005), the minimum sample size is 180.

There were 230 couples returned the questionnaire. However, data from 27 couples were rejected because of several reasons, i.e., only one partner answer the questionnaire, left out demographic information. Hence, the total numbers of respondents used in analysis were 203 couples, which fulfilled the needed sample size. Their ages ranged from 20 to 60 years with an average of 41.7 years ($SD=7.9$). The length of marriage ranged from 1 to 39 years with an average of 13.9 ($SD=7.9$). The majority of the couples had two children. The ethnic background of these respondents was: 57.6 % Chinese Indonesian, 20.4 % Jawa, 13.8 % Batak, and the other 8.2 % consists of Minahasa, Timor, Maluku and mixed-ethnic. More than 59 % of the respondents had college degree and more than 11 % had masteral degree. Among the 406 respondents 31 % had a monthly family expenses more than Rp. 10.000.000, 26 % between Rp. 6.000.000 – Rp. 10.000.000 and 26% between Rp. 3.000.000 - Rp. 6.000.000. None of these demographic variables have significant correlation with marital satisfaction.

Instruments

Demographic Questionnaire. The respondents were asked about their age, gender, ethnic, years of marriage, household income, number of children, and highest educational attainment.

Big Five Inventory (BFI). The BFI was used to assess the neuroticism of the participants. BFI is a brief inventory to assess five dimension of Big Five personality developed by John, Donahue, and Kentle (1991). It is consisted of 44 items, five point likert scale. BFI has excellent psychometric characteristics, including internal consistency, temporal stability, and
construct validity. The Cronbach’s alphas of the five dimensions were: Extroversion (.86), Agreeableness (.79), Conscientiousness (.82), Neuroticism (.87) and Openness (.83). The authors already approved the five factor structure using Confirmatory Factor Analysis (CFA) of this instrument. They found standardized validity coefficient for extroversion, agreeableness, conscientiousness, neuroticism, and openness as the following: .94, .92, .92, .92, .90, and .92 (John & Srivastava, 1999). In the current study acceptable alpha levels were found for all five dimensions: Extroversion (.75), Agreeableness (.73), Conscientiousness (.75), Neuroticism (.75) and Openness (.72) (see Appendix 4-6).

**Dyadic Coping Inventory.** The *Dyadic Coping Inventory* was used to measure dyadic coping strategies of participants. The DCI is a self-report instrument consisting of 37 items, with responses arranged on a 5-point Likert-type scale. The instrument measures perceptions of one’s own dyadic coping behaviors and perceptions of the partner’s dyadic coping behaviors. Although the instrument contains nine subscales, only the two scales (positive dyadic coping and negative dyadic coping were used in analyses for this study.

The instrument has shown evidence of very good internal consistency (.89 for positive dyadic coping and .77 for negative dyadic coping), and has undergone a factor analysis test (Bodenmann, 2008). In this study acceptable alpha level were found for both positive dyadic coping (male = .76, female = .75) and negative dyadic coping (male = .77, female = .76) (see Appendix 7-9).

**Relationship Assessment Scale (RAS).** The RAS was used to assess the marital satisfaction. This inventory was developed by Hendrick (1988). It consists of 7 items, 5 point likert. The internal consistency was high with alpha = .86. RAS has good concurrent validity. It significantly correlated with a number of subscales of Love Attitude Scales and Dyadic Adjustment Scale. This instrument also has a good predictive validity. It can distinguish between couples who will stay and who will divorce (Fisher & Corcoran, 2007). In the current study acceptable alpha level were found (male = .77, female = .77).

**Multidimensional Stress Questionnaire for Couples (MSF-P).** The MSF-P was used to assess perceived stress. This inventory was developed by Bodenmann (2007) for analyzing the relationship between different type of perceived stress and dyadic coping in marital relationship. Although there are six subscales in this instrument, only one subscale will be used in this study (internal and external). Confirmatory Factor Analysis (CFA) was performed through AMOS on the two scales of MSF-P and a two-factor structure was proven with adequate fit (RMSEA = .074 and RMR = .034). In
the current study, acceptable alpha level were found for internal perceived stress (male = .77, female = .76).

**Procedure**

**Translation of inventories.** Most of the respondents do not understand English language well therefore all the inventories were translated into Indonesian. The method of translation used was back-translation design.

**Data collection procedures.** The researcher either met the respondents directly or the contact persons who would help in gathering data. In both methods of data gathering, the interested participants were given informed consent and a set of inventories. After they returned the inventories, they were given debriefing information.

**Data Analysis**

Data screening was done to check for accuracy of data entry, missing values, and the assumptions of multivariate analysis. After that all scores were centered using the grand mean. The grand mean was computed from husband and wife data. Centering was advisable in APIM to make the data has a meaningful zero (Kenny & Kashy, 2006).

The data was analyzed using Actor-Partner Interdependence Model (APIM) and APIM parameters were estimated using multilevel modeling. This analysis would produce estimate and level of significance. As per Kenny (2010) suggestion, all variables were standardized by transformed it to Z-score in SPSS. This transformation would transform the estimate to beta weight.

Before the APIM analysis was done, the data need to be checked for distinguishability. The husband and wife data in this research are conceptually distinguished (husband and wife), however it may not be empirically distinguished (Kenny & Kashy, 2006). Therefore the data was tested using Omnibus Test of Distinguishability. This test was done according to the steps given by Kashy and Donnellan (2012). It consists of two tests: The first test treated the model as distinguishable dyads and the second test treated the model as indistinguishable dyads. A chi-square difference test then was computed. The result of chi-square difference test was $\chi^2 (6) = 13.082, p < .05$. Therefore, the dyad members in this study were distinguishable, APIM for distinguishable dyad were used. The analysis was done using Multilevel Modeling (MLM). Multilevel Modeling is a tool used for analyzing hierarchical nested data.
Results

The descriptive statistics and dyadic analysis were obtained. Table 1 presented the means and standard deviation for all variables under study. There were no significant differences between males and females on all variables except for neuroticism ($t = -3.74$, $p < .01$). Females tend to score significantly higher on neuroticism compared to that of males.

Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Males</th>
<th>SD</th>
<th>Females</th>
<th>SD</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>2.48</td>
<td>.66</td>
<td>2.71</td>
<td>.70</td>
<td>-3.74*</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Internal Perceived Stress</td>
<td>1.82</td>
<td>.53</td>
<td>1.88</td>
<td>.55</td>
<td>-1.65</td>
<td>.10</td>
</tr>
<tr>
<td>Positive Dyadic Coping</td>
<td>2.92</td>
<td>.57</td>
<td>2.97</td>
<td>.53</td>
<td>-1.47</td>
<td>.14</td>
</tr>
<tr>
<td>Marital Satisfaction</td>
<td>4.22</td>
<td>.50</td>
<td>4.16</td>
<td>.54</td>
<td>1.38</td>
<td>.17</td>
</tr>
</tbody>
</table>

* $p < .05$

Dyadic Analysis

The result of MLM test for distinguishable dyads. The parameter estimates were presented in Figure 4, only the significant estimates were displayed.

It was hypothesized that actor’s neuroticism, internal perceived stress, and positive dyadic coping have a significant effect on actor’s and partner’s marital satisfaction (hypothesis 1). This hypothesis was partially supported. Only males’ neuroticism ($\beta = -.17$, $p < .05$), internal perceived stress ($\beta = -.33$, $p < .5$), positive dyadic coping ($\beta = .28$, $p < .5$) had significant actor effect on males’ marital satisfaction, and none of females’ characteristics have significant partner effect on males’ marital satisfaction. For females’ marital satisfaction, none of males’ and females’ neuroticism has a significant effect on females’ marital satisfaction. However, males’ internal perceived stress has a significant partner effect on females’ marital satisfaction ($\beta = -.18$, $p < .05$), and females’ internal perceived stress has a significant actor effect on females’ marital satisfaction ($\beta = -.25$, $p < .05$). Females’ positive dyadic coping also has a significant actor effect ($\beta = .37$, $p < .05$) on females’ marital satisfaction.
It was hypothesized that actor’s neuroticism and internal perceived stress have a significant effect on both actor’s and partner’s positive dyadic coping (hypothesis 2). This hypothesis was also partially supported. All males’ characteristics (neuroticism ($\beta= -0.16, \rho < .05$), internal perceived stress ($\beta= -0.25, \rho < .05$)) have a significant actor effect on males’ positive dyadic coping. However, none of females’ characteristic has a significant partner effect on males’ positive dyadic coping. For females’ positive dyadic coping, only females internal perceived stress ($\beta= -0.33, \rho < .05$) has a significant direct effect on females’ positive dyadic coping and males’ internal perceived stress ($\beta= -0.22, \rho < .05$) has a significant partner effect on females’ positive dyadic coping.

