Journal of Institutional Research South East Asia

JIRSEA
Volume 14 Number 1, 2016
ISSN 1675-6061

Editor:
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EDITORIAL

Welcome to this first edition of JIRSEA for 2016. The New Year is already 6 months old by the time this edition is published and many of you would already be busy into your research projects as you do. We wish you the best with them.

I am pleased to open this edition with the **Best Paper** recognized at the SEAAIR 2015 Conference held in Hanoi and Ha Long, Vietnam in September/October 2015. Congratulations to the authors and presenters, Early Sol A. Gadong and Marierose R. Chavez from University of The Philippines, Visayas.

The other papers in this edition come from Australia, Fiji, Malaysia, Saudi Arabia, Thailand, and The Philippines, thus keeping to JIRSEA's tradition of bringing together results of research and surveys from various corners of the globe on matters related to institutional research. Hence topics covered in this edition range from blended learning to world-class quality for higher education in developing countries and to women participation in academia.

The need to bring together research and thoughts from both developed and developing countries is becoming even more critical given the inexorable technology development particularly as it impacts on education, teaching and learning. A wholesale transition towards complete technology-enabled education seems to be too revolutionary for most educators, both educationalists and practitioners, despite research results pointing to a favourable result. Intermediate steps such as *Blended Learning* are therefore introduced perhaps vindicating those who argued that evolutionary approach is culturally better implemented than a re-engineering approach. The latter refers to an abrupt change to systems and processes.

The other challenge confronting developing countries is not only the *traditional* digital divide we understood a decade or so ago which referred to the gaps between the technology *haves* and *have-nots* which to be sure still exist, but also the digital divide referring to the ability and skills to utilize available digital facilities. These are further exacerbated by problems of connectivity and broadband infrastructures such as internet speeds and even availability. These digital divides feed on each other that could keep those who are already disadvantaged to remain so if not for the ingenuity of many in such situation from whom those who are advantaged also learn.

We do hope that the eclectic collection of papers in JIRSEA's editions would build a bridge between institutional researchers in developed and developing countries.

Happy reading and do consider submitting papers to JIRSEA. Detailed information is available on our website http://www.seaairweb.info

Nirwan Idrus
Editor

PROCRASTINATION AND SENSE OF COMMUNITY: PATTERNS AND RELATIONSHIPS IN A BLENDED LEARNING SETTING

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Abstract

This paper reports the preliminary findings of a research project that aimed to understand emerging patterns in, and possible relationships between, participants' sense of community and their tendency to procrastinate in an online discussion forum (ODF) that supplemented a face-to-face undergraduate biostatistics class. Anchored on Bandura's social learning theory and its application on self-regulation, 32 students were asked to participate in an ODF to determine their tendency to procrastinate by noting their timeliness in posting in the forum. They were then asked to complete Rovai's Classroom and School Community Inventory (CSCI) to determine their sense of community. Descriptive statistics revealed that students have quite a strong sense of community and had the tendency to procrastinate. Moreover, Spearman's test of association showed that participants who had a deeper involvement with their peers were less likely to procrastinate. However, this study revealed that no dimension of sense of community significantly predicted students' tendency to procrastinate.

Keywords: sense of community, procrastination, computer-supported collaborative learning, self-regulation, online discussion forum, social learning theory, computer-mediated communication

Introduction

The mobility of online learning or e-learning platforms is one of the reasons why learning institutions and learners alike are drawn to them as a medium for education. This mobility, in theory, allows participants to engage in a learning experience anytime and anywhere. However, the perceived portability of this medium of instruction and learning has also allowed certain issues to come up. One of these is the issue of procrastination.

Computer-mediated communication (CMC) allows for asynchronous programs. That is, students and teachers do not communicate concurrently and so they tend to send and receive messages at different times. Thus, unlike in face-to-face instruction where the delivery-receipt-response process of information happens in a matter of literally seconds or minutes, this same process may take hours or days in asynchronous CMC. As such, the issue of procrastination becomes even more significant in an online platform than in traditional lecture classes.

Along with the issue of procrastination, an investigation on learners' sense of community given this additional dimension of learning and communication is warranted. Designs of future learning environments may be improved if patterns and associations between these two dimensions are established.

This paper reports the preliminary findings of a research project that aimed to understand emerging patterns in, and possible relationships between, participants' sense of community and their tendency to procrastinate in an online discussion forum (ODF) that supplemented a face-to-face undergraduate biostatistics class.

Literature Review

This study is anchored on Bandura's (1971) social learning theory, which suggests that learning occurs in a social context. Thus, learners must interact with their environment through observation and modelling in order to achieve cognition. For learners to be immersed on a social level, they must possess a sense of community. Bandura (1991) further applied this framework on self-regulation, proposing that these same social factors are responsible for learners to develop a system of engaging in intentional and purposive action. As such, this study posits that a lack of a sense of community among learners would prevent them from interacting with their environment, thereby inhibiting their participation in their academic endeavors.

There is still argument in the academic community on the exact definition of blended learning (Friesen, 2012). On a general note, blended learning may be defined as an educational program that utilizes computer mediated activities while still engaging in face-to-face instruction (Williams, 2002; Garrison & Kanuka, 2004; Staker & Horn, 2012).In the Philippines, purely distance education characterized by an entirely virtual instruction has yet to be fully integrated in the educational system. However, a number of distance learning courses provide opportunities for students to physically interact with their instructors, albeit this face-to-face interaction is limited. On the other hand, more and more instructors whose courses are set up for face-to-face interaction are integrating the use of CMC and computer supported collaborative learning

(CSCL) in their instructional paradigm because of the flexibility and ease of accessibility that the set-up offers (Kaur, 2013).

Aside from the overall portability of the online aspect of blended learning, research likewise shows that a combination of face-to-face and virtual interaction allows students to develop a stronger sense of community among each other than does traditional or purely online instruction (Rovai & Jordan, 2004).

McMillan and Chavis (1986) define sense of community as "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). McMillan (1996) revised this definition ten years later as "a spirit of belonging together, a feeling that there is an authority structure that can be trusted, an awareness that trade, and mutual benefit come from being together, and a spirit that comes from shared experiences that are preserved as art" (p. 315). In both these definitions, there is an emphasis on the benefits that can be derived from a feeling of belongingness in a community.

In the academic setting, one of these benefits is student learning. Education studies point to the importance of sense of community to learning. Primarily, Astin's (1999) theory of involvement posits that students learn more when they are more involved in both the academic and social aspects of the school experience.

The advent of distance education prompted the further emphasis on sense of community in the school setting. In these cases, researchers claim that a sense of community reduces feelings of isolation and enhances commitment and motivation to learn, especially from each other (McInnerney& Roberts, 2004; Xie, Durrington, & Yen, 2011; Garrison &Kanuka, 2004). This is especially noteworthy in the case of distance education, specifically, when the medium of instruction and learning is an online platform because some scholars believe that the apparent lack of a school that is concrete on a physical level delays the rate by which community is developed, if at all (Brown &Duguid, 1996).

One of the researchers who has done a considerable amount of research on sense of community in the academic setting is Alfred Rovai. He proposes locating sense of community in the classroom and school settings to emphasize the distinction between the two communities (Rovai, 2002). Furthermore, he recognized the need to look into two dimensions, the social dimension and the learning dimension, in this school community framework and developed the Classroom and School Community Inventory (Rovai, et al., 2004) that would measure sense of community in classroom and school settings and discriminate between classroom and school-wide communities.

While sense of community appears to be a more recent construct, there is little argument that procrastination has been an issue for a considerably longer period of time. Procrastination (from Latin pro, meaning "forward" and crastinus, meaning "of tomorrow") is a problem in self-regulation wherein one "voluntarily delay[s] an intended course of action despite expecting to be worse off for the delay" (Steel, 2007, p. 6).

Procrastination is prevalent in the academic setting, with 80-95% of college students admitting to intentionally delaying work that must be accomplished (Steel, 2007). Oftentimes, procrastination produces adverse results, negatively affecting grades, learning, and completion of coursework (Michinov, et al., 2011;Goda, et al., 2015; You, 2015). Thus, many studies have looked into the causes of procrastination so that the proper intervention may be applied to prevent its occurrence.

Where online learning is involved, the literature shows varied results. A study by Romano, et al (2005) reveals that procrastination is more prevalent in students who undertook blended learning courses than those who were enrolled in a fully online course. On the other hand, a study by Elvers, et al. (2003) shows that there were no significant differences in the level of procrastination done by students in an online and in a traditional course.

Studies on procrastination usually utilized an instrument that required participants to accomplish a checklist or questionnaire that investigate their behavior. For example, the Aitken Procrastination Inventory (1982) is a 19-item instrument where respondents have to check off one of five levels on a Likert scale (from 1 = Strongly Disagree to 5 = Strongly Agree) in order to evaluate their procrastination level. In their study on frequency and cognitive behavioral correlates of academic procrastination, Solomon and Rothblum (1984) developed the Procrastination Assessment Scale – Student (PASS). The scale assessed the prevalence of procrastination in six areas of academic functioning and required the participants to indicate on a 5-point Likert scale the degree to which they procrastinate on the task (Solomon & Rothblum, 1984).Lay's (1986) study made use of a true-false procrastination scale that contained items related to measures of disorganization and independent of need-achievement, energy level, and self-esteem.

More recently, Schouwenburg's (2004) Academic Procrastination as State Inventory (APSI) measured current level of procrastination behavior based on fear of failure, lack of motivation, and dilatory study behavior. In addition, Chow's (2011) study used a modified version of the 10-item Procrastination Scale developed by Schwarzer, Schmitz, and Diehl (2000) and found that academic aspirations did not significantly predict a student's tendency to procrastinate but satisfaction with school life did. Specifically, participants who were dissatisfied with school life were more likely to procrastinate, possibly due to lack of motivation and interest in their program of study (Schwarzer, Schmitz, & Diehl, 2000).

This study intends to produce new data clarifying possible connections between sense of community and procrastination.

Methodology

Participants

The study involved undergraduate students (n = 32, 24 females and 8 males) from two Biostatistics classes (laboratory component) of a university in Iloilo, Philippines. Their average age was 18.13 years (SD = 0.87). The students belong to the BS Biology degree program.

The study was conducted for one semester, over a period of 16 weeks. During the class orientation, the students were informed that they would be required to participate in an online discussion forum where they had to respond to prompts posted by the teacher. The students were treated ethically, in compliance with the standards set by the American Psychological Association (1992).

Design

The study utilized a case study design. Rather than using a checklist or questionnaire to determine the participants' tendency to procrastinate, the time for task completion was investigated. As such, the main source of data for this study is the online forum designed by the teacher using the Blogger weblog platform.

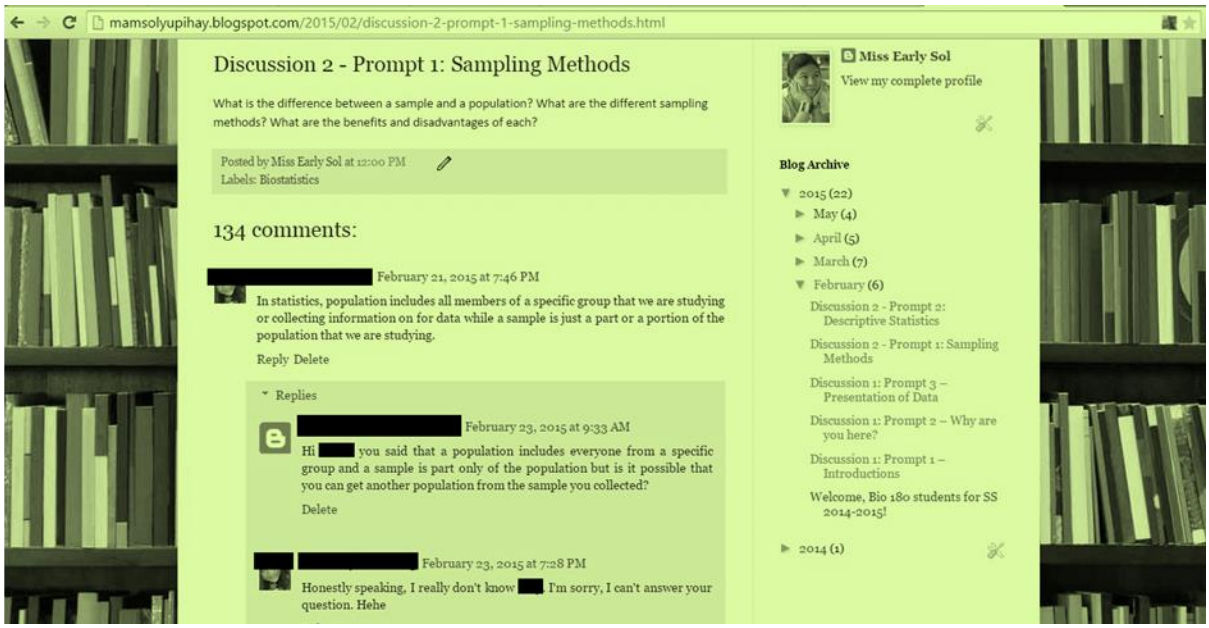

Figure 1 - The Blogger platform used in this study.