It was hypothesized that actor’s neuroticism has a significant effect on both actor’s and partner’s internal perceived stress (hypothesis 3). This hypothesis was partially supported, because only actor effects that were supported. Males’ neuroticism has a significant actor effect on males’ internal perceived stress ($\beta= -0.20, \rho < .05$), and females’ neuroticism had a significant actor effect on females’ internal perceived stress ($\beta= -0.19, \rho < .05$). However, none of males’ and females’ neuroticism has a significant partner effect to their partners’ positive dyadic coping.
**Discussion**

This present study investigated how all three dimensions of the vulnerability-stress-adaptation models affecting marital satisfaction. It was found that marital satisfaction is affected by positive dyadic coping, internal perceived stress and neuroticism. Not only actor effects that are significant but some partner effects are also significant. For example, husbands’ neuroticism, husbands’ internal perceived stress, husbands’ positive dyadic coping, wives’ internal perceived stress, and wives’ positive dyadic coping have a direct actor effect to marital satisfaction; husbands’ internal perceived stress has a direct partner effect to marital satisfaction. Therefore, marital relationship is affected by many factors and it also depends on both members of the couples.

Discussion of the result from the dyadic analysis is divided into three parts: the predictors of marital satisfaction, the predictors of positive dyadic coping, and the predictors of internal perceived stress.

It was found that there were common predictors and unique predictors of marital satisfaction for male and female respondents. Both husbands’ and wives’ marital satisfaction were positively affected by their own positive dyadic coping and negatively affected by their respective internal perceived stress. These results underscore the importance of dyadic coping and stress in marriage relationship. Positive dyadic coping entails not only the willingness to help their partners in their distress but also the belief that their partner will do the same to them when they need it. Therefore, positive dyadic coping was not only helping couples to reduce stress but also improving their togetherness (Bodenmann, 2005). Hence, their bonds are getting stronger over time. This willingness to be there when needed is also one important part of maintenance behaviors. These behaviors are needed to keep the relationship intact and growing (Canary & Danton, 2009). Therefore, Bodenmann (2005) in his meta-analytic study found that dyadic coping was strongly related to marital satisfaction.

Actors’ internal perceived stress was also a significant predictor of marital satisfaction for both husbands and wives. Actor’s internal perceived stress not only affects marital satisfaction indirectly through positive dyadic coping but also directly. It means some effects of actors’ internal perceived stress can be buffered by dyadic coping but some effects are not. It implies that under great internal perceived stress, no matter how good the couples cope with the stress their marital satisfaction will still be affected. This negative effect of internal perceived stress was consistently supported by previous studies (Bodenmann, 2007, Story, 2006, & Ledermann, 2010).

*Figure 4. APIM, Coding: 1= male. 2=female. Black arrow is male effect, and blue arrow is female effect.*
There were also unique predictors of marital satisfaction for husbands and wives. Husbands’ marital satisfaction were affected by their own level of neuroticism (actor effect) while wives’ marital satisfaction was only affected by their partners’ level of internal perceived stress. In this study, wives’ neuroticism has an indirect effect on wives’ marital satisfaction through the effect of wives’ neuroticism on internal perceived stress and positive dyadic coping. Wives who score high on neuroticism tend to have high levels of internal perceived stress. Neuroticism is related to negative appraisal (Watson, 2000). Therefore, individuals with high levels of neuroticism have a tendency to report situations more stressful than the actual condition (Bookwala & Schultz, 1998). Internal perceived stress has a significant negative effect on marital satisfaction. Individuals with high level of neuroticism tend to have a poor positive dyadic coping. Poor positive dyadic coping, in turn will have a negative effect on marital satisfaction. Hence, even tough wives’ neuroticism did not have significant direct effect on wives’ marital satisfaction; wives’ neuroticism was likely to have a bad effect on wives’ marital satisfaction.

Wives’ marital satisfaction was affected by their partner levels of internal perceived stress. This was consistent with the study of Bodenmann (2007). He found that wives were likely good at absorbing stress but were not good in radiating stress. Therefore, compare to husbands, wives’ marital satisfaction were more affected by their partners’ perceived stress. This finding was also consistent with the conclusion of Nolen-Hoeksema and Hilt (2009). After analyzing studies on gender differences in depression, they concluded that compare to husbands, wives are more interpersonally oriented. They put their relationship with their husband in high regard. This is especially true for Indonesian wives, which are supposed to take care of the well-being of their husband (see Putranti, 2007). Wives are taught that their primary roles include being a wife and a mother. They are the backbone of the family. Under Suharto’s New Order, this type of gender role was reinforced (Robinson, 2009). If something wrong happens in the marriage, usually the society will blame the wife. Hence, Indonesian wives are conditioned to accept that the well-being of their marriage and family are largely their responsibility. Since their childhood most of the Indonesian’s wives are taught by their mother to take care of their husband and the family. As a result, Indonesian’s wives learn to be sensitive to the sign of discontent from their spouses. They are afraid if this unhappiness is not handled, their marriage will be in trouble and the society will blame them. Therefore, if their husbands are not happy, the wives will be affected by this unhappiness.

Wives positive dyadic coping was not directly predicted by their neuroticism. It is only affected by its internal perceived stress and their husbands’ internal perceived stress. This is inline with the study of Nolen-Hoeksema and Hilt (2009) and Putranti (2007). They concluded that females
are more interpersonally oriented compare to males. Their coping behavior is more affected by the quality of their relationship with their husband than by their traits. As a result, females are not only affected by their perception about perceived within the relationship but also by their husband perception of the same.

Positive dyadic coping in either gender were affected by their respective internal perceived stress (actor effect). Stress taxes the individual capacity to process the experience effectively (Neff & Karney, 2009). Therefore, the higher stress perceived by the couple, the lower their ability to engage in positive dyadic coping. Internal perceived stress is a double-edged sword: it enhances the probability to cope negatively and at the same time reduces the chance to cope positively. It implies that great stress will make all marriages suffer. No matter how good are the couples’ ability to cope, under great stress their ability may not help much (Bodenmann, 2005; Story & Bradbury, 2009).

Both husbands’ and wives’ internal perceived stress were also affected by their respective neuroticism (actor effect). Individuals with high level of neuroticism tend to get more exposure to interpersonal stress because they tend to be hostile, critical, and demanding (Bolger & Zuckerman, 1995). They also have a higher appraisal of stressful event compare to that of lower level of neuroticism (Gunthert, Cohen, & Armeli, 1999). Therefore, individuals with high level of neuroticism tend to have more problems in their relationships with their spouse and have a tendency to report it more stressful than the actual condition. Hence, they have a higher level of internal perceived stress compared to that with lower level of neuroticism.

Internal perceived stress affects marital satisfaction through two paths: Indirect effect and direct effect. Internal perceived stress indirectly affect marital satisfaction through dyadic coping. It means some effect of internal perceived stress can be buffered by dyadic coping. If the couples choose to use positive dyadic coping to solve their differences, they can minimize the effect of internal perceived stress to marital satisfaction. However, not all effects of internal perceived stress are buffered by dyadic coping. Internal perceived stress also has direct effect to marital satisfaction. It implies couples need to learn to reduce their stress level. Otherwise, no matter how good their coping skills, under great stress their marital satisfaction will badly affected.

Those results described above imply that neuroticism affecting marital satisfaction through many ways. Neuroticism affect marital satisfaction directly and indirectly through their effect to perceived stress. Moreover, neuroticism does not only have actor effect but also partner effect. Therefore, even though the effect of neuroticism to marital satisfaction is relatively small compared to the effect of perceived stress and dyadic coping to marital satisfaction, neuroticism still play an important effect to marital satisfaction.
because traits affect marital satisfaction through many ways (Carver & Connor-Smith, 2010).

Based from the result above, couples who consist of husbands and wives with low level of neuroticism have a low level of vulnerabilities. These couples have a better chance to cope well under stress. Therefore, they tend to have a better marital satisfaction.

Stress in VSA is defined as all circumstances the couples’ encounter that may make them distress (Bradbury, 1995). It was found that internal perceived stress had a significant actor and partner effect. Both husbands’ and wives’ internal perceived stress had a significant effect on their respective positive dyadic coping and marital satisfaction. The higher the couples’ levels of stress, the lower their ability to engage in positive dyadic coping. At the same time their chance to engage in negative dyadic coping increase. On the other hand, husbands’ internal perceived stress had a significant partner effect on wives’ positive dyadic coping and marital satisfaction.

Adaptation in VSA is defined as the way couples handling their differences in opinion or difficulties in marriages. In this study adaptation was represented by positive dyadic coping. It was found that dyadic coping mediates the effect of internal perceived stress to marital satisfaction for both husbands and wives. This result on dyadic coping was in line with the study of Bodenmann (2005). The ability of the couples to work together to cope with the stressors of one or both of the couples is important for the satisfaction of their relationship.

Couples’ success and failure in adaptation (dyadic coping) depend on the interaction between vulnerability (neuroticism) and stress (perceived stress) of the couples. Under a trivial stress, differences in the level of vulnerability may not be significant. Couples with little or large vulnerability will survive; although the first type of couples may have a better marital satisfaction. However, under challenging condition where the couples face difficult problems, differences in the level of vulnerability play a major role. Couples with little vulnerability (low level of neuroticism) have several advantages compared to couples with large vulnerabilities. The first type of couples tends to have lower level of internal perceived stress. Couples with little vulnerability also have a better chance to engage in positive dyadic coping. Therefore, couples with little vulnerability have less levels of stress and higher probability of using positive dyadic coping. These two factors make them have a better chance to have a more satisfying relationship compared to couple with high levels of vulnerability.

Couples with little vulnerability have a better chance to have more satisfying relationships under moderate to high stress level. However, under extremely disrupting stress, their marital relationships can be badly affected. Their relationships may be better compared to couple with large vulnerability, but their coping skills do not help much. Besides effect that is
mediated by dyadic coping, internal perceived also has direct effect to marital satisfaction. Under great stress the direct effect of stress to marital satisfaction will be big also. Therefore, no matter how good are their coping skills, under devastating stress couples’ marital satisfaction will be badly affected.

References


Universities of the Islamic World: Catalysts for Global Sustainability Transformation –A Discourse Analysis

Hamoon Khelghat-Doost  
*Center for Global Sustainability Studies, Universiti Sains Malaysia*

Zainal Abidin Sanusi  
*Centre for Leadership Training*  
*Higher Education Leadership Academy (AKEPT Malaysia)*

Govindran Jegatesen  
*Centre for Global Sustainability Studies, Universiti Sains Malaysia*

Tunku Fatimah Firdaus Dato’ Tunku Fariddudin  
*School of Languages, Literacies and Translation, Universiti Sains Malaysia*

**Abstract**

Modern universities have been traditionally defined as centers for gaining knowledge, teaching and research. At the same time, the importance of knowledge and learning in Islam as the last divined religion is doubtless through numerous references to Quran, *Sunnah* and *Hadith*. This paper would argue the framework, concept and approaches in education for sustainable development further to discusses the core missions of higher education in educating, conducting research and providing services to the community as it has been defined by the Islamic thoughts and also by the UNESCO (1998).

**Keywords:** Islamic heritage, higher education, sustainability, Islamic knowledge, trans-disciplinary, transformation

**Introduction**

Universities have been traditionally defined as centers for gaining knowledge, teaching and research. Generally (through their teaching activities), universities offer specialized training for different sectors of society, as well as the education essential for personality development. Additionally, university education boosts the theoretical knowledge among different divisions of society as well as offers practical solutions to deal with societies' dilemmas. Conventionally, the traditional framework of a university consisted of a close circle of students and lecturers. This isolated compound is usually referred to as the "ivory tower." As an elite component of society, this circle had for a considerable amount of time in history been able to bend the wills of societies to suit its own agenda. Recent centuries however, have seen the once closely-knit relationship among universities, knowledge and ethics increasingly fading away.

The importance of knowledge and learning in Islam as the last divine religion is undoubtedly made clear through numerous references in the Quran, *Sunnah* (sayings and living habits of Prophet Muhammad) and the
Hadith (narrations originating from the words and deeds of Prophet Muhammad). By nature of its being, Islam is a religion based on knowledge - "He has taught you which you knew not," (Qur'an 2:239). This knowledge finds its source from the knowledge of the Oneness of God (Allah) together with the utmost trust and complete dedication to He who saves humanity. There are many references in Islamic resources (specifically in the Quran), in which human beings are encouraged to utilize their intelligence and power of thinking in spreading the words of Allah and to propagate good deeds in order to serve the communities they live in. In fact, the importance of knowledge in Islam is so crucial to it that according to Zaimeche (2003); the world *Ilm* (knowledge) is repeated 750 times in the Quran. The great importance of knowledge seeking and dissemination is well reflected in Prophet Muhammad's Hadith to “Seek knowledge from the cradle to the grave.”

Just a glance into the history of Islam reveals to us that at the time, there were public and private libraries in almost all Islamic cities with places such as Cordoba and Baghdad housing libraries with more than 400,000 books in each of them. As Scott (2007) argues, during Spain's Islamic age, education was merged into the fabric of society and the blessings of education enjoyed in all parts of Spain. There were over 800 schools in Cordoba alone where Muslim, Christian and Jewish students collectively acquired knowledge. Such a rich knowledge-based background bears testament to Islam as the ideal theoretical and operational framework for knowledge acquisition in the university of the 21st century.

However, in light of the needs of the new millennium, universities all around the world are beginning to realize their rapidly changing roles in a globalizing world. The full benefits of a university can only be made manifest when both the university and the society it is located in are organically linked together. In other words, a university's activities must be flexible enough to factor in the needs of its society - given society's rapidly changing needs and trends.

Recognizing the role which education can play in the development of societies that are more equitable and sustainable, the United Nations launched the Decade of Education for Sustainable Development in 2005. As mentioned in Section 6 of the 2009 Bonn Declaration, “Education for sustainable development is setting a new direction for education and learning for all. It promotes quality education, and is inclusive of all people. It is based on values, principles and practices necessary to respond effectively to current and future challenges.”

With large pools of disciplinary experts, high quality research facilities, state-of-the-art infrastructures and a cohort of students with varied academic interests, universities have considerable comparative advantages in promote sustainability within the communities they serve. For this reason, the universities of the Islamic world have the opportunity and advantage to refer
to the rich traditions of Islam, which has played a pivotal role in the creation and dissemination of knowledge throughout history. That being said, it is also important to understand that sustainable development is itself a very complex process, and as of such a single solution cannot be devised as a global standard. Nonetheless, with their core values of truth-seeking and insight for innovation, universities have a profound role to play in developing students’ capacity to adaptively manage a changing world.

Background

Although universities have an excellent record in serving the needs of both the university and the outside community, they are too often trapped in reconciling “conflicts of interest” which ultimately condemn universities as dumping grounds, scapegoats or testing platforms for different problems ranging from the environmental to the social as well as the economic. Fortunately, certain better-informed approaches have already been introduced to arrest this situation and change it for the better. Although some of these approaches have been partially successful in their respective efforts, what remains unchanged in most of these approaches is the element of unsustainability. This is most often seen at:

- The implementation process which creates weak synergies and coherencies, ending in an inability to recognize the diversity that exists among universities,
- The incomprehensiveness of the solution - resulting in more ad-hoc and reactive approaches.

Unfortunately, it is often the case that a number of Islamic nations have largely ignored their rich Islamic backgrounds in their attempts at generating and distributing knowledge throughout the modern world. In actuality, many of the challenges and issues which are currently faced by universities around the world have already been experienced and accordingly answered by the sustaining Islamic framework knowledge creation. The encouragement of Islam in acquiring knowledge was well-illustrated in Prophet Muhammad’s hadith, “Acquire knowledge, it enables its possessor to distinguish right from the wrong, it lights the way to heaven; it is our friend in the desert, our society in solitude, our companion when friendless: it guides us to happiness; it sustains us in misery; it is an ornament among friends and an armor against enemies” (Syed, 2001).

This paper argues the framework, concept and approaches in Education for Sustainable Development (EfSD) that are embedded in social, economic and environmental aspects and will attempt to answer the above challenges by utilizing the core teachings of Islam and its close relationship with knowledge. This issue will be further discussed with regard to the core missions of higher education in educating, conducting research and providing
services to the community as was defined by Islamic teachings and UNESCO. According to UNESCO (1998), the four goals of EfSD in higher education i.e. basic quality education, reorienting education for EfSD, creating and raising awareness on EfSD, and training for EfSD have already provided a holistic framework of action to replace the reactive and ad-hoc problem-solving approaches that are currently used by most universities around the world.

Education for Sustainable Development

The United Nations pronounced the years 2005-2014 as the Decade of Education for Sustainable Development (DESD) with the aim of incorporating the main elements, ethics and practices of sustainable development into all levels of education and learning. Most universities around the world still practice extremely disciplined methods of research, teaching and administration. This unfortunately is the main obstacle against implementing a concept as holistic as sustainability, with such regimented institutions being incompatible with the sustainability agenda – a challenge not easily overcome. As Cortese (1999) argues, “Many schools around the world are making important strikes toward necessary changes in education.” This reflects the intense efforts that go into transforming conventional higher education systems toward one centered on the tenets of sustainable development.

When utilizing the Brundtland (1983) definition of sustainable development as a pattern of development which “meets the needs of the present without compromising the ability of future generations to meet their own needs,” one is made aware that this concept is not limited to a specific number of disciplines or areas, but that it is applicable to a larger, global scale encompassing all communities and ecosystems – both man-made and natural, now and in the future.

With regard to the connection between the definition of sustainable development and the concept of education, Agenda 21 - the international action plan drawn up at the United Nations Conference on Environment and Development (UNCED, Rio, 1992) identifies education as a crucial component in bridging the divide. It clearly states that 'education is critical for promoting sustainable development' and that 'countries should stimulate educational establishments in all sectors, especially the tertiary sector, to contribute more to awareness building.' (Agenda 21, 1993, Chapter 36.3/36.10.d).