The initial prompt required students to introduce themselves to each other. Then, there were a total of five Discussion Periods, each lasting for two weeks, with two prompts for every period. Figure 1 shows a screen cap of the platform.

"Discussion periods" start on Saturday, with the teacher posting a prompt on two separate threads at 12:00 PM. Students' posts may be a response to the teacher-posted prompt, a response to a fellow learner's post, or a question related to the topic at hand, posed to either the teacher or to fellow learners, or a new idea altogether. Students have to make at least three posts in each prompt within the Discussion Period. While students may make more than one posting in a day, they were instructed to post on at least three different days. Thus, for this study, extra posts made on the same day were discarded.

Students' demographic characteristics were determined using a survey form.

Rovai's (2004) Classroom and School Community Inventory (CSCI) was used to measure participants' sense of community in the classroom and school settings. The CSCI is a 20-item Likert-type scale which is commonly used to measure sense of community in an academic setting. It was validated for content by experts in psychology and education. This scale was administered online using Google Forms. The items were reversed-score, where appropriate. Descriptive scores for each dimension were calculated by finding the arithmetic mean of the response to the items in the corresponding dimension, and are interpreted using the scale in Table 1.

Table 1: Scale for Interpreting the Measure of Sense of Community

Range of Score	Interpretation
1.00 - 2.30	Weak
2.31 - 3.69	Moderate
3.70 - 5.00	Strong

Timeliness of response was determined using the rubrics in Table 2. The variable was ordinal in nature, and thus, median values for each participant were used as measure for central tendency, in addition to computing frequencies and percentages. Moreover, the correlation ratio eta-squared η^2 was used to measure association between timeliness of response and sense of community.In addition, responses that were posted in an "Early" or "Timely" manner indicated the absence of procrastination while responses that were posted "Just in Time" or "Late" indicated that the students procrastinated. Backward logistic regression was then used to test which components of the CSCI predicted timeliness of response.

Table 2: Rubrics of Timeliness of Students' posts

Order of Post	Did Not Procrastinate		Procrastinated	
	Early (1)	Timely (2)	Just in Time (3)	Late / None (4)
First Post (P1)	Within 24 hours of posting prompt	After 24 hours of posting prompt – Before Day of P1 Deadline	Day of Deadline	After deadline / none
Second Post (P2)	Day of Deadline of P1 or Earlier	After DOD of First Post – Three days before P3 Deadline	Day Before P3 Deadline	Day of P3 Deadline / None
Third Post (P3)	Within 7 days of posting prompt	After 7 days of posting prompt – Day before P3 Deadline	Day of P3 Deadline	None

Results

Patterns in Sense of Community and Procrastination

Students' responses indicated that they had a strong sense of community in all dimensions as shown in Table 3. Furthermore, the table shows that students have the strongest sense of community in the school learning dimension (Mean = 4.33, SD = .41) and the least sense of community in the social community dimension (Mean = 3.81, SD = .40). These results suggest that learners generally perceive themselves as sharing the same norms and values as those of their school (Rovai, et al, 2004). In addition, students quite strongly believe that their educational goals and expectations are met by their learning institution.

Table 3: Mean Score of Sense of Community Responses

Dimensions of Sense of Community	Mean	SD
Classroom Social Community	3.79	0.52
Classroom Learning Community	3.86	0.31
School Social Community	3.83	0.49
School Learning Community	4.33	0.41
Classroom Community	3.83	0.34
School Community	4.08	0.32
Social Community	3.81	0.40
Learning Community	4.09	0.29
Overall Sense of Community	3.95	0.28

SD = **S**tandard **D**eviation

Moreover, when each item in the CSCI was investigated, findings indicate a strong sense of community for all items, except in "I feel that this course results in only modest learning" item as shown in Table 4. In addition, students indicated strongest sense of community in both "I feel that this school gives me ample opportunities to learn" and "I feel that this school does not promote a desire to learn" CSCI items. These findings seem to support initial findings of Rovai and Jordan (2004) which suggest that blended learning fosters a stronger sense of community than does a fully online course. However, since the current study's design does not provide a control group for which a comparison may be made, this strong sense of community may not be entirely attributed to the extra amount of time that the students spent on the ODF.

Table 4: Mean Score of Responses on CSCI Items

CSCI Items	Mean	SD
I feel that students in this course care about each other	3.72	.772
I feel that I receive timely feedback in this course	4.00	.622
I feel connected to others in this course	3.75	.762
I feel that this course results in only modest learning	2.78	.832
I trust others in this course	3.94	.716

CSCI Items	Mean	SD
I feel that I am given ample opportunities to learn in this course	4.22	.608
I feel that I can rely on others in this course	3.69	.931
I feel that my educational needs are not being met in this course	4.03	.595
I feel confident that others in this course will support me	3.84	.574
I feel that this course does not promote a desire to learn	4.28	.581
I have friends at this school to whom I can tell anything	4.25	.762
I feel that this school satisfies my educational goals	4.50	.622
I feel that I matter to other students at this school	3.72	.634
I feel that this school gives me ample opportunities to learn	4.47	.567
I feel close to others at this school	4.06	.669
I feel that this school does not promote a desire to learn	4.47	.621
I regularly talk to others at this school about personal matters	3.38	.976
I share the educational values of others at this school	3.91	.689
I feel that I can rely on others at this school	3.72	.683
I am satisfied with my learning at this school	4.28	.581

With regards to students' tendencies to procrastinate, Table 5 shows that out of a total of 960 chances to post, 14.06% (n = 135) were made Early, 28.13% (n=270) were Timely, 29.06% (n=279) were Just in Time and 28.75% (n=276) were Late.

Table 5: Distribution of Timeliness of Responses

Procrastinated?	Timeliness of Response	f	%
No	Early	135	14.06
	Timely	270	28.13
Yes	Just in Time	279	29.06
	Late	276	28.75
Total		960	100.00

Furthermore, based on the median timeliness scores, 53.1% (n = 17) of the students were found to have procrastinated in the ODF. This is modest compared to initial findings of Steel (2007) who pegged the estimate to be around 70 – 80%. One of the reasons for this may have been the fact that during orientation, students were informed that postings made in the ODF were graded, and that adherence to deadlines should be strictly observed. Additionally, the group of

participants had a strong sense of school community. This positive disposition about their school life may be a reason for their diminished tendencies of procrastination (Chow, 2011).

Relationships between Sense of Community and Tendency to Procrastinate

This study wanted to see whether or not specific relationships existed between students' sense of community and their tendency to procrastinate. Using Dancey and Reidy's (2004) categorization, results of spearman's test reveal that there was no significant association between students' overall Sense of Community and their Timeliness of Response. However, further investigation revealed that Timeliness of Response had a significant negative association with Social Community ($\rho = -.441$, $p = .006$). This indicates a moderate strength of association (Dancey& Reidy, 2004).

Each of the item in the CSCI was likewise subjected to a test for association with Timeliness of Response. Among the 20 items, three were found to be significantly associated with Timeliness of Response. Item 3 on the CSCI Classroom Form --- I feel connected to others in this course. --- has a moderately strong association with Timeliness of Response ($\rho = -.310$, $p = .042$). Similarly, Item 3 on the CSCI School Form --- I feel that I matter to other students at this school.--- also has a moderately strong association with Timeliness of Response ($\rho = -.399$, $p = .012$). Both of these associations are negative, which indicates that students who had a strong sense of community in these dimensions were less likely to procrastinate. They are also both parts of the Social dimension of sense of community.

These results show a similar trend with Chow's (2011) study, suggesting that students with a strong sense of community regarding their spirit, trust, safety, trade, interdependence, and sense of belonging are less likely to procrastinate. Understandably, students who feel that they have a considerably healthy social network in school would be more attuned to performing academic tasks on time.

Another item that was significantly associated with Timeliness of Response was Item 10 on the CSCI School Form --- I am satisfied with my learning at this school. --- which showed moderate association ($\rho = .358$, $p = .022$). Interestingly enough, this association was positive, indicating that students who were more satisfied with what they learned in school were more likely to procrastinate.

The study likewise looked into the dimensions of sense of community as possible predictors of procrastination. However, no significant predictors were found.

Conclusion

This study looked into notable patterns in, and relationships between, students' sense of community and their tendency to procrastinate in a supplemental ODF for an undergraduate biostatistics class.

Findings reveal that students have quite a strong sense of community, which appears to be a prevailing characteristic of blended learning. This may be due to the additional opportunities for

establishing belongingness and meeting members' needs. Students had the freedom to converse with one another in the forum without being hushed by their teacher or their peers, unlike in a traditional face-to-face setting.

With regards to the issue of procrastination, findings show that only half of the students opted to put off posting to the forum. This is lower than prevailing estimates and may be attributed to the compulsory nature of the task. Still, this value may be considered quite significant, demonstrating that procrastination very much persists among the participants involved.

On emerging relationships, this study showed that participants with a strong sense of social community were more likely to post later in the ODF. As such, those who had a deeper involvement with their peers were less likely to procrastinate compared to those who were more detached from their social network in school.However, this study has not produced significant results in terms of identifying dimensions of sense of community that predicted students' tendency to procrastinate.

Results of this study provided new insights on understanding the nature of sense of community and procrastination among students. It is worth mentioning, however, that due to the absence of random assignment and a control group in this study, findings should be viewed as preliminary and interpreted in view of this limitation, among others. As such, future research may look into exploring sense of community, along with other covariates such as demographic characteristics and environmental factors, as a predictor of procrastination. Moreover, tests conducted over a longer period of time and using other means to measure sense of community and procrastination are strongly suggested.

Acknowledgement

The authors would like to express their heartfelt gratitude to the University of the Philippines for the UP System Research Dissemination Grant. The grant was used to subsidize the travel and registration expenses for the 2015 Southeast Asian Association for Institutional Research (SEAAIR) Conference at Hanoi, Vietnam, where this study was first presented and was awarded the Conference's Best Paper.

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THE RELATIONSHIP OF SOCIAL SUPPORT AND MOTIVATION WITH UNIVERSITY ADJUSTMENT AMONG YEAR ONE TO YEAR THREE TERTIARY UNDERGRADUATES IN MALAYSIA

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Abstract

This study aimed to explore the relationship of social support and motivation with university adjustment among Year One to Year Three tertiary undergraduates in Malaysia. Purposive and quota sampling methods were used to recruit 300 tertiary students whom were asked to fill out a questionnaire consisting three measurements: academic motivation scale, shortened version of the interpersonal support evaluation list, and college adaptation questionnaire. The results showed significant correlation of university adjustment with social support and motivation, and a high stability of these relationships across three different years of study. Further analyses suggested that two motivational factors are mediators of social support's effect on university adjustment, and year of study was not a significant moderator for the effects of social support and motivation on university adjustment. Additional strategies to improve university adjustment should focus on reinforcing social support from parents, lecturers, and peers among undergraduates with university adjustment problems. Further focus should be placed on reinforcing academic motivation by introducing additional workshops and flexible regulations for changing subjects of study.

Keywords: Social support; Motivation; undergraduates; Malaysia

Introduction

The number of students enrolled in tertiary education in Malaysia has increased from 277 185 in 2003 to 373 209 in 2013 (Malaysia Ministry of Higher Education, 2015). Nonetheless, it is estimated that 3 000 out of 168 000 college students who pursued their studies for certificate and diploma would not be able to graduate, and only 83 000 out of 100 000 students who went for their degree program are able to finish their program (Lajiun, 2012). In other words, the dropout rate of tertiary undergraduates in Malaysia is about 17.5% (Govindarajo & Kumar, 2012) and is therefore alarming.

The high attrition rate among Malaysian tertiary students can be attributed to both internal and external factors, such as lack of interest, lack of facilities provided by the university, as well as failure in examinations, financial issues, and quality of teaching (Willcoxson, Cotter, & Joy, 2011). Some studies found that junior and senior students experience low motivation in learning; These students, who are unable to adjust well in the university, often show poor adaptation behaviors such as tardiness, unrealistic desire, and authority of hostility, and thus their study habits, involvement, and psychological experiences are poor (Elias, Noordin, & Mahyuddin, 2010; Howey, 2008).

Lack of social support and motivation are the two main psychological factors that have been attributable to this attrition rate of tertiary students. Motivation is generally defined as "the forces acting on or within an organism to initiate and direct behavior" (p.16) (Petri & Govern, 2004). Self-determination theory (SDT) provides a comprehensive theoretical framework in explaining human behavior through the understanding of human motivation. SDT proposes that the type or quality of a person's motivation is more important than the total amount of motivation, and autonomous motivation and controlled motivation are the most central distinction in SDT (Ryan & Deci, 2000). Autonomous motivation includes both intrinsic motivation and types of extrinsic motivation, while controlled motivation consists of external regulation that one's behavior acts as a purpose of external contingencies of rewards or punishment (Deci & Ryan, 2008).

There are three major types of motivation: intrinsic motivation (IM), extrinsic motivation (EM), and amotivation (AM). IM is subdivided into three parts, which are intrinsic motivation to know (IMTK), intrinsic motivation towards accomplishment (IMTA) and intrinsic motivation to experience stimulation (IMTES). The subdivided parts of EM are extrinsic motivation external regulation (EMER), extrinsic motivation introjected regulation (EMIN) and extrinsic motivation identification regulation (EMID) (Vallerand et al., 1992).

IM refers to the involvement to an activity where an individual will feel pleasure and satisfaction from participation itself. IMTK can be defined as motivation that stress on the satisfaction of an individual obtained from exploring, learning, and trying to understand something that is new. IMTA refers to the activity an individual engages in, in order to seek pleasure and satisfaction when he or she attempts to achieve or create something new. IMTES occurs when someone engages in activities for the purpose of experiencing stimulating sensation such as sensory pleasure, fun, and excitement that comes from the involvement in the activity (Vallerand et al., 1992).

EM is achieved when individuals perform an activity for the purpose of gaining rewards or attaining some separable outcome (Ryan & Deci, 2000). EMER usually occurs when the behavior is externally regulated with the external contingencies such as rewards or constraints where the reasons for performing the behavior have not been internalized at all. EMIN occurs when the behavior is usually controlled by the desire in order to avoid feelings such as guilt. Since individuals start to internalize the reasons for how they act, the source of control comes from the individual. EMID occurs when a person has a perception that the behavior is the result of one's choice. In this regulation, the behavior is being regulated internally in a self-determined way(Ryan & Deci, 2000).

Amotivation refers to the absence of motivation in which individuals will experience a sense of incompetence and uncontrolled expectations. Individuals will feel that participation in an activity has neither meaning nor reward, thereby causing them to eventually stop participating. Amotivated individuals usually will perceive a lack of contingency between their behavior and outcomes (Vallerand et al., 1992).

In the findings, amotivated behaviors of university students were found to be attributable to poor psychosocial adjustment and general well-being, and high levels of perceived stress. In contract, intrinsically-motivated behaviors of university students were associated with lower perceived stress scores while studying (Baker, 2004).

According to SDT, the transformation of external regulation into self-determined forms of regulation, as well as the stability of IM depends on three aspects: the satisfaction of the basic, innate psychological needs for support of autonomy, support of competence, and social support. In other words, social support is an important factor that associates with motivation.

Social support is a broad concept covering the availability of significant others who offer support and/or the perceived exchange of such support (Verheijden, Bakx, Van Weel, Koelen, & Van Staveren, 2005). According to ecological theory, development is the result of interactions between characteristics of the person and the environment over the course of one's life (Bronfenbrenner & Morris, 1998). Therefore, face-to-face interaction with and support from family members and peers are among the most common and important proximal processes for young adults, and thus social support is an important factor relevant to academic outcomes (Meeus, 1996).

Some studies have explored the relationship between social support and adolescent adjustment and found that social support are relevant to some behavioral and emotional problems (Dunn, Putallaz, Sheppard, & Lindstrom, 1987; Garnefski & Diekstra, 1996). These problems include delinquency (Licitra-Kleckler & Waas, 1993), withdrawn behavior and hopelessness, depression (Cheng, 1997), and lower self-concept (Wenz-Gross & Siperstein, 1998) and academic self-concept (Dunn et al., 1987; Wenz-Gross & Siperstein, 1998).

In addition, senior students were found to be better adjusted than junior students. This could be because a junior student is undergoing a transition period when they need to face problems of making new friends, losing interest in studying due to discrepancy between their expected and actual university life, and finding difficulties in studying due to heavy workload and difficult learning subject (Kantanis, 2000). However, Fazey and Fazey (1998) assessed university students in a two-year longitudinal study and discovered a surprisingly high level of stability for the sub-scales of intrinsic and extrinsic motivation.

The high level of stability between motivational factors and university adjustment can be because tertiary undergraduates are granted more autonomy in the university and subjects compared to primary and secondary students, and thus there is increased consistency in their personal interest and subjects of learning. Furthermore, undergraduates are more mature and thus

more certain about their actual goals and abilities (Baumert & Köller, 1998; as cited in Müller & Palekčić, 2006)).

Aims of Study

According to Lewalter (as cited in Müller & Palekčić, 2006)), most studies that explored the relationships between social support, motivation and adjustment were based on elementary and secondary education. Not only is the research on tertiary education sparse, but also fewer longitudinal studies were conducted. This study is therefore aimed to explore the relationships of motivational factors and social support with university adjustment among Year One, Year Two, and Year Three students in Malaysia. The research questions are as follows:

1. Is there any difference among the years of study in university adjustment, motivation, and social support?
2. What are the relationships between university adjustment, motivation, and social support?
3. Do motivation and social support serve as significant predictors of university adjustment?
4. Does motivation serve as a mediator of social support's effects on university adjustment?
5. Do years of study serve as moderator of the effects of social support and motivation on university adjustment?

Method

Participants

Three hundred undergraduates (104 male and 196 female) from a university in Malaysia, ranging from 18 to 23 years old, were recruited as participants for this study. One hundred participants were recruited for each year of study (Year One to Year Three).

Instruments

The survey questionnaires were separated into four parts:

(a) demographic information,
(b) Academic Motivation Scale,
(c) Interpersonal Support Evaluation List, and
(d) College Adaptation Questionnaire.

Demographic information.

Basic background information collected from the participants included gender, age and year of study.

Academic Motivation Scale (AMS).

This scale comprises 28 items in seven subscales. Three subscales assess IM, another three subscales assess EM, while the remaining subscale assesses AM. Participants provided their responses by way of a 7-point Likert Scale (1=does not correspond at all, 7=corresponds

exactly). A previous study found a high internal reliability (α = 0.81) and test-retest reliability (r = 0.79) of the scale (Vallerand et al., 1992). The internal consistency of AMS in this study was shown in Table 1.

Table 1 **- Internal Consistencies of Measurements**

Measurements		Cronbach's alpha
CAQ		0.84
ASM		
	IMTK	0.84
	IMTA	0.79
	IMES	0.74
	EMIR	0.79
	EMIN	0.79
	EMER	0.79
	AM	0.82
ISEL-12		0.79

Interpersonal Support Evaluation List (ISEL). We used the shortened version of the ISEL to measure social support (Cohen, Mermelstein, Kamarck, & Hoberman, 1985). This measurement consists 12 items in a 4-point rating scale (1 = definitely false, 2 = probably false, 3 = probably true, 4 = definitely true). Previous studies reported the internal consistency of ISEL-12 is around 0.8 to 0.9 (Simmons & Lehmann, 2012) and it was 0.79 in this study. Therefore, the mean of the total score was used to indicate the overall social support perceived by respondents.

College Adaptation Questionnaire (CAQ). CAQ was used to assess how well students have adjusted to university life. The CAQ is a self-report instrument that consists of 18 statements scored on a 7-point scale. The participants were asked to rate as to what extent each item described them appropriately on a 7-point scale (1= not applicable to 7 = very applicable). Ten statements reflect poor adjustment, whereas eight statements reflect good adjustment. The CAQ scores are obtained by reversing the scores on the 10 poor adjustment items and then summing across all 18 items. A higher score indicates better university adjustment. Previous studies have reported good reliability of CAQ (r = 0.83). The Cronbach alpha of this study is 0.84.

Procedure

Purposive and quota sampling methods were used to select and recruit participants for this study. Only undergraduates of the university were selected and 100 participants from each level of study were recruited. Participants were recruited from different classes, the library and university café. Participants were approached and asked about their years of study, and then briefed about the purposes of the study, the confidentiality of the responses they provide, and their approval to

fill out a questionnaire that took approximately 10 to 15 minutes to complete. Once the participants had completed the questionnaire, the researchers thanked the participants for cooperation. After collecting 300 questionnaires based on the quota set, the data was then keyed in and analyzed using SPSS ver. 16.

Results

University Adjustment, Motivation, and Social Support across Years of Study

We used multivariate program to examine any difference among years of study in terms of university adjustment, motivation, and social support. As shown in Table 2, a significant difference was found in the results for university adjustment, $F(2, 297) = 3.24$, $p = 0.041$. However, the post-hoc Tukey HSD analyses did not find any significant difference among the years of study. Nonetheless, a further trend analysis suggested that there is a significant positive linear trend among years of study in university adjustment, $F(1, 297) = 4.64$, $p = 0.032$. The contrast tests of Year Three with both Year One and Year Two suggested that the university adjustment of Year Three ($M = 3.47$, $SD = 0.58$) is better than Year One ($M = 3.31$, $SD = 0.47$) and Year Two ($M = 3.31$, $SD = 0.56$), $t(297) = -2.54$, $p = 0.012$.

Table 2 The Results of CAQ, AMS and ISE-12 by Years of Study

		Year 1		Year 2		Year 3			
		M	**SD**	**M**	**SD**	**M**	**SD**	**F**	**p-value**
CAQ		3.31	0.47	3.30	0.56	3.48	0.58	3.24	0.041
AMS									
	IMTK	5.06	0.89	4.97	1.02	4.98	1.01	0.23	0.797
	IMTA	4.54	0.90	4.51	1.00	4.58	0.97	0.124	0.884
	IMES	4.35	0.95	4.31	0.98	4.18	1.10	0.76	0.47
	EMIR	5.21	0.96	5.06	1.07	5.12	0.88	0.62	0.54
	EMIN	4.56	1.15	4.39	1.09	4.46	1.11	0.59	0.557
	EMER	5.04	1.14	4.96	1.07	5.04	1.11	0.19	0.821
	AM	2.52	1.16	2.64	1.35	2.50	1.24	0.35	0.703
ISE-12		2.78	0.48	2.83	0.46	2.84	0.47	0.46	0.631

Correlations between University Adjustment with Social Support and Motivation

As shown in Table 3, social support and the five types of motivation have a significant positive correlation with university adjustment. AM is negatively correlated with university adjustment, while no significant correlation was found between EMER and university adjustment.