Although sustainable development may appear to be a relatively new concept in higher education, it is important to note that many sustainability-related activities and elements are already in place in existing curricula and structures of many universities around the world. Therefore, it is necessary to bear in mind that sustainability in higher education is not so much a revolution as it is an evolution of currently existing platforms. As Sterling
argues, sustainability does not necessarily require an 'add-on' to existing structures and curricula, but implies a change in the fundamental paradigm of our culture and hence also in our educational thinking and practices.

In a 2006 article on sustainable campuses in the Chronicle of Higher Education, Carlson argues that university initiatives on sustainability are only minor steps that aim to project the appearance of sustainability - in other words, a form of “greenwashing.” Echoing this sentiment are criticisms by certain groups who point out that universities are taking a very slow approach with regard to sustainability integration in comparison to corporate entities.

In light of such criticisms, Cortese’s (2001) definition of a sustainable university may prove invaluable in assisting us in our understanding of the fundamental elements of a sustainable university - “A sustainable university can be considered as an institute of higher education as a whole or as a part, that addresses, involves and promotes, on regional or global level, the minimization of environmental, economics, societal and health negative effects in the use of their resources in order to fulfill its main functions in teaching, research, outreach and partnership, and stewardship among others as a way in helping the society make the transition to sustainable lifestyles.”

From an Islamic point of view, Al-Khouli (2005) states that the success of sustainable development is dependent on the faith and practices of Islam which lays great emphasis on improving the condition of Earth at the hands of humanity, as humans are described as the Khalifa (vicegerents) of Allah on earth. He also adds that everything that was created by Allah was created in due proportion and is measured both quantitatively and qualitatively.

The importance of education for the betterment of society was also emphasized by the Prophet Muhammad, who asserted that for Muslims to fulfill their role in serving humanity, they must acquire knowledge for the common good. According to the Prophet (as narrated by Abu Hurayrah), “If anyone acquires knowledge of things by which Allah’s good pleasure is sought, but acquires it only to get some worldly advantage, he will not experience the odor of Paradise.”

When examined, it is easy to see that many elements of Education for Sustainable Development are in line with the core teachings and beliefs of Islam. The Islamic Declaration on Sustainable Development clearly outlined these elements at the 2002 World Summit on Sustainable Development, Johannesburg, “Indeed, the most beloved by Allah are the pious and the charitable, and the most hated by Allah are the one who wreck havoc on earth. Charity is every good deed that benefits people and takes care of the environment in which they live. It may be an act of social solidarity, a contribution to the restoration of peace and security or the eradication of poverty and unemployment, in a bid to achieve justice and equity through
collective participation in the development enterprise, motivated by religious, cultural and humanitarian drives.”

**Institutional Leadership and Planning**

A subject that plays a vital role with regard to sustainability and its connection to universities is the concept of creating a suitable and sustainable system of leadership and governance. From an Islamic point of view, leadership is considered an *amanah* (trust) which is placed on leaders by their followers. This phenomenon demonstrates the importance of democracy as one of the most vital elements in leadership. Through this framework, followers have the right to revoke the *amanah* from their leaders whenever it is felt that the leader is unable to fulfill their needs and requests. As is depicted in the following paragraphs, this serves as a reminder to leaders to not disregard the importance of practical duties and their implementation particularly those concerning themselves and their followers.

According to Lings (1983), the importance of Islamic leadership was emphasized by Prophet Muhammad who mentioned the following, “When three are on a journey, they should appoint one of them as their commander.” This journey does not necessarily imply a physical voyage per se, but can also be used as a practical metaphor with regard to new destinations embarked upon by humanity. The transformation of higher education toward sustainability is one such journey that requires diligent planning and appropriate leadership if success is to be attained. In achieving this goal, reviewing the existing international structure and agenda of Sustainable Development (SD) holds a high degree of importance.

The issue of institutional leadership for sustainable development covers a vast range of elements including (but not limited to) legislation, enforcement, rules and regulations, economic incentives and education. In order to come up with an inclusive leadership strategy for SD, it is important to consider all of the above elements comprehensively.

Understandably, another important aspect of leadership is to maintain a clear practical vision and mission. The setting up of a clear mission and vision can assist any institution on its route toward achieving its goals and objectives. From an Islamic point of view, a strong vision has always been a vital element of leadership. The vision of Prophet Muhammad to enlighten the Arab world from its then-state of *Jahiliyyah* (ignorance) led the Muslims to build one of the greatest empires the world has ever known - the Islamic Empire, stretching from India to Europe. Consequently, this vision turned the Islamic Empire and its inhabitants into a powerhouse where knowledge and the Sciences flourished and spread to the entire civilized world.

In contemporary settings, addressing sustainability and its related issues through their vision and mission statements can assist Institutions of Higher Education (IHEs) with better understanding and guidelines toward
sustainability action and implementation. Some of these visions and missions may include preparing students for service, leadership training, meaningful lifelong work and learning, assisting students in developing awareness of the environment, the commonality of human problems, and an appreciation of the diversity of the world thus leading students into continuous reflection on the gravity and value of their work and services to others.

Another significant issue which should be considered with regard to leadership for sustainability among institutions of higher education and which is also highly emphasized in the Islamic perspective is the concept of motivation and rewards. This notion is well-illustrated in the concepts of Jannah (paradise) and Jihannam (hell) whereby the believers and those who work in the path pleasing to Allah are always promised paradise as a reward. As the Quran says, “Whoever works righteousness - whether male or female - while he (or she) is a true believer verily, to him We will give a good life (in this world with respect, contentment and lawful provision), and We shall pay them certainly a reward in proportion to the best of what they used to do,” (Al-Nahl 16:97).

Islam’s system of motivation starts with the Ikhas Al-Niyyat (good intentions) and later on progresses to the practical aspects of the subject i.e. Ikhas Al-Amal (good practice). This is an indication that Islam takes into account a holistic approach with regard to the spiritual and practical aspects of motivation. Believers are aware that what they do in life is an Ibadah (worship) of Allah and that they will be rewarded by Him both in this world and the next. As an observer, Allah is omniscient and therefore believers are certain that their good deeds will be noted and rewarded. Such a belief system paves the way for a high sense of motivation which can translate itself into job productivity and commitment.

A large number of institutions of higher education, such as universities and colleges, regard the issue of sustainability or its related activities as an extra component to be added on to traditional university activities. It bears mentioning here that conventional sustainability related activities such as those concerning the environment (recycling, tree planting, etc) and/or community engagement (carrying out of courses or executive projects in communities) are more often than not voluntarily. As of such, there is a real need to consider appropriate techniques that will function to encourage and motivate university staff and students to involve themselves in such activities and to continuously sustain their participation. This is well-supported in Islamic ideology as was clearly emphasized by Allah to his followers on the importance of voluntary approaches and their rewards. It is for this reason that the Quran mentions, “Let there be no compulsion in religion. Truth stands out clear from error: whoever rejects evil and believes in Allah has grasped the most trustworthy handhold that never breaks. And God hears and knows all things,” (Baqarah, 2: 256).
From a contemporary point of view, the allocation of budget to sustain such activities can positively elevate the level of encouragement and participation among university staff in such activities; on the other hand, university leaders should also strongly convey the message that they are fully committed to sustainability initiatives. However, as argued by Blackburn (2007), the most powerful of motivators is a relatively simple and inexpensive one: the act of Caring. Most employees will go to great lengths to assist their organization and satisfy their manager if they are convinced that the management and company truly cares for their well-being. It is a fact that sometimes, emotional incentives can be much more powerful than financial ones. This is also a key element in Islamic motivation as depicted by Allah's nature as a Rahman (the companionate) and Rahim (the merciful) being.

Understandably, the implementation of sustainability at universities is not an easy task—especially so given their complex working structures. As such, such an endeavor would undoubtedly prove difficult if it was managed by a sole body within an institution. If successful implementation of goals and objectives is to be achieved—as per an institution's vision and mission, the formation of certain relevant teams and/or groups is essential in order to identify relevant issues which must be addressed and design an action plan/roadmap to address these issues accordingly.

Accordingly, Islam also greatly encourages the subject of Mashwarah (group consultation) in all stages of life ranging from those concerning family matters to greater nation-wide issues. For this reason, the Quran clearly encourages the concept of group consultation by stating, "And make Mashwara (consult) with them in affairs (of importance). Then when you have firmly decided, have trust on Allah. Verily Allah loves those who have trust (in Him)."

**Incorporating Sustainability into Facilities**

A major impetus for incorporating sustainability into facilities is the protection of the environment. From a Quranic point of view, it is stated that the “Environment, is Allah's creation. The creation of this earth and all its natural resources is a sign of His wisdom, mercy, power and His other attributes and therefore serves to develop human awareness and understanding of this creator,” (Ar-Ra`d, 13: 2-4; 21:79). Therefore, the harming of the environment can be interpreted as the harming of Allah's creations and clearly, such an action would be against His will. For this reason, Islam by nature supports efforts that aim to conserve the environment and its natural resources. The devastating effect of human activity on the environment was also well recognized in Islam as stated by the Quran, “When the earth is shaken with a (violent) shaking, and the earth
reveals what burdens her, And man says: What has befallen her? On that day she shall tell her story," (99:1-4).