Table 3 ***Pearson Correlations between University Adjustment with Social Support and Motivation (N=300)***

		CAQ	ISE-12
ISE-12		0.441	
AMS			
	IMTK	.394**	.136*
	IMTA	.345**	.200**
	IMES	.253**	0.093
	EMIR	.215**	.190**
	EMIN	.149**	0.111
	EMER	0.012	0.084
	AM	-.541**	-.301**

Note: * $p < 0.05$ ** $p < 0.01$

Motivation and Social Support as Predictors of University Adjustment

We used the multiple regression hierarchical models to find out the significant predictors of adjustment. The six types of motivation, excluding the EMER which is not significantly correlated with adjustment, were entered first by using stepwise method, so that we can rule out the insignificant predictors among the six types of motivation. Social support was entered next by using enter method. The results showed both regression models are significant, $F (2, 297) = 72.83$, $p < 0.001$ for model one and $F (3, 296) = 69.24$, $p < 0.001$ for model two, which explained 32.9% (model one) and 41.2% (model two) of total variance. In model one, which examined the six types of motivation, only AMTK and AM emerged as significant predictors. Meanwhile, model two showed AMTK, AM, and social support emerged as significant predictors (see Table 4).

Years of Study as the Moderator of the Effects of Social Support and Motivation on University Adjustment

We used the multiple regression hierarchical models to find out whether years of study served as moderator of the effects of social support and motivation on university adjustment (see Table 5). AMTK, AM, and social support were entered first, then years of study entered next, followed by the interaction effects of years of study with social support and motivation. The results showed the three models are significant. The changes of explained total variance was significantly improved from model one to model two, but not significantly improved from model two to model three. The results also showed the non-significant effects of all the three interaction effects in model 3. In other words, the results rejected years of study as moderator of the effects of social support and motivation on university adjustment.

Table 4 Multiple regression analyses of Motivation and social support as predictors of university adjustment

	Model 1	Model 2	t-value	p-value
AM	-.457		-8.773	< 0.001
IMTK	.208		3.989	< 0.001
AM		-.368	-7.254	< 0.001
IMTK		.203	4.155	< 0.001
ISE-12		.303	6.478	< 0.001
F	72.83***	69.24***		
df	2, 297	3, 296		
R^2	0.329	0.412		
R^2 change		0.083		
Sig. F change		< 0.001		

Note: *** p < 0.001

Table 5 Years of Study as the Moderator of the Effects of Social Support and Motivation on University Adjustment

	Model 1	Model 2	Model 3
AM	-.368***	-.367***	-.303*
IMTK	.203***	.208***	.090
ISE-12	.303***	.297***	.267*
Year of study		.111**	-.138
Year of study x AM			-.082
Year of study x ITMK			.262
Year of study x ISE-12			.072
F	69.24***	54.45***	31.25***
df	3, 296	4, 295	7, 292
R^2	0.412	0.425	0.428
R^2 change		0.012	0.004
Sig. F change		0.012	0.614

Motivation as the Mediator of the Effects of Social Support on University Adjustment

We used process macro to examine whether AMTK and AM serve as mediators of social support on university adjustment. As shown in Table 6, social support has a significant positive effect on AMTK but a significant negative effect on AM. The total effect of social support is significant and positively associated with university adjustment, and the indirect effect of social support, after controlling AMTK and AM, was also significant and positively associated with university adjustment, but the coefficient dropped from 0.51 to 0.35.

Table 6 Motivation as the Mediator of the Effects of Social Support on University Adjustment

	Coeff	SE	t	p	LLCI	ULCI
ISE → AM	-0.796	0.146	-5.44	< 0.001	-1.08	-0.508
ISE → IMTK	0.282	0.119	2.37	0.019	0.048	0.516
AM → CAQ	-0.161	0.022	-7.25	< 0.001	-0.204	-0.117
ITMK → CAQ	0.113	0.027	4.16	< 0.001	0.059	0.167
ISE → CAQ	0.349	0.054	6.48	< 0.001	0.243	0.456
ISE → CAQ	0.509	0.061	8.48	< 0.001	0.391	0.628

Discussion

Since the dropout rates of undergraduates in Malaysia is increasing, it is important to determine the possible factors that are relevant to university adjustment. Studies suggested that motivational factors and social support are relevant to university adjustment. Nonetheless, only a few studies have examined these relationships among tertiary education and different years of study, especially among undergraduates in Malaysia. Therefore, this study aims to examine the relationships between motivational factors and social support among Year One to Year Three undergraduates in Malaysia.

Firstly, the results showed that no significant difference among Year One to Year Three undergraduates in their motivational factors, social support, and university adjustment. These results are quite similar to the findings of other studies that suggested a high level of stability in motivational factors (Fazey & Fazey, 1998; Müller & Palekčić, 2006). In other words, such stability also occurred among undergraduates in Malaysia. As explained by these researchers, this high stability can be because undergraduates have increased understanding of what they want and have more freedom to choose their study subjects; therefore, it is less likely to have a sudden change in motivation. More importantly, we found such stability not only in motivational factors, but also in social support and university adjustment. In addition, a significant linear positive trend in university adjustment as seen from our analysis suggested that university adjustment is better for senior than junior undergraduates. Therefore, more effort should be focused on junior undergraduates to improve their university adjustment.

Secondly, similar to other studies, we found significant relationships of university adjustment with social support and motivational factors, especially IMTK and AM (Baker, 2004). In other words, undergraduates are able to adjust better if they know their objectives of studying in a university. Therefore, if parents and families support their children's choices and decisions, the children are more likely to have a good university adjustment. In this light, strategies in improving university adjustment should also be focused on these parents.

Thirdly, we found that the effects of social support on university adjustment are partially mediated by IMTK and AM. Even though social support has a significant effect on university adjustment, the relationship of the former with the latter decreases upon adding IMTK and AM mediators. These results met the criteria of mediation analyses proposed by Baron and Kenny (Little, Card, Bovaird, Preacher, & Crandall, 2007). In other words, undergraduates may enhance their IMTK and AM while receiving more social support, allowing them to adjust better in a university.

Fourthly, as suggested by other studies that found a high level of stability in motivation across years of study, our results of moderator analyses further support these findings that the effects of social support and motivation on university adjustment are not moderated by years of study.

In conclusion, the results of this study showed the significant relationships of social support and motivation with university adjustment are also found in undergraduates in Malaysia. Increased social support for undergraduates increases IMTK and lowers AM, and thus results to better university adjustment. Such relationships are also found across different years of study. Therefore, educators can consider designing strategies to improve social support from lecturers and peers on students who do not adjust well in the university. Parents should be aware of the importance of their support on their children's university adjustment. In addition, more counseling towards the meaning of studying should be introduced to increase students' IMTK, and more workshops should be introduced to increase their self-awareness on the areas they're interested in to reduce their AM. Policymakers should also consider introducing flexible regulations to allow students to change their subjects of study.

There are a few limitations of this study. This study was conducted in one private university. Furthermore, social support is quite relevant to cultural values. Future studies may consider recruiting participants from a number of private and public universities, as well as conduct a cross-cultural comparison between undergraduates from different cultural backgrounds.

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GRADUATE DESTINATIONS OF HIGHER EDUCATION STUDENTS: A REVISED OUTCOMES MODEL

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Abstract

The ultimate goal of engaging in higher education study has typically been conceptualised as the attainment of full-time employment on completion of the course. The massification of the Australian higher education system, coupled with specific programs aimed at increasing the participation of diverse student groups in higher education irrevocably changed the socio-demographic profile of university graduates. A logical extension of this 'new' higher education graduate is the need for a revised understanding of the outcome that each of these student groups are seeking to achieve at the conclusion of their studies.Results from the recent trial of the Graduate Outcomes Survey have been used to populate a model of graduate outcomes that explores a range of graduate destinations that extend beyond full-time employment.

Background

Higher education graduate surveys in Australia have traditionally focused on employment, particularly full-time employment, as the most desirable outcome for students who have recently completed their qualification. Recent commentary on post-undergraduate destinations has lamented the fact that the proportion of graduates in full time employment four months after completing their course has fallen to its lowest level since 1993 (Dodd, 2015; Jericho, 2015; Knott, 2014; Trounson, 2014). While it is acknowledged that lower employment levels are not apparent for all fields of education, for example, employment rates of medicine and pharmacy graduates are still extremely high, there is a general view that "…some new graduates have been

discouraged from seeking a place in the full time labour force" (Graduate Careers Australia, 2014: 2).

Seeking full-time employment on completion of a degree was assumed to be an almost universally desired outcome both prior to the Dawkins reforms and during the subsequent unprecedented expansion of the higher education in Australia(Dawkins, 1988). In the context of a massified higher education system, there was an increasing number of mature age, female, international and part-time postgraduate students. Given these unprecedented changes in the higher education context and the student population, can we be confident that all of these students desireto seek full-time employment when they finish their qualification?

It could be that the more typical 'target market' for higher education, those who have recently completed school studies, are most likely to seek full-time employment as a graduate destination. Brooks & Everett (2009:33)commented that in relation to school leavers, the massification of higher education has resulted in "…the normalisation of post-compulsory education and the encouragement of high aspirations, [and] young people have come to assume a one-to-one relationship between being qualified and having a lasting professional career'.

The reality is that many graduates experience a substantially less linear pathway through an under researched combination of demand and supply side issues. It is not simply a matter of stating that they have been excluded from their 'rightful place' in the labour market. With few direct links, or relationships, between programs of study such artsor business,it is also possible to argue that the jobs may never have been there to aspire to or students did not necessarily undertake the course with the expectation of an employment outcome that was full-time work. Many of these concerns have not been explored or are rarely considered in the context of full-time work being assumed to be the optimal graduate outcome and anything less than full-time employment in a preferred professional occupation is regarded as underemployment.

Graduate underemployment

The concept of underemployment is present in the economic, psychological, sociological, management and organisational behaviour literatures and defined in a number of different ways. In general, there is basic agreement that the key features of underemployment, initially offered by Feldman (1996), include:

- Time-related underemployment – involuntary part-time or temporary work
- Qualification-related underemployment, and
- Income-related underemployment.

Improving the measurement of these aspects of underemployment, including the extent to which underemployment is voluntary, has been a feature of recent discussions (Maynard, 2011). It is often assumed that all graduates are actively seeking to avoid any form of underemployment (Scurry & Blenkinsopp, 2011). There also appears to be an underlying assumption in the underemployment literature that volition is of more relevance to time-based underemployment than qualification or income-based underemployment. However, there is no compelling evidence

to suggest that this is the case. As such, any attempts to measure underemployment need to take into account the extent to which this is a voluntary state that reflects a match between the employee's values, needs or current life circumstances.

Time-related underemployment

Time-related underemployment is the most frequently reported form of underemployment.Most researchers use the standard measurement conventions adopted by the International Labour Organisation (ILO). According to the ILO (1998), a person is regarded as experiencing time-related underemployment if, during a reference period, they had worked fewer hours than an identified threshold,were willing to work extra hours, andwere available to work these hours.

The threshold relevant to the number of hours worked varies depending on the country measuring underemployment. In the case of Australia, 35 hours is considered by the Australian Bureau of Statistics (ABS) to be relevant minimum(ABS, 2013). While there are limitations to this conceptualisation of and measurement approach to time-related unemployment, it does provide an objective data point that can be compared with ongoing ABS collections.

Qualification-related underemployment

Qualification-related unemployment is evident when an employee has a skill or education level that exceeds the requirements of their job. Definitions of qualification-related underemployment often combine the concepts of education and skills into an overarching construct (e.g. Khan & Morrow, 1991; Bolino & Feldman, 2000; D. C. Maynard, Joseph, & Maynard, 2006). This approach has merit for some groups that tend to exhibit high levels of underemployment, such as migrants however it could be less useful for young graduates of higher education courses who may not regard themselves as having work-relevant skills nor appreciate the skills that they have obtained while studying.

Mavromaras et al (2009)developed existing conceptualisations of the match between graduates and their jobs by differentiating between the required level of skill and the required level of education. They identified four potential categories of over-qualification including:

- Mismatch on both a skill level and educational level.
- Skill level mismatch, education level matched
- Education level mismatch, skill level matched, and
- No mismatch between the job and the graduate's required education level or the job and the graduate's required skill level.