When issues that are described in the Quran are taken into context with the current situation of the world, the concept of Green Buildings becomes a familiar term with regard to sustainability in an institution. There are many alternative terms and definitions concerning the concept of green buildings. According to the US Environmental Protection Agency (2009), "Green building is the practice of creating structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle from setting to design, construction, operation, maintenance, renovation and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. Green building is also known as a sustainable or high performance building." The notion of green building includes various aspects of the concepts that involve the built environment such as energy efficiency, water and waste management, materials, and so on.

Curricula

A crucial step in reorienting a university toward sustainability is to create a framework in which all parties involved in the process of teaching and learning can align themselves into the sustainability agenda. This framework should be designed in a manner which aims to increase the understanding of students on the issue of sustainability while simultaneously incorporating the elements of sustainability into the teaching material. The output of this framework should succeed in generating interest among students in working toward the cause of sustainability while encouraging them to identify ways in which they can contribute toward this cause.

Ideally, the framework should be divided into several sections in order to preserve the holistic nature of sustainable development: a research conducted by the NGO "Second Nature," may prove extremely useful in providing a platform to create such a framework. In their initiative, Second Nature identified certain themes of sustainability that they thought were central divided these themes into several sections. Among the themes identified were Scale, Human Connections to the Physical and Natural World, Ethics and Values, Function of Natural Systems, Technological and Economic Relationships to Sustainability, Motivating Environmentally Sustainable Behavior and the Pedagogical Strategies for Integrating Sustainability.

Keeping in mind the above, enabling a multidisciplinary approach at a university is also one of the most significant barriers in the face of sustainability implementation. Universities are traditionally known to clearly separate academic disciplines and as of such, creating a cross-faculty approach may seem like no easy task. Even where academic approaches are concerned, methods or recruitment and promotion of faculty staffs are
generally disciplined based due to the fact that many academicians feel more comfortable within the borders of their specialties rather than beyond them. Unfortunately, this situation also translates itself into the curriculum, with most universities confining the curriculum within the borders of various disciplines. This phenomenon makes it exceedingly difficult to introduce a multidisciplinary approach into a tertiary institution’s system.

Although it is important that academicians and students build specializations in a particular discipline, the holistic nature of sustainability should nonetheless still be given due recognition in universities. Academicians, researchers and students alike should be encouraged to involve themselves and contribute to team-oriented research and innovation. This would not only diversify certain aspects of a research but also enable it to become more beneficial for a larger group of audiences.

In light of this, a team consisting of university academicians, researchers and administrative staff should first be formed to define the concept of sustainability suitable for their institution and how it relates to the university. This definition may vary from one institution to the next depending on the university and its set priorities. Following the identification of this “committee,” the next step would be to create a set of sustainability indicators suited to the university’s priorities. The primary consideration that goes into developing these indicators is the agenda of sustainability integration into the core of a university’s affairs. Indicators provide specific information that enables proper decision-making and alerts project managers to emerging problems. In line with the SD agenda, indicators should be sustainability-focused in order to serve the purpose of evaluating the university’s position against the sustainability agenda.

Apart from modifying existing courses, it is also necessary to create courses that are directly relevant to both the different aspects of sustainability and the original disciplines. For this purpose, a group of skilled academicians and researchers should create a team to draft out a number of new courses based on an earlier assessment of the current curriculum. The assessment should be conducted with the help of in-house sustainability indicators with representatives of NGOs, the corporate sector, governmental agencies, alumni and even students involved in the initiative.

**Research and Scholarships**

During the Golden Age of the Islamic empire (between the tenth and thirteenth centuries) many places on earth were deprived of knowledge, while Islamic research and scholarship prospered and boasted an inspiring openness to the rational sciences, art and literature. It was during this period that the Islamic world made most of its contributions to the humanity’s scientific and artistic heritage. Other outstanding contributions were made in the areas of chemistry, botany, physics, mineralogy, mathematics, as well as...
astronomy, as many Muslim thinkers regarded scientific truths as tools which they may use to access religious truths. The importance of research in Islam is so high that the Quran mentions it directly in *Surah Zaumar* (39:33) that “And who so bringeth the truth and believeth therein such are the dutiful.”

Through this progressive process, Islam succeeded in introducing some of the greatest scientists and researchers the world had ever seen such as, Khawrazmi, Biruni, Avicenna, Razi, Kashani, and countless others. This demonstrated the strong backbone which formed the body of the Islamic world in the areas of research and scholarship. Some of the oldest centers for research in diverse fields of sciences were established within the cities of the Islamic world such as in Baghdad, Cordoba, Marv, Alexandria or the University of Fez in Morocco which was also known as the Qarawiyyin.

As Zaimeche (1996) explains, “The renown of such places attracted large numbers of students. In large numbers they flocked to the Mosque of Medina, which had one of the earliest and most advanced schools. Al Qarawiyyin attracted scores of students from all over Morocco, the rest of North Africa, Andalusia and even the Sahara. Generally they were housed by the successive Moroccan dynasties and the people of Fes.”

The importance of research as seen through an Islamic perspective can be translated into contemporary settings by the establishment of sustainability-related research centers that foster the implementation of sustainability. These research centers can act as focal points of sustainability both within a university and beyond it by producing skillful researchers and by coordinating sustainability-related researches in different faculties and centers within the same university.

Accordingly, this research centre can also host researchers and scholars from different disciplines within the university together with researchers from outside the university. The center will also prove strategic in publicizing its works and efforts on sustainability out to the public thus functioning as the sustainability pulse of the university. Furthermore, the centre can also ensure the smooth functioning of university administration within the sustainability framework by conducting trainings, roadshows and at a more advanced stage - sustainability auditing.

The above concept is also mirrored in a historical core Islamic concept - that of creating research centers throughout communities. As earlier mentioned, Islamic research centers which were developed at well-known locations gathered a large number of eminent Muslim and non-Muslim scholars of the day, either as students, lecturers, or both. Some of the graduates of the mosques of Muslim Spain included Ibn Roshd, Ibn Al-Sayigh, and Ibn Bajja. In Basra (Iraq), Al-Khallil Ibn Ahmad gave lectures on philosophy at a mosque, and among those listening to him was one of his students – Sibawaih, who went on to become one of the most famous Arabic grammarians of all time.
Historically, the poor and society’s bottom billion have been those who benefit the least from any kind of scientific or development in research. This is largely due to the manner in which conventionally, universities were too caught up in viewing the interests of the market. A sustainability focus however, adopts the holistic aim of serving humanity as its focal point. As is widely accepted, the social aspect is one of the main pillars of sustainable development and a pattern of development that does not consider the interests of society’s bottom billion cannot be defined as sustainable.

For this reason, the needs of the bottom billion must be considered with regard to research and development within a university as well as through its faculties and centers of excellence. A number of innovative measurements should be taken into consideration in areas such as research costs, intellectual property rights and certain legal aspects in order to make researches more relevant and beneficial to those trapped in the bottom billion. Researches should be designed in such a manner that no social sector is to be marginalized. Since improving humanity’s quality of life remains one of the main aims of science, this concept should be considered for all sectors of society – especially those in need.

This matter is certainly well-depicted in teachings of Islam - with social justice and equality being among the core elements of Islam. Attending the needs of the bottom billion has always been a prime objective of Islam as depicted in a Hadith narrated by Abu Moosa Ash'ari, where according to him, the Prophet said: "Feed the hungry, visit the sick and free the captives." The importance of looking after the interests of marginalized peoples was also well-captured in the Quran, "They give food, out of love for Him (Allah), to the poor, the orphan, and the slave, saying: We feed you only for Allah's pleasure - we desire from you neither reward nor thanks," (76:8,9). This commitment in supporting the marginalized and the bottom billion should also be integrated into processes of research and development which seek to answer the needs of society's distressed.

"The world has problems, but universities have departments," this criticism by Brewer in 1999 was aimed at the sciences for their detachment with regard to their research objects. Since then, the world has seen many concepts developed with the aim of solving upcoming complex societal issues. In order to collaborate on relevant societal issues with members of society, Science has had to actively engage the public – the Transdiciplinarity approach is seen as one way toward this goal: "Transdiciplinarity is always related to something; it is connected with concrete societal problems and means a higher quality of a research process by integrating practice experience," (Jahn 2005). Another instance of transdisciplinary research defined: "The core idea of transdiciplinarity is different academic disciplines working jointly with practitioners to solve a real-world problem," (Klein et al. 2001).
Community Partnership

Islam is one of only a few religions in the world with a high degree of emphasis on the role of the community in the social processes of life. As the Quran mentions, “And hold fast, all together, by the rope which Allah (stretches out for you), and be not divided among yourselves; and remember with gratitude Allah's favor on you,” (Al- Emran: 103). The phrase *Ummah* Wahida in the Quran ("One Community") refers to the entire unified Islamic world. What make Islam unique with regard to its outlook on the community is that the community (*Ummah*) in Islam is not founded on ethnicity, nationality, locality, occupation, kinship, or special interests. This holistic view of Islam regarding the community is in line with the holistic view that sustainable development holds of society and the sectors comprising it.