Using data from the Household, Income and Labour Dynamics in Australia (HILDA) survey, they found that educational level mismatch did not necessarily lead to higher levels of employee dissatisfaction, whereas a skills mismatch did result in more dissatisfied workers. These findings suggest that there may be merit in separately examining skill and education-related unemployment.

Underemployment and choice

To fully understand the components of what it means to be underemployedit is necessary to consider the role of choice in relation to underemployment. As mentioned previously, the voluntary nature of underemployment for some labour force participants is not well understood and data is rarely collected on what economists refer to as 'non-economic reasons' for underemployment. These reasons are sometimes defined in terms of supply constraints which may prevent someone from working full-time such as health issues, care giving responsibilities or the lack of appropriate child care (e.g. Wilkins & Wooden, 2011). Employees may or may not see themselves as having any agency with respect to these types of underemployment related factors.

The role of personal reasons in a choice process that can result in apparent underemployment, such as improving work life balance, working in a job that makes a positive social contribution or wanting to care for children in the home is poorly understood (McKee-Ryan & Harvey, 2011). The extent to which graduates who have just completed a minimum of three years of study, often straight after completing their secondary school studies, are electing to work in jobs that seem to be a mismatch is also under- researched.

Graduate outcomes framework

A more contemporary approach to understanding graduate outcomes would attempt to capture aspects of underemployment and understand the extent to which apparent underemployment is voluntary or involuntary. Figure 1 outlines a graduate outcomes framework that addresses some of the complexities associated with identifying graduate employment outcomes, specifically time and qualification-related underemployment.

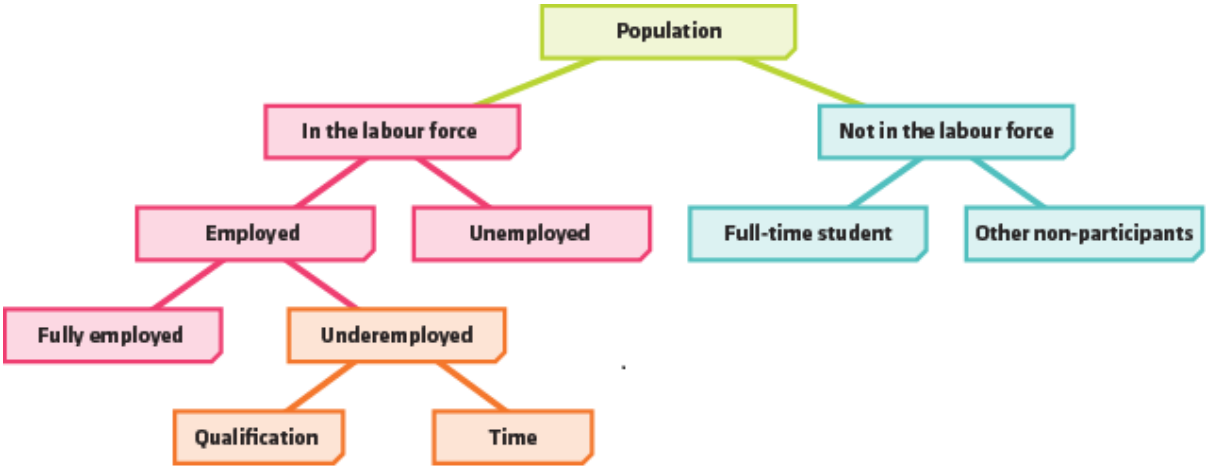

Figure 1 Graduate Outcomes Framework

The Graduate Outcomes Survey (GOS) is a component of the Quality Indicators for Learning and Teaching (QILT) research program that has been implemented by the Australian Government Department of Education and Training. The GOS was developed to replace the

Australian Graduate Survey starting in late 2015. It is an annual, national census that uses an online platform to collect data from recent higher education graduates during a four week enumeration period. In early 2015, a trail of the GOS was undertaken to test the survey process and the data collection platform. Data from this trial provided an initial insight into the reconceptualization of graduate destinations, particularly with respect to the nature of underemployment.

Methodology

Three Australian universities and two private higher education providers took part in the 2015 GOS Trial. Email invitations and reminders were sent to the 15,983 in-scope sample members. These emails contained information about the GOS Trial, including the prize draws, and a link that took the graduates directly into the online survey. Data collection was undertaken betweenMay 6 and May 31 2015.

Graduate Outcomes Questionnaire (GOQ)

As part of the transition from the AGS to the GOS, all 40 Australian universities were invited to provide information about the extent to which their institution was using Graduate Destination Survey (GDS) items from the AGS for performance management and improvement purposes. The subsequent feedback from the institutions revealed that 29 GDS items were essential or important to institutional performance management (see Whiteley, 2015 for further information).

Analysis of these essential or important items indicated that they form the core of the GDS data elements, identifying graduate employment and further study activities. The reference instrument used to create the GOQ was the Australian Bureau of Statistics (ABS) Labour Force Survey and additional items regarding further study outcomes were sourced from the ABS Survey of Education and Training and the Survey of Education and Work.

A small number of the essential or important GDS items did not have analogous items in standard statistical collections and fell into three general topic areas: details regarding further study, job search strategies, and the match between higher education experience and employment outcomes.The original GDS items examining the match between higher education and labour market outcomes appear to be aimed at identifying the extent to which there is a relationship or a match between the qualification, the subject area and the skills and knowledge obtained during the higher education experience and the graduate's employment outcome. These concepts are very similar to those addressed through the underemployment literature. As such, the validated Scale of Perceived Over-qualification (SPQ)(Maynard & Parfyonova, 2013) was included in the instrument to capture the extent to which graduates felt that they were overqualified for their current position.

Respondent characteristics

From a sample of 15,983 graduates, a total of 4,638 surveys were completed resulting in a response rate of 29.0%. Responses varied substantially across the institutions, from a high of 39.5% to a low of 19.1%. In general, the characteristics of the respondents to the GOS trial were broadly representative of the sample records that were provided by the participating institutions.

Male graduates were slightly underrepresented, as were international students and those speaking a language other than English at home.

Results

The survey data was analysed in relation to domestic, bachelor level graduates since this group is the usual subject of commentary in relation to post-university employment outcomes. Figure 2 contains a broad overview of the graduate outcomes for the 2,063domestic, bachelor levelgraduates who responded as part of the GOS 2015 Trial. The majority of the graduates were in the labour force (77.6%) and most were employed (87.1%) according to the ILO definition of employment (engaged in work for one or more hours during the previous week). Non-participation was mostly accounted for by those who were studying full-time (84.8%).

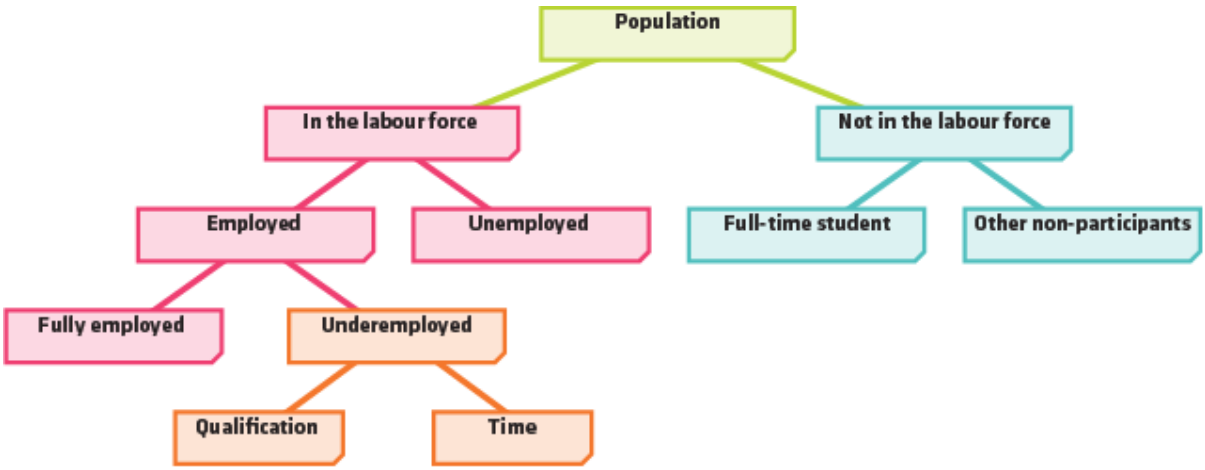

Figure 2 GOS Trial Outcomes

Less than half of the recently employed graduates (42.9%) regarded themselves as fully employed, indicating that they were currently working the number of hours they wanted to work, irrespective of whether or not this employment was full-time or part-time and that their employment was at an Australian Qualifications Framework (AQF) level that matched the AQF level of their qualification.

Of the employed graduates, 16.2% (227 graduates) were working less than 35 hours per week, wanted more hours and were ready to start immediately. A much larger proportion of employed graduates, 52.9%(739 graduates) appeared to be in occupations with an AQF level below their recently attained AQF level. There was also a significant overlap between qualification and time-related underemployment (which is why these two aspects of underemployment do not sum to 100%) with almost nearly three-quarters (73.6%) of those reporting time-related underemployment appearing to experience qualification-related underemployment.

Of the employed graduates, 55.9%(747) reported that they were working part-time but more than half of this group (56.6%) was also currently studying. Given that many graduates are in in further study and working part time or in transition to a more preferred employment outcome post-study, lower levels of full-time employment and perceptions of over-qualification are not unexpected. The following sections provide evidence to suggest that a substantial proportion of this apparent underemployment was related to 'supply-side' factors, reflecting situations where graduates were striking a balance between personal factors, such as undertaking additional study and lifestyle choices, and the nature of their employment situation. For the purposes of this short paper, only age-related differences will be explored.

Qualification-related underemployment

In the GOQ, the AQF level of a graduate's recent qualification is compared to the AQF level of their current occupation to provide an objective assessment of whether or not they appear to be over-qualified. As mentioned previously, 52.9% of recent graduates seemed to be employed in a position that was below the AQF level of their qualification. This aspect of underemployment will be important to track within the longitudinal component of the GOS as qualification-related underemployment should decrease as graduates complete their further studies and/or transition to jobs that are related to their qualification.

A subjective interpretation of qualification-relation underemployment was provided by graduate ratings of items about the extent to which they felt over-qualified (in this context, education-related underemployment). Based on the responses Scale of Perceived Over-qualification, 59.7% of employed graduates reported that they felt they were over-qualified for their current position. This compares favourably with the 52.9% who 'objectively' appear over-qualified using an AQF comparison of their qualification and their occupation.

While some regard over-qualification, (or not using relevant skills or education) as a negative, many graduates indicated that there was a reason why being over-qualified was not necessarily undesirable. Table 1 shows that just over half (53.4%) of the graduates who reported that they were overqualified were working in a job that did not fully use their skills and education for through personal choice.

Table 1. – Main reason for working in a job that doesn't fully use skills and education

	n	%
Studying	**382**	**36.1**
Entry level job / career stepping stone	**51**	**4.8**
I have skills that are not required in my current job	**50**	**4.7**
Travelling / gap year	**30**	**2.8**
I'm satisfied with my current job	**29**	**2.7**

	n	%
Changing jobs / careers	**21**	**2.0**
Sub-total – personal factors	**565**	**53.4**
No suitable jobs in my area of expertise	**229**	**21.6**
No suitable jobs in my local area	**73**	**6.9**
Considered to be too young by employers	**64**	**6.0**
No jobs with a suitable number of hours	**34**	**3.2**
Not enough work experience	**34**	**3.2**
Cannot find a job	**16**	**1.5**
My job is temporary or casual	**11**	**1.0**
Sub-total – labour market factors	**461**	**43.5**
Other	**34**	**3.2**
Total	**1,059**	

Most were graduates who felt overqualified for their jobs were still studying (36.1%), others had upskilled even though it was not a requirement for their position (5.5%) or indicated that they were 'just starting out' (4.8%) in their careers. Some were travelling (2.7%) and others were keen to share their satisfaction with or passion for their current job (2.7%).