One of the most important aspects of sustainability in the context of a university is to ensure that the university’s knowledge and expertise are freely-accessible to the community. University academicians, researchers and students alike can all play important functions in spreading knowledge and expertise beyond university walls. They can impart on the community the skills needed to solve their problems while simultaneously exposing them to new ideas and innovations. Additionally, such efforts will assist the university in strengthening its ties with the communities surrounding it.

According to Rahman (2008), Islam states that “Knowledge sharing is an essential influence on the success of any knowledge management initiative.” The importance of knowledge sharing is well-reflected in Islamic thoughts and also in the Quran (Surah Al-Alaq: 1-5) which states the importance of knowledge and stresses on the obligation of every Muslim to seek, teach and share knowledge through systematic ways for divine objectives.

As pointed out by Mohd Nor (2005), the culture of knowledge-sharing among Muslims is demonstrated in the process of *dakwah*. Islam recognizes the concept of sharing beneficial knowledge via the preaching of the *dakwah* which is a great *Ibadah* (worship) toward Allah. The practice indirectly motivates followers to spread knowledge between colleagues in the community, including at the workplace in order to attain the recognition of Allah as the ultimate reward for the sharing of knowledge (*dakwah*).

Coincidentally, an important step in bridging communities to universities is the concept of Indigenous Knowledge. According to UNEP, Indigenous Knowledge (IK) can be broadly defined as the body of knowledge that an indigenous (local) community accumulates over generations of living in a particular environment. This definition encompasses all forms of knowledge – technologies, know-how skills, practices and beliefs – that enable the community to achieve stable livelihoods in their environment. A number of terms are used interchangeably to refer to the concept of IK,
including Traditional Knowledge (TK), Indigenous Technical Knowledge (ITK), Local Knowledge (LK) and Indigenous Knowledge System (IKS).

When Indigenous Knowledge is successfully integrated into the fabric of modern society, it is able to contribute significantly to the richness of a society, giving it history and a sense of identity in a world whose lines are increasingly blurred by rapid globalization and ongoing rigorous endeavors at separating Indigenous Knowledge from secular mainstream knowledge.

The Way Forward

As was argued in earlier sections of this paper, although universities can act as advocates in championing sustainability, the conventional structures of universities seem to be the main barrier in actual implementation of sustainability within a university. For this reason, a potential solution may be to create a multidisciplinary approach in which different sectors of the university can act and cooperate with each other toward the cause of sustainability.

The lack of a holistic sustainability framework is another important obstacle impeding sustainability integration at a university. This framework should be fully supported by a university’s senior officials and be created through a series of discussions with academicians and experts from various sectors in the university. Such a framework should contain the necessary elements for sustainability mainstreaming within the different sectors of a university and suggest appropriate action plans to drive the agenda forward.

Insufficient funding has often been blamed as a major barrier against sustainability implementation at a university. It is obvious that approximating adequate budgets for multidisciplinary researches and activities require a great amount of reshuffling with regard to budget writing. Although this problem is inevitable, perhaps apart from a university’s regular source of funding, new external sources of financing should also be considered. There are many institutions or organizations around the world that fund sustainability related projects and research within universities. These organizations should be approached and a new chapter in collaboration with external funders opened.

Apart from the two major groups of academicians and students, a university also consists of several different types of administrative staff and sectors. Directing these employees toward sustainability is also a major challenge in implementing sustainability into the texture of a university. It is necessary therefore to justify how sustainability can be accommodated into the current administrative systems of a university with the least amount of disturbances to the original framework of the university. This would entail overcoming the bureaucracy found in administrative sectors and reorienting them toward the university’s framework of sustainability. Such reorientation would encompass a wide array of activities ranging from the changing of the
selection criteria for new employees to the way these employees are to be evaluated and ranked. Understandably, this will also affect the rewarding systems of university employees as well.

Monitoring and Evaluation (M&E) are an integral part of any project cycle management. M&Es must be a continuous process, right from the start of the project to the very end – this is crucial to determine how well a project is in meeting its targets and the overall goal. M&E is sometimes extended to include a short post-project period beyond the completion of the final project report and external review. Additionally, good monitoring alerts project managers to emerging problems and provide valuable feedback to project planners, financial partners and implementers. The auditing tool used in the auditing process fully depends on the purpose of the audit being carried out. For this matter, the objectives and scope of the audit should be well defined before the audit takes place. Certain elements such as financial limitations are deciding factors on how deep or detailed the audit should be. The expertise of those conducting the audit should also be a matter of high consideration as well - on the other hand, there should also be a rough expectation of how cooperative the audited entity will be with the auditors. Since the auditing process requires massive data collection, bilateral cooperation is of vital importance.

Islam requires that Islamic nations (the ummah) collectively focus their attention on implementing science and technology in creating a new Islamic civilization. By so doing, the ummah can play a role in stopping the inequity, dissonance and breakdown existing in human life encompassing the social, economic, cultural, and political. On a holistic level, this mission is in line with the concept of sustainable development and can be pursued by universities via their existence as centers which disseminate knowledge. As centers of excellence, universities also function as think tanks, and research centers through which the Islamic perspective on science and technology can be advocated. This would certainly assist in enabling Islamic societies to once again rise and find their historic position within the scientific, economic and political contexts of today’s world. As reiterated by Prophet Muhammad: “The best form of worship is the pursuit of knowledge.”

References


Abu Said al Khudri bin Abu Daud, 2:721, Chapter 933, hadith #2602.

Al-Khouli, S. F. (2005). *On Islam’s Attitude towards Sustainable Development*. Economics Department, Faculty of Economics and Administration, King Abdulaziz University, Jeddah, Saudi Arabia
American College and University, Presidents' Climate Commitments. Available at:  
Browning, W. et al. (1995). Greening and the bottom line: Increasing productivity through energy efficient design. Special Publications 888, Gaithersburg, MD.  
Green Building Research Centre at University of California, Berkeley. Retrieved from http://greenbuildings.berkeley.edu/  
Rahman, R. (2008). Inspiring and encouraging organizational knowledge sharing through religion. World Congress of Muslim Librarian & Information Scientists  


**About the Authors**

Hamoon Khelghat-Doost holds a First Class Honors Bachelor of Arts in Humanities and currently is a postgraduate candidate at Universiti Sains Malaysia. He is also a Research Officer at Centre for Global Sustainability Studies. He has completed courses on Comparative Religion, Jewish Studies and Soviet Studies at Dalhousie University, Canada.

Zainal Abidin Sanusi (PhD) is a senior lecturer at the Department of Political Sciences at Universiti Sains Malaysia. He is also the Deputy Director of the Centre for Global Sustainability Studies at USM. He is also a visiting researcher at World Trade Organization (WTO) Research Centre, Aoyama Gakuin University, Japan.

Govindran Jegatesen holds an Honors Degree in English Language and Literature Studies with a minor in Southeast Asian Studies and is currently pursuing his Masters in Science and Environmental Journalism at Universiti Sains Malaysia. Concurrently, he is also working as a Research Officer at CGSS@USM.
Tunku Fatimah Firdaus Dato’ Tunku Fariddudin obtained her first degree in Information-Communication from Université de Nancy II, Nancy, France. She is currently affiliated to the French Language section of the School of Languages, Literacies and Translation at Universiti Sains Malaysia. She is also an Associate Fellow at USM Centre for Global Sustainability Studies (CGSS).
Engagement – Promoting Aspects of Teacher’s Instructional Style and Academic Self Regulated Learning

Rita C. Ramos  
*University of the Philippines Open University*

Ma. Joanna Tolentino-Anonuevo  
*La Salle College Antipolo*

**Abstract**

The study tested a model showing the effect of engagement-promoting teacher instructional style and self-regulated learning using Structural Equations Modeling (SEM). There were 335 fourth year high school students from a National high school in the Philippines participated in the study. Rating scale on Teacher Autonomy (Reeve, Jang, et. al., 2004), Teacher Structure (Skinner & Belmont, 1993), and the Academic and Self-Regulation Scale (Magno, 2010) were administered to the respondents. In the SEM analysis, the model shows the measures of goodness of fit (RMSEA=.075 and GFI=.95) indicating that the model is a good fit. It was found that the teacher’s instructional styles of providing autonomy support and teacher structure significantly affects the student’s utilization of academic self-regulated leaning strategies. Teachers manifesting autonomy supportive attitude structure results into an active student engagement, persistence, effort, and self-regulated leaning.