Graduates also expressed concerns regarding perceived labour market constraints that they felt prevented them from using their skills and education. Slightly more than a fifth (21.6%), reported that there were no suitable jobs in their area of expertise and 6.9% indicated that there were no suitable jobs in their local area. Feeling as though they were considered too young (6.0%) or not having enough experience (3.2%) for their desired positions could suggest a lack of preparation for the workforce.

Table 2 explores differences between older and younger graduates. Mature age graduates were less likely overall to offer personal reasons for not working in a job that did not fully use their skills and education. Younger graduates were undertaking further study at more than double the rate of older graduates (39.2% vs 18.6%). Somewhat surprisingly, nearly one in ten older graduates (9.9%) reported that they were using the current position as an entry level job or a stepping stone to something else, perhaps suggesting that they were pursuing a new career direction.

In terms of labour market factors, both older and younger graduates reported a similar pattern of reasons as to why they were not working in a job that fully used their skills and education. Most indicated a lack of suitable jobs in their area of expertise (20.4% & 28.6%). A lack of suitable jobs in the local area (6.7% & 8.1%) and being considered to be too young by employers (6.3% & 4.3%) were also cited as key reasons. The extent to which these labour market constraints are actually present is unclear.However, there is a perception by some recent graduates that they do exist.

Table 2. – Main reason for working in a job that does not fully use skills and education

	24 and under		25 and over	
	n	%	n	%
Studying	352	39.2	30	18.6
Entry level job / career stepping stone	35	3.9	16	9.9
I have skills that are not required in my current job	37	4.1	13	8.1
Changing jobs / careers	16	1.8	5	3.1
I'm satisfied with my current job	27	3.0	2	1.2
Travelling / gap year	25	2.9	5	3.1
Sub-total – personal factors	494	54.9	71	44.1
No suitable jobs in my area of expertise	183	20.4	46	28.6
No suitable jobs in my local area	60	6.7	13	8.1
Considered to be too young by employers	57	6.3	7	4.3
No jobs with a suitable number of hours	27	3.0	7	4.3
Not enough work experience	27	3.0	7	4.3
Cannot find a job	11	1.2	5	3.1
My job is temporary or casual	11	1.2	0	0.0
Sub-total – labour market factors	376	41.9	85	52.8
Other	29	3.2	5	3.1
Total	898		161	

Time related underemployment

Graduates working part-time who did not want to work more hours were asked to indicate why they were not seeking full-time work (see Table 3). Just over 85.5% provided a personal choice reason for not seeking more hours. Most were studying (280: 67.5%) but many also reported that part-time work suited their lifestyle (8.2%), that they weresatisfied with part-time work (5.8%) and it supported their pursuit of other interests (3.4%).

Table 3. – Reasons for not seeking more work hours

	n	%
Studying	**280**	**67.5**
Lifestyle choice / work-life balance	**34**	**8.2**
Satisfied with the number of hours	**24**	**5.8**
Pursuing other interests / commitments in spare time	**14**	**3.4**
Caring for children	**3**	**0.7**
Sub-total – personal factors	**355**	**85.5**
No suitable job in my area of expertise	**15**	**3.6**
Due to contract restrictions	**9**	**2.2**
No suitable job in my local area	**5**	**1.2**
No job with a suitable number of hours	**4**	**1.0**
Sub-total – labour market factors	**33**	**8.0**
Other	**27**	**6.5**
Total	**415**	

Table 3 also shows that graduates working part-time and not seeking more hours were far less likely to report that they did not want to work more hours because labour market factors prevented them from doing so with only 8.0% indicating that this was the case. There is some suggestion that a perceived lack of suitable jobs did discourage some graduates from seeking work with a greater number of hours but this was far less prevalent than, for example, reducing work hours to suit lifestyle choices.

Looking at the reasons for not seeking more work hours by broad age group, mature age graduates are slightly less likely to suggest personal reasons than younger graduates and the type of personal reasons follow a similar pattern but are slightly different (see Table 4). Mature age graduates are less likely than younger graduates to not be seeking more hours because they are studying (57.1% vs 77.3%) but more likely to cite caring for children (7.1.0% vs 0%) or lifestyle choices (9.5% vs 6.0%) as a main reason. In terms of possible labour market barriers to seeking more work hours, the main concern for both groups appears to be a lack of suitable jobs in their area of expertise (3.3% & 9.5%).

Table 4. – Reasons for not seeking more work hours by age group

	24 and under		25 and over	
	n	**%**	**n**	**%**
Studying	**256**	**77.3**	**24**	**57.1**
Satisfied with the number of hours	**20**	**6.0**	**4**	**9.5**
Pursuing other interests / commitments in spare time	**11**	**3.3**	**3**	**7.1**
Caring for children	**0**	**0.0**	**3**	**7.1**
Lifestyle choice / work-life balance	**8**	**2.4**	**2**	**4.8**
Sub-total – personal factors	**295**	**89.1**	**36**	**85.7**
No suitable job in my area of expertise	**11**	**3.3**	**4**	**9.5**
Due to contract restrictions	**8**	**2.4**	**1**	**2.4**
No job with a suitable number of hours	**3**	**0.9**	**1**	**2.4**
No suitable job in my local area	**5**	**1.5**	**0**	**0.0**
Sub-total – labour market factors	**27**	**8.2**	**6**	**14.3**
Other	**9**	**2.7**	**0**	**0**
	363	**100**	**242**	**100**

Conclusions, implications & limitations

The Graduate Outcomes Questionnaire (GOQ) provides institutional researchers with a unique opportunity to contextualise the employment outcomes of their recent graduates. Rather than relying on full-time employment as the 'gold standard' graduate destination, the GOQ supports an analysis of the reasons why graduates may not have immediately transitioned to a full-time job or a position that allows them to use their skills and abilities.

Looking at just one demographic characteristic, age, it is apparent that there are substantial differences between younger and older graduates with respect to their reasons for working part-time or in occupations for which they appear to be overqualified. While it will be possible to create a more nuanced national snapshot of graduate employment, the real value of this approach is at an institutional level, particularly for those providers that have high proportions of 'non-traditional' students.

Current findings should be considered exploratory given the comparatively small-scale nature of the trial. Further analysis of the data obtained from a broader range of institutions is required to determine the extent and nature of the apparent over-qualification of recent graduates.

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STRATEGIC PLANNING AS AN ESSENTIAL FOR QUALITY ASSURANCE

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Abstract

In the dynamics of planning and quality management, Strategic Planning can no longer be separated from Quality Assurance, nor can Strategic Planning or Quality Management work in a vacuum of information. To demonstrate the linkages, the triangularization of planning-information-quality (Teay, 2008) was expounded in the QMIPS (Quality Management, Information and Planning Systems) framework (Teay, 2007). This lead to the imperatives of a Strategic Performance Management System (SPMS) that addresses the QMS (Quality Management System), IMS (Information Management System) and the PMS (Planning Management System). Strategic Planning has a history of developmental excellence but execution paucity. The key issue is "what and how" to action on the strategic plan. The importance of realizing the lofty mission of the HEI (Higher Education Institutions) is a herculean and tough task. In addition, the quality management must be developed within the strategic management context. This paper will illustrate a framework using the SPMS to link the quality plan to the strategic plan by using a simplified identification and development of a strategic plan based on the "position" and "capabilities" fundamentals of strategic management on strategic analysis and formulation. It will then illustrate strategic implementation of the plan by the cascading of the vision, mission, goals and objectives from the Strategic Plan into the goals and objectives of action plan and its corresponding projects development and budget requisition. The linkage of the quality management is through the metrics developed to measure the performance achievement of the projects and its budget as stated in the objectives. This would resolve the problem of alignment and the execution of the various projects based on the action plans to achieve the overall strategic plan and its mission in a structured and measurable approach that assures quality.

Keywords: Quality Management, Information Management, Planning Management, Strategic Plan and Action Plans. Alignment and cascading of the vision, mission into achievable goals and measurable objectives.

Introduction

QUALITY is an ever elusive and evolving, omnipotent and ubiquitous powerful business mechanism that has been used and manipulated by organizations to convince consumers that its product and service offers has achieved a level of acceptance based on certain standards and criteria. Even the education industry has not escaped from this quality syndrome and all HEI (Higher Education Institutions) are bent on having their educational products and services achieve a certain level of acceptable standards and criteria that finally leads to its being accredited or certified "fit for purpose". The key question is "what is quality in education?" Experts and exponents have searched and researched high and low for a definitive definition that constitutes "quality education".

Vroeijenstijn (1991) said "it is a waste of time to define quality" as it is a relative concept, but does this mean that we do not action on Quality? Rather than trying to define "quality education", one can start with the HEI's purpose or mission under pinning national and social development through skilled manpower through 3 activities and action on these key activities which are:

- Producing competent and qualified graduates to meet the organizational needs in all sectors
- Pushing forward the frontier of knowledge via research
- Developing society through community services

HEI have a responsibility to the society to develop the future societal human capital through its educational value that they propose to the stakeholders (students, alumni, employment market, etc.). Conti (2005 and 2006) emphasized the need of understanding the quality management from the systems perspective by extending the quality management concepts of economic transactions to social relations by creating value to the stakeholders. This quality perception becomes "judgments of values" that are intrinsically associated amongst the relationships of men and its environment that consist of exchanges of values.

This is a summation of its product quality, service quality, image, relationships divided by the buyers' cost (Gale, 1994). The creation and delivery of educational value is through the internal processes of the institutes and its schools' operation, stakeholders, innovation and regulatory and social processes management (Kaplan and Norton, 2001 and 2004). The key issue is the alignment through strategic management and the measurement of achievements through quality management of these internal processes to create on this educational value proposed to the stakeholders. In trying to find an answer to this issue, the first part of the paper explores the key components of quality, information and planning underpinning education excellence to align the integrated learning and growth of the human capital, information capital, and organization capital that utilizes the internal processes to create value. This integration and linkage mechanism uses the triangularization of the 3 main core systems of quality management, information management and planning management (Teay, 2008) as these covers most aspects of the creation and delivery of the educational value of the HEI. The second part will deal with developing and auctioning the strategic plan based on the quality drive.

Part I: Strategic Quality and Performance Management

1.1 Quality in Education

Successful quality management requires one to understand the context of the HEI mission which represents its "reason for existence" or its very purpose of the HEI. What the HEI does or sell must "fit for purpose" (Teay, 2007). This inevitably means that Quality in education is implicitly and explicitly about:

- The outputs and outcomes of education which is of use that is fit for some purpose,
- The stakeholders of "the provider" and "the user" of education,
- The move forward towards improvements or innovations in education,
- The actions and activities in doing something in education effectively and efficiently.

Holistically, since the late 80's and into the 1990's Quality in Higher Education and key literatures in Quality in Higher Education (ENQA – European Association for Quality Assurance in Higher Education, 2005;Greene, 1994; Teay, 2005, 2006 and 2007)has iterated and reiterated thatQuality in Higher Education had been, is and will always be about and actioned through:

- ✓ Traditional quality definition of ***benchmarking*** to the best which might not be within the same context or content. As such, benchmarking to the best in an appropriate way based on the internal and external context.
- ✓ ***Conformance to Specifications or Standards*** which is static in nature as the criteria used to set the standard is unclear and that they are easily measurable and quantifiable which is not the case in higher education. Under such a situation, Conformance and Compliance to Specifications or Standards normally use proxy measures and assessment methodologies for the subjective quality educational performance measure qualitatively and quantitatively.
- ✓ ***Fit for Purpose*** – emphasis on specifications based on the "mission or reason for the existence" of the HEI that is developmental as it recognizes purpose might change over time thus requiring re-evaluation of appropriateness of specifications.
- ✓ Quality as effectiveness in ***achieving institutional mission and goals***.
- ✓ Quality as ***meeting customers' stated or implied needs***.

To meet the basic principles of HEI and its quality requirements as noted above, key education standards and criteria worldwide that has a valid accreditation process must effectively addresses the quality of the institution or program in the following areas:

- ✓ Success with respect to student achievement in relation to the institution's mission, including, as appropriate, consideration of course completion, State licensing examination, and job placement rates.
- ✓ Curricula.
- ✓ Faculty.
- ✓ Facilities, equipment, and supplies.