**Keywords:** Academic Self-Regulated Learning, Teacher Autonomy Supportive, Teacher Structure

**Introduction**

Self-regulated learning is an important component for student’s success in school (Zimmerman & Martinez-Pons, 1986). Most researchers agree that it refers to multi-dimensional and self-steering processes that target one’s own cognitions, feelings, and actions (Boekaerts, Maes, & Karoly, 2005). However, students’ learning experiences triggers expectancies and beliefs which might influence their choice and effort in the learning situation (Boekaerts & Cascallar, 2006). Aspects of teacher behaviour and instruction like clarity and pace, structure, autonomy support, teacher enthusiasm, humor, fairness, and teacher expectation about student’s capacity may have an effect on how student’s self-regulate their learning (Boekaerts & Cascallar, 2006).

The self-determination theory (Ryan & Deci, 2000, 2002) explains that teacher’s instructional style can be conceptualized along a continuum that ranges from highly controlling to highly autonomy supportive (Deci, Schwartz, Sheinman, & Ryan, 1981). Teachers who are autonomy supportive involve themselves in nurturing student’s intrinsic motivation, make use of non-controlling informational language and acknowledge the students’ point of view and affective states (Deci, et al., 1994; Mageau & Vallerand, 2003; Reeve & Jang, 2006; Reeve, Jang, et. al., 2004; Ryan & La Guardia, 1999).
Students who are exposed to this kind of teacher behaviour responds well to the learning task.

Autonomy-supportive teacher behavior brings about positive educational outcomes among students for it somehow satisfies the student's basic needs for autonomy (Hardre & Reeve, 2003; Reeve & Jang, 2006), competence and relatedness (Hardre & Reeve, 2003). Moreover, such teacher behaviour is perceived by students as acts that fosters beneficial teacher-student relationship (Reeve & Jang, 2006) and elicits student active engagement in the learning process (Reeve, Deci, & Jang, 2006). Level of student engagement may vary depending on the teacher's autonomy supportive behaviour (Reeve, et. al., 2004) because students are able to distinguish different ways on whether teachers support or suppress their need for autonomy in doing learning tasks or school work. Fostering relevance and suppressing criticisms are two identified important autonomy-supportive behaviour that students perceive as having positive influence in their cognitive and behavioural engagement in the learning tasks (Assor, Kaplan, & Roth, 2002).

Structure (Skinner & Belmont, 1993; Skinner et. al., 1998) refers to the amount and clarity of information that teachers provide to students about expectations and ways of effectively achieving desired educational outcomes. A teacher is said to provide effective structure if he/she presents clear, understandable, explicit and detailed directions, offers a program of action to guide students’ ongoing activity, and offers constructive feedback on how students can gain control over valued outcomes (Brophy, 1986; Skinner, 1995; Skinner & Belmont, 1993; Skinner et. al., 1998). In a motivational point of view, teacher-provided structure helps students develop a sense of internal locus of control, perceived competence and self-efficacy, mastery motivation, optimistic attributional style and perceived control in influencing academic outcomes (Skinner, 1995; Skinner, et.al., 2008).

Teacher autonomy support and teacher provided structure were found to be positively correlated (Jang, Deci & Reeve, 2010; Sierens, et. al., 2009), and both instructional styles strongly and positively affects student’s classroom engagement (Jang, Deci, & Reeve, 2010; Skinner & Belmont, 1993; Tucker., et. al., 2002). Autonomy supportive teachers predicted both measures of individual and collective students’ engagements while structure uniquely predicted student’s collective engagement. In a learning situation, a teacher who encourages intrinsic motivation and stimulates student interest, acknowledges feelings about the learning task, is approachable and welcomes feedback and inquiries, provides clear directions, guides the student in doing the task, scheduling activities, providing realistic academic goals result into student’s active individual and group involvement, effort and persistence to accomplish the task. Though previously perceived as distinct and somewhat opposite components of teacher instructional style, recent studies (e. g., Jang, Deci, & Reeves, 2006; Sierens, 2009) have somewhat identified its additive
contribution and influence in student learning engagement. Moreover, higher levels of engagement was achieved when elements of teacher structure is paired with moderate to high levels of teacher autonomy-supportive ways (Sierens, 2009).

Teacher structure and teacher autonomy supportive were perceive to have a synergistic effect on students’ engagement in planning, self-monitoring, and evaluating progress. Consistent with SDT, teacher structure in the learning context provides the students with the necessary know-how to facilitate self-regulation while teacher autonomy supportive behaviour motivates students to effectively engage in self-regulatory strategies (Sierens, et. al., 2009).

Social cognitive perspective on self-regulated learning (Bandura, 1988; Zimmerman, 1983) recognizes the influential role of environmental and motivational factors which are assumed to affect a learner’s utilization of self-regulated learning strategies (Zimmerman & Martinez-Pons, 1988). Learner’s self-regulated strategies may be enhanced through teacher’s application of various strategies in the learning context, particularly in the classroom setting (Magno, 2009; Magno 2010). Self-regulated leaning has been commonly conceptualized as a student’s active involvement in the learning process (Zimmerman, 1986); which involves the learner’s utilization of metacognitive, motivational and behavioural processes (Zimmerman & Martinez-Pons, 1988). The six model of self-regulated learning was conceptualized by Zimmerman and Martinez-Pons (1986: 1988). Magno (2010) validated the six model of academic self-regulated learning among Filipino respondents and uncovered a seventh factor structure of learning responsibility which reflect “a learner’s liability, accountability, and conscientiousness of the learning task and learning experience” (p. 70). The seven factor model of academic self-regulated learning strategies (Zimmerman & Martinez-Pons, 1986: 1988; Magno, 2010) are memory strategy (i.e., rewriting notes, making lists, use of graphic organizers, outlines and summarizes topics and visualize words), goal-setting (i.e., plan and keep track of schedules on daily and weekly activities), self-evaluation (i.e., openness to feedback, monitor self-improvements, open to change), seeking assistance (reaching out to friends, peers or classmates to verify, clarify and validate learning), environmental structuring (avoiding unnecessary situational distractions that may hinder learning), organizing (i.e., highlight important concepts and information, study at own pace) and learning responsibility (i.e., rechecking homework, concern for deadlines, prioritize schoolwork).

This study tested a model showing the effect of engagement promoting instructional styles of autonomy-supportive and teacher provided structure on the academic self-regulated learning of students in high school. This is explained in Deci and Ryan’s Self-Determination Theory (2000, 2002) where teacher’s instructional behaviour lies within a continuum of highly supportive and highly controlling, manifested in autonomy-supportive
behaviour and teacher-provided structure, which, taken together, forms a synergistic influence in student engagement, effort, persistence, and adaptation of self-regulated strategies. Research supported the notion that teachers play a crucial role in the cognitive and motivational functioning of students.

Method

Research Design

The study used an explanatory cross-sectional design (see Johnson, 2001). It is explanatory cross-sectional because it tested the model where teacher’s instructional style as it affects academic self-regulated learning. It explains how the phenomenon took place by looking into the causal factors it produced. The data are collected only once at a brief period (Johnson, 2001). Cross-sectional is appropriate for it describes the phenomena of relationships at a fixed point in time in which the instructional style and academic self regulation were measured (Polit & Hungler, 2004). Cross-sectional is appropriate in terms it provides a strong theoretical framework to guide the analysis.

Participants

The participants were 335 fourth year high school students from a national high school in the Philippines. This utilized stratified random sampling for the purpose of even distribution of participants among different section in science high school and regular class.

Instruments

Academic Self-Regulation Scale (A-SRL-S). The A-SRL-S by Magno (2010) is comprised of seven factor model consisted of 55 items specifically Memory Strategy (14 items), Goal Setting (5 items), Self Evaluation (12 items), Seeking Assistance (8 items), Environmental Structuring (5 items), Learning Responsibility (5 items) and Organizing (6 items). This comprised of a four-point scale (strongly agree = 4, agree, disagree = 2, strongly disagree = 1). This was derived from an initial principal component analysis. The framework was derived from Self Regulation from Zimmerman and Martinez-Pons (1988). It yields a high internal consistencies that was confirmed with a measurement model of good fit (RMR = .02, CFI = .94, and CFI .91). This was further validated by CFA and established by Polychotomous Rasch Model. The items were categorized into 14 (self evaluation, organizing and transforming, goal setting and planning, seeking information, keeping records and monitoring, environmental structuring, seeking peer assistance, seeking teacher assistance, seeking adult assistance, reviewing tests,
reviewing notes and reviewing texts) which was reviewed by educational psychologist and further revised. The Cronbach’s alpha of the seven categories ranges from .78 to .82.

Teacher’s Instructional Style (Jang, Reeve, & Deci, 2010) which comprised of two major categories (1) Teacher’s Autonomy Support is characterized by the teacher nurturing inner motivational resources, informational language and acknowledges, and accepts students’ negative affect; and (2) Structure where the teacher gives clear, understandable, explicit, and detailed directions; Strong guidance and feedback; Skill-building, and instructive. The two main categories yielded an ranges of interrater reliability of .72-.88 (autonomy support) and .84 -.88 (structure). Five raters observed classroom skills of teachers for 133 classroom visits. The raters worked in pair for each observation for classroom visits.