- ✓ Fiscal and administrative capacity as appropriate to the specified scale of operations.
- ✓ Student support services.
- ✓ Recruiting and admissions practices, academic calendars, catalogs, publications, grading, and advertising.
- ✓ Measures of program length and the objectives of the degrees or credentials offered.
- ✓ Record of student complaints received by, or available to, the agency.
- ✓ Record of compliance with the institution's program responsibilities, the results of financial or compliance audits, program reviews, and any other information pertaining to quality assurance

In summation, fundamentally, five standards of quality assurance (Schray, 2006), that any education institution must address are that they:

1. Advances academic quality;
2. Demonstrates accountability;
3. Encourages purposeful change and needed improvement;
4. Employs appropriate and fair procedures in decision-making; and
5. Continually reassesses accreditation practices.

1.2 Quality and Performance Management in HEI

A HEI, like any other organization has specific processes that support the achievement of its teaching-learning-research missions and contribution to academic and societal development of the community and stakeholders at large. The 3 key processes (Ashworth, 1999; Childe *et al.,* 1994; CIM-OSA Committee, 1989) are: the operational processes (that create, produce and deliver on educational value), the support processes (that support the operational processes (Garvin, 1998; Porter, 1980), and the management processes (encompassing the goal setting, controlling and organizational behavior processes).

This underlies the imperatives that quality in the HEI must move from a monitoring stance to that of management focused on strategy (Cullen, *et al.,* 2003) that supports management through measurement (Bourne, *et al.,* 2005). This highlighted that the internal context factors that are interactive in nature are much more complex than the existing simplistic physical and formal systems affecting performance. The performance model of Martz (2001) for a university setting had the principles: to define performance expectations, create attainable but challenging goals, furnish clear measurements, encourage involvement and provide process clarity and feedback.

The rationale of this paper supports Andersen *et al.*'s (2006) holistic approach of harnessing the various tools and concepts into an overall framework where their inter-linkages are understood when responding to the internal and external challenges. While most of the framework looks at the macro or big picture, Rouse and Putterill (2003) proposed a macro-micro linkage of the: 1) interface between organization and stakeholders, 2) capacity and capability of resources, 3) planning-evaluation and resource-achievement, and 4) the basic core elements of input-activities-output. This approach of moving from the big picture at the organizational level (strategic plan)

to the operational level (action plans) is the key determinant of success supporting Franco-Santos *et al.,* (2007), Bernardin *et al.,* (1998), Kennerly and Neely (2002), Harrington (2005), Newkirk-Moore and Bracker (1998), Temporal, (1990) Bolt, (1993), Burach *et al.,* (1997), Tovey, (1991) and Mason, (1993) views that were not addressed.

Education management had traditionally been viewed through the myopic lens of education fundamentals as opposed to the management fundamentals used in any profit or non-profit organization. The "strategic management or basic management of the organization" is alienated to the conservative views of education. It is important that the conservative education fundamentals be viewed through the strategic management lens to bring out the best of both principles – a marriage of education fundamentals and sound management principles. As a start, education quality is an unquestionable imperative that must be supported with clear evidence or an evidence-based performance management system that are used as the planning parameters. It can be argued that the strategic triangularization of the quality-information-planning domains as expounded here, could lead to better education performance through the creation and delivery of educational value meeting the needs of the stakeholders and society. The HEI basic accountability is through a well-planned and managed systematic approach towards education management. This is illustrated through the QMIPS (Quality Management, Information and Planning Systems) developed as an initiative towards performance management.

1.3 Imperatives of a Strategic Performance Management System (SPMS)

Quality Management System (QMS) implemented under the paucity of Planning Management System (PMS) and Information Management System (IMS) that are not aligned has been the dearth and death toll of most QA system that at best is paying lip-service to QA or just going through an annual or a 5-year audit and assessment cycle that do not bring about improvements and innovations (Teay, 2007 and 2009). QA without improvements and innovations, or that does not bring about learning and integration with other systems is a poor system at best that is not well planned and lacking of an evidence-based system as shown in Fig. 1 (Teay, 2007 and 2009). To capitalize on QA, it should be linked to the planning and information management systems through the strategic performance management framework laying the foundation for continuous improvements and innovations based on management through measurement and an evidenced-based mechanism as shown in Fig. 2.

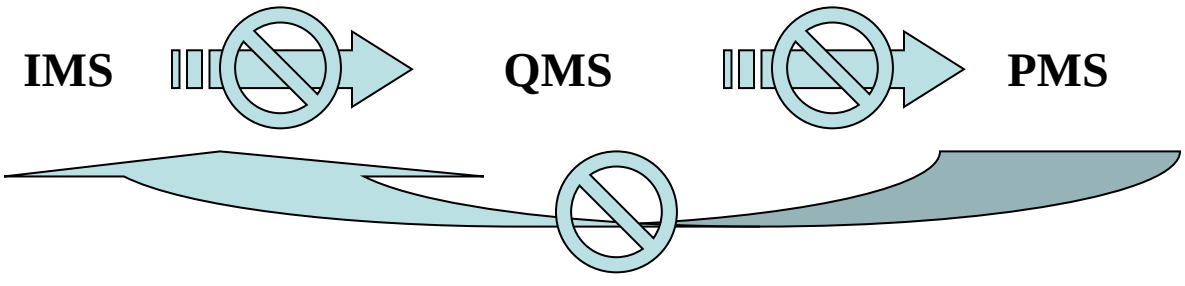


Figure 1: Non-alignment of the IMS, QMS and PMS

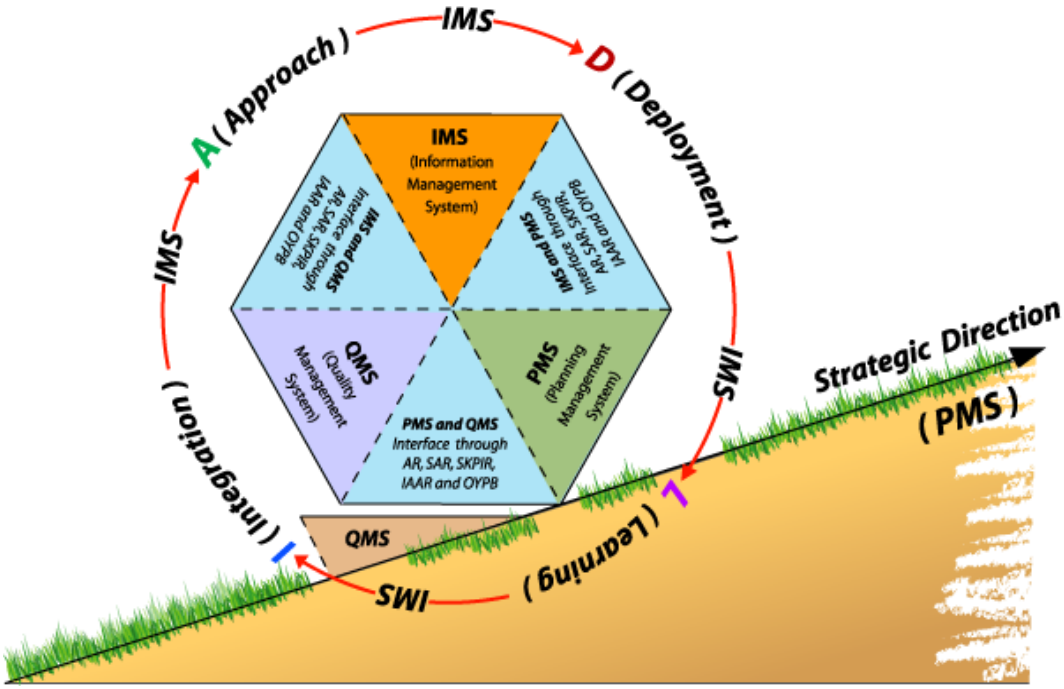


Figure 2: The mechanics and alignment of the PMS – IMS – QMS

Source: *Teay, S., (2009), Strategic Performance Management System (International Edition, 3rd Edition, January 2009), Assumption University Digital Press, Bangkok, Thailand*

This naturally brought about the evolution of the internal systems with the imperatives that the triangularization of planning-information-quality that must be managed holistically rather than independently. The HEI needs to streamline and align all its planning and budgeting operating procedures to identify and produce data and evidence for the assessment of the performance outcomes to make them less tedious and chaotic, more efficient and effective in terms of time and efforts through a standardized and disciplined well-planned approach. To dispel the issue of alignment of the key systems critical to the success of an IQA (Teay, 2007 and 2009), Figure 2 tries to show the inter-linkages of the 3 main sub-systems in the Strategic Performance Management System (Teay, 2007 and 2009). This meant that a full-blown SPMS (Strategic Performance Management, System) needs to be created and put into operation to ensure the linkages and interactions of the QMS (Quality Management System) the IMS (Information Management System) and the PMS (Planning Management System) are fully aligned and are congruent with each other.

Used in conjunction and in tandem with each other, the QMS and the PMS with the IMS as the evidence based mechanism; the SPMS will serve as the foundation of the performance management and the governance systems of the HEI. The SPMS is designed to be non-prescriptive, generic in nature so that the academic and administrative units can use them as the minimum guiding principles in strategically managing their units but are aligned in the same strategic direction to achieve the HEI's mission and commitment to the students and society. The

journey to achieve quality performance will be tough but if it is well-planned and approached through basic management fundamentals, the tough and tumultuous journey can be softened and heightened to reach higher heights and more lofty aspirations.

The SPMS framework as discussed is aimed at achieving a common linkage across the PMS-IMS-QMS to achieve the HEI "management through measurement" approach. It is also meant to be a pragmatic approach to show how the HEI can use this as a guideline to create their customized performance management system. It is hoped that this framework will help all HEI in their pursuit for "education excellence" through the performance management system that is managed strategically.

- The ***PMS (Planning Management System)*** represents the strategic direction of the HEI specifying its key vision, mission, goals and objectives that are achieved through its strategies. These define clearly and specifically the strategic direction that the HEI intends to achieve in its 15-years strategic plan supported by its OYPB (One-Year-Plan-Budget) that continuously evolve to achieve its strategic direction. The goals identifythe "what to achieve based on its mission" and the objectives identify "what are the measurement of its achievement"

- The ***IMS (Information Management System)*** represents the networks and database system developed to collect, collate, store, process and disseminate key data, facts, information that forms the evidenced based decision making and the measurement based on its defined goals and objectives. It will be noted that the IMS serves as the rotating PDCA concept of Plan – Do – Check – Act that has evolved into the newer ADLI concept of Approach – Deployment – Learning – Integration as expounded in the 2007 and 2009 MBNQA Education Criteria for Performance Excellence (NIST, 2007 and 2009).

- The ***QMS (Quality Management System)*** that serves as a wedge to avoid the slippage back to square one is based on the MBNQA framework that has 2 main areas of Process and Results leading to the overall audit and assessment of the performance measurement and management as defined in the PMS. As seen above the QMS acts like a wedge that prevents the HEI's performance to slip and the ADLI leads to its continuous journey up the slope towards its strategic direction. The "Process" refers to the methods the HEI uses and improves to address the Item requirements. The four factors used to evaluate process are Approach, Deployment, Learning, and Integration (ADLI) as follows:

    - "Approach" refers to

        - the methods used to accomplish the process
        - the appropriateness of the methods to the Standard, Criteria and Item requirements used to implement the QA
        - the effectiveness of the use of the methods
        - the degree to which the approach is repeatable and based on reliable data

and information (i.e., systematic)

- "Deployment" refers to the *extent* to which

  - The HEI approach is applied in addressing Item requirements relevant and important to the HEI
  - The HEI approach is applied consistently
  - The HEI approach is used by all appropriate work units

- "Learning" refers to

  - refining the HEI approach through cycles of evaluation and improvement
  - encouraging breakthrough change to the HEI approach through innovation
  - haring refinements and innovations with other relevant work units and processes in the HEI

- Integration" refers to the *extent* to which

  - The HEI approach is aligned with your organizational needs identified in the HEI Organizational Profile and other Process Items
  - The HEI measures, information, and improvement systems are complementary across processes and work units
  - The HEI plans, processes, results, analyses, learning, and actions are harmonized across processes and work units to support organization-wide goals

- "Results" refers to the HEI's *outputs and outcomes* in achieving the requirements in processes above. The four factors used to evaluate results are LeTCI:

  - Level (Le) – The HEI current level of performance
  - Trend (T) – The rate (i.e., the slope of trend data) and breadth (i.e., the extent of deployment) of the HEI performance improvements
  - Comparison (C) – The HEI performance relative to appropriate comparisons and/or benchmarks
  - Integration (I) – The linkage of the HEI results measures (often through segmentation) to important student and stakeholder; program, offering, and service; market and strategic challenges as defined in the HEI Organizational Profile and in Process Items.