Procedure

A letter of permission was sent and approved by the school principal. The data collection was conducted last the Philippines. Both the Academic Self Regulation (A-SRL-S) and Teaching Instructional Style were administered to the following students of Special Science Class (SCC) and Basic Education Curriculum (BEC). This was facilitated by two teachers in their homeroom class time. The instructions were first given and explained in accord to the written guidelines in the questionnaire. This took them 15 to 20 minutes to answer the mentioned questionnaire.

Data Analysis

Pearson r was used to determine relationship between factors of Teacher’s Instructional Style and Academic Self Regulation.

The Structural Equation Modelling technique allows to test hypotheses and make inferences on causation about the effects of certain variable on the other without doing experimental manipulation and random assignment (Munro, 2001). However the causal statements should be theory driven otherwise this violates the theoretical basis of SEM. Structural Equation Models comprised of the following phases: Specification, Identification and Estimation. The Specification is the application of theories into theoretical model. This is being transformed into SEM with structural equations. It consist of causal path between latent variables.

The identification is validation of enough information (both theoretical and statistical) to estimate the unknown causal parameters between two latent variables in the SEM. The primary principle in statistical identification of the SEM is that known parameters (correlation or covariances) between latent variables in the model must equal or exceed the number of unknown parameters in the model (Munro, 2001).
The SEM estimation means to provide information about the unknown causal parameters. Thus SEM fit is the determining whether the model is statistically and theoretically fit of the individual causal parameters in the SEM and likewise the overall fit. The model fit is being reported as overall empirical fit of the measurement model as maximum likelihood chi-square or goodness of fit.

Results

The means, standard deviations, Cronbach’s Alpha, and intercorrelation of the factors are conducted determine the relationship and existing patterns among factors.

The means of the seven categories of the academic regulation ranges from 2.997 to 5.0 with standard deviations ranging from .4363 to .677. The Cronbach’s Alpha ranges from .79 to .83. The Teacher’s Instructional Style (Autonomy Structure and Teacher Autonomy Supportive).

Table 1
Means and Standard Deviations of the Components of Academic Self-Regulation and Teacher’s Instructional Style

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Strategy</td>
<td>333</td>
<td>2.99</td>
<td>.43</td>
<td>.79</td>
</tr>
<tr>
<td>Goal Strategy</td>
<td>333</td>
<td>2.93</td>
<td>.59</td>
<td>.78</td>
</tr>
<tr>
<td>Self Evaluation</td>
<td>333</td>
<td>3.13</td>
<td>.45</td>
<td>.83</td>
</tr>
<tr>
<td>Seeking Assistance</td>
<td>333</td>
<td>3.12</td>
<td>.49</td>
<td>.82</td>
</tr>
<tr>
<td>Environmental</td>
<td>333</td>
<td>3.02</td>
<td>.67</td>
<td>.65</td>
</tr>
<tr>
<td>Learning Responsibility</td>
<td>333</td>
<td>3.26</td>
<td>.53</td>
<td>.78</td>
</tr>
<tr>
<td>Organizing</td>
<td>333</td>
<td>3.26</td>
<td>1.5</td>
<td>.80</td>
</tr>
<tr>
<td>Autonomy Structure</td>
<td>333</td>
<td>5</td>
<td>1.6</td>
<td>.83</td>
</tr>
<tr>
<td>Teacher Autonomy Support</td>
<td>333</td>
<td>5</td>
<td>2</td>
<td>.91</td>
</tr>
</tbody>
</table>

The correlations among factors of Teachers’ Instructional Style and Academic Self Regulation shows significant results (p=.05). It was also noted that that the direction of the relationships is positive, however some have low correlations.
### Table 2

**Intercorrelation of the Teachers’ Instructional Style and Academic Self Regulation**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Memory strategy</td>
<td>.56**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Goal Strategy</td>
<td></td>
<td>.64**</td>
<td>.49**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Self Evaluation</td>
<td></td>
<td></td>
<td>.59**</td>
<td>.44**</td>
<td>.66*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Seeking Assistance</td>
<td></td>
<td></td>
<td></td>
<td>.38**</td>
<td>.22**</td>
<td>.31**</td>
<td>.43**</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Environmental structuring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.59**</td>
<td>.49**</td>
<td>.55**</td>
<td>.56**</td>
</tr>
<tr>
<td>6.</td>
<td>Learning Responsibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.62**</td>
<td>.41**</td>
<td>.60**</td>
</tr>
<tr>
<td>7.</td>
<td>Organizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.20**</td>
<td>.12*</td>
</tr>
<tr>
<td>8.</td>
<td>Autonomy structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.17**</td>
</tr>
<tr>
<td>9.</td>
<td>Teacher Autonomy Support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p<.01

One model was tested for this study with Teacher Instructional Style and Self Regulation with two and seven major components respectively. The RMSEA obtained was .075 which signifies that the model is a good fit. The model comprised of two latent variables with 11 observed indicators based on several theories. The initial measurement model showed correlations between the two latent variables in the model. It was also observed the causal paths from the latent variables. The chi square for the model was ($\chi^2 = 74.27$, df=26) suggesting the model fit the data well. The unknown parameter were also estimated since it has been presumed that the model was theoretically and empirically identified. The following measures specifically fit the index such as McDonald Noncentrality (.95), Population Gamma Index (.95) and Adjusted Population Gamma (.92) indicate good fit.
Figure 1. Effects of Engagement – Promoting Aspects of Teacher’s Instructional Style on Academic Self-Regulated Learning
The latent variables and the errors for each manifest variable are significant. This implies that the proposed factors are significant components of the construct measured. This means that all effects of one latent factor on another have significant paths. Thus the result shows that teacher instructional styles have a significant direct effect on Academic Self Regulation ($p<.05$). The model provides empirical data that teachers who are autonomy supportive bring positive outcomes among students (Hardre & Reeve, 2003; Reeve & Jang, 2006). Similarly with teacher autonomy support it was noted to be positively related to teacher structure (Jang, Deci, & Reeve, 2010; Sierens et al., 2009).

**Discussion**

The result of the study showed that the factors of teacher’s instructional style are significantly related to the factors of academic self-regulated learning strategies (Table 2). More importantly, the study was able to test the structural model that supports the connection between the two variables. The model showed goodness of fit in explaining the effect of teacher’s instructional styles in student’s utilization of academic self-related learning strategies which means that the observed values among variables approximated the model tested. The present study provides significant contribution to the existing literature in two ways. Firstly, the study established the additive or synergistic attributes of teacher instructional style of autonomy supportive and providing structure; as opposed to its portrayal in the literature as being either antagonistic, curvilinear, or independent (Reeve, Deci, & Jang, 2010), on its influence on student’s engagement in the learning process. Secondly, the impact of teacher’s autonomy supportive behaviour and teacher-provided structure as complementing influences is broadened into the cognitive and motivational processes involved in student’s self-regulated learning.

The findings of the study support previous studies demonstrating the effect of teacher autonomy supportive and teacher–provided structure in student’s active engagement in the learning situation (Jang, Deci, & Reeve, 2010; Assor, Kaplan, & Roth, 2002; Reeve & Jang, 2006; Reeve, et. al., 2004) and self-regulated learning (Sierens et al., 2009). Teacher’s autonomy supportive behaviour in the classroom situation that fosters student’s interest, enjoyment, sense of challenge, opportunities for initiative, providing choices, flexibility, identifies value and meaning of the learning tasks, acknowledges student’s affective states, openness and understanding, promotes students’ utilization of academic self-regulated strategies. Students are active participants in the learning process and therefore can distinguish and identify factors in the learning situation that may foster or inhibit satisfaction of their psychological needs for autonomy, competence and relatedness.
Students actively engage, exert effort and persevere despite difficulties and frustrations, when exposed to a classroom environment where teachers provide structure such as being instructive, gives understandable directions, clear action plan and learning goals, provide competence-relevant information and strong guidance, give constructive and skill-building feedback on progress. Non-threatening student-teacher relationship experienced by the students through provisions of supportive teacher behaviour and organized learning structure are conducive and essential to affect positive learning processes and outcome. Teachers who provide secure and supportive behaviour, promotes student autonomy, competence, and develop and maintains clear learning structure contributes and complements different the strategies utilized by students to regulate learning.

The result of the present study highlights the crucial role teachers’ play in the cognitive and motivational engagement of students in the learning situation. Students, though active agents responsible for their own learning, are still influenced by environmental factors that may either trigger, promote or hinder their “adaptive” or self-regulative processing. Self-regulation as perceived by educators as necessary for success in school and learning should be facilitated by the learning environment, specifically, through teacher’s effective and adaptive utilization of instructional styles which enables feelings of autonomy, competence and relatedness in the learning tasks.

References