Part II Strategic Management aspects of the Quality Drives

2.1 Strategic Management in Higher Education Institutions

Since the 90's Education has been viewed from the management lens which is appropriate in the sense that "education must create value to the end consumers", and "education must have a purpose" that is normally defined within the quality means to a quality end. Inescapably, education as looked through the management lens is built on the management principles of POC^3 (Planning, Organizing, Communicating, Coordinating and Controlling), the Quality lens of PDCA (Plan, Do, Check and Act). A more forward approach is to use the Performance lens of ADLI (Approach, Deployment, Learning and Integration) and the Results lens of LeTCI (Level, Trend, Comparison and Integration) of the performance results. As such, education in meeting the stakeholders' needs and requirements, its education creation and delivery of value must be strategic (deliberation of the intent of the institution based on its purpose or mission).

A key question that all strategic education managers must address is "what is strategic management and what is strategic planning?" within the education context. In addressing the strategic management of a HEI (Higher Education Institution), there are 3 basic questions that the institution should identify strategically. As shown in Figure 3,in managing a higher education institution, the 3 main pragmatic questions where answers should be targeted are:

1. **Where we are now and where are we going?** – This should address our current and past performance based on the analysis of internal and external environment analysis to come to an understanding of the current position of the HEI in the staked out education industry based on its capability. This current performance evaluation based on the analysis will determine whether the previously set vision, mission, goals and objectives had been achieved and where we will be going based on the current resources and capability of the institution.

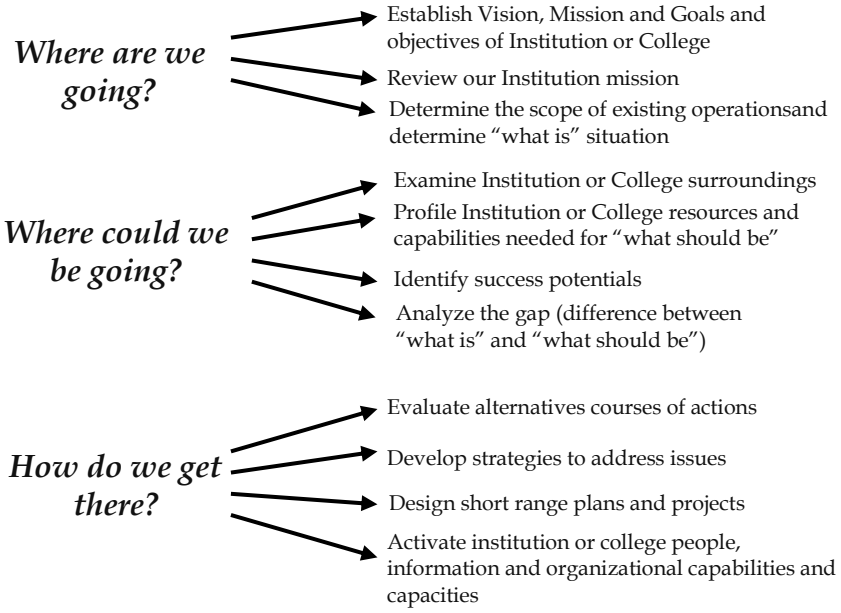


Fig. 3 Pragmatic questions of Strategic Management

Source: *Adapted from Teay Shawyun, (2007), A Primer on Strategic Organization Analysis and Planning Model, Assumption University Digital Press, Bangkok, 2007*

2. **Where do we want to go or where we could be going?** – This question should address where the institution want to stake out a future position in the education industry and what product or service offerings and stakeholder groups that the institution intends to compete in. This would be based on the internal and external analysis to determine what is deficient or what is needed in the existing capabilities or need to be created to achieve that future staked out position. The main issues to be addressed here would be:

    - Educational Product and service offering market positions to be staked out?
    - Buyers' educational and service needs and groups to serve?
    - Education Outcomes to achieve through the educational product and service offerings?

3. **How do we get there?** – This will address the resources and capabilities that the institution needs to create or build to execute its selected strategies to achieve the staked out position and the outcomes that it intends to achieve. It also addresses the issue of what to do and how to do it in terms of the implementation of the strategies selected. It goes into the realms of building a capable and competitive organization in the education industry through capability and capacity building to achieve its mission and goals.

The 3 questions highlight 2 main aspects that should be dealt strategically. In moving forward into the future, the HEI is aiming at a position that it intends to stake out and achieve in the future. In its strategic intent, it must determine what position that it can maintain and sustain and that it can perform better relative to other education providers with the same or similar set of product service offerings targeting a group of educational offerings consumer market. This would be dependent on its ability to compete and perform based on its existing competency or to develop a new set of capabilities that the HEI can leverage to perform better and achieve a greater share of the cream of the market. This would inevitably means that the institution needs a fully understanding of its internal operating environment and its external market environment.

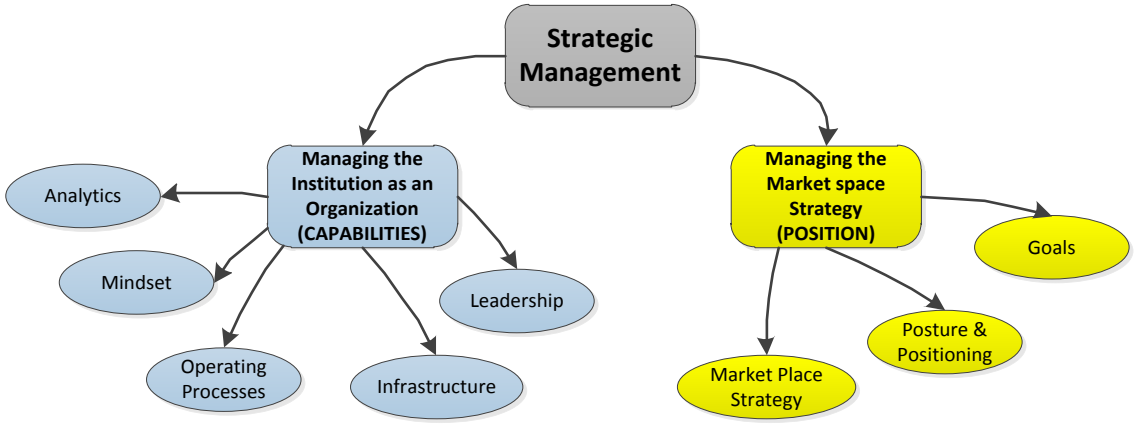
In basic management terminology, the institution must conduct a "situation analysis" of its internal and external environments impacting its present and future position. Based on this analysis, it then plans and formulates its strategies or action to perform and achieve its envisioned position in the future. With the strategies formulated, it must action on the strategies through its implementation of the strategic plan.

2.2 An Integrated Model of Strategic Management for HEI

In seeking an answer to the understanding of its external market environment, and to fully understand the institution's internal operating environment, strategic management would mean that a HEI must both manage its organizational capability and capacity that needs to be managed and created to achieve its marketplace strategy that would lead to its position performance in the

market place. As shown in Figure 4, strategic management in a higher education institution as an organization calls for:

Fig. 4 An Integrated Model of Strategic Management for HEI



Source : Adapted from Liam Fahey , (1994), "Strategic Management : Today's most important Business Challenge", *The Portable MBA (1994)*

2.2.1 Managing the Marketplace strategy set: This understanding is done through an appraisal of the Institution's Competitive Position by:

- Reviewing the institution's mission, competitive niche, and significant changes facing the education industry that has an impact on the institution's posture and positioning.
- Understanding where the institution has been (its past position), where it is now (its present position), and where it can go (its future position) in the competitive education arena.
- Comparing past institution performance with current market happenings and related environmental trends relative to its competitor in the education industry.
- Identifying where it can stake out a competitive position in the education industry that its strategic intent is in leveraging its capabilities set to be a key or lead player.

The key questions that need to be asked are:

- ✓ What is the present situation of the institution in terms of its current competitive situation based on its existent vision, mission, goals and strategies relative to its competitors' performance?
- ✓ How effective is the institution competitive approach as indicated by its financial, market and operational key performance indicators?
- ✓ What forces are causing change in the education industry that calls for a need to reshape its educational product and service offerings?
- ✓ What is the condition of the institution resources, its leverage of its competency to achieve its present position?

2.2.2 Managing the Organizational Capabilities set: This understanding is done through designing and developing the Institution's Strategies by:

- Analyzing competitive conditions to better understand the validity of the institution's current set of strategies and the set of capabilities and capacities needed and are defined in terms of leadership, infrastructure, mindset, human, information and organizational knowledge and skills (capability) and the amount that is needed (capacity)
- Setting the institution's direction through objectives and goals that prepare the management and leaders for approaching the future or needed market conditions
- Evaluating the scope of operations in light of developing competitive conditions and defining the consequences of maintaining or changing the institution's set of strategies in terms of growth, stability and limited resources and the capabilities and capacities that are needed.
- Identifying the pace of the institution's directions that exploit competitive advantages or improve competitive shortfalls, maintaining a culture of trust, cooperation, and team leadership throughout the enterprise and linking strategic management to operational decision making by establishing timeframes for operational accountabilities within the management team

The key questions that need to be asked are:

- ✓ What is the institution desired market position in the education industry?
- ✓ Does the institution have a clear set of long range goals that is complemented by its medium term and short term goals and objectives?
- ✓ Does the institution have certain deficiencies in its existent capabilities and capacities that needs to be corrected and does the new strategic intent on a new envisioned position needs a new set of capabilities and capacities in terms of its human, information and organization competency set that can be used to leverage its strategic intent in performance and position achievement?
- ✓ Does the institution have an understanding of the impact of market forces and competitive maneuverings on the firm's ability to develop its needed capabilities and capacities to capitalize on the opportunities in the educational industry in its positional and strategic intent?

2.3 "Capabilities" and "Position" perspective of Strategic Management

Strategic Management is based on a few key fundamentals that are generally established upon by most strategic management exponents (David, 2005;Hitt, Ireland, and Hoskisson, 1999;Johnson and Scholes, 2006;Mintzberg, H., Lampel, J., Quinn, J.B. and Ghoshal, S., 2003; Teay, 2007; Thompson and Strickland, 2007;Wheelen and Hunger, 2004) in terms of a time dimension and the achievement of a staked out position through a set of capabilities. As noted above, the

discussion above on Strategic Management in a higher education institution revolves around a few key points of view as follows:

- ✓ **Past, Present and Future point of view:** Strategic Management works on the analytics of understanding what and how it has reached and achieved its present position. It also works on the analytics in understanding and striving towards an envisioned future that it intends to be. As such, Strategic Management has 3 time dimensions, the past, present and future that it must analyze, interpret and understand before deciding on and plotting its future stance and staked out position in the industry.

- ✓ **Capabilities and Position point of view:** Strategic Management works on the principle of competition amongst equals and un-equals for a staked out "position" in the industry. It also works on the principle that the stronger equal will attain a higher share of the market through leveraging its capabilities and competencies set. This would mean that the achievement of an envisioned and staked out position is done through a set of capabilities that the organization has developed and leveraged over time to achieve its present market position and its future envisioned position.

As shown in Fig. 5, the time dimension of the institution performance and its achievement is denoted in 3 time dimensions of:

- ✓ **Past to Present timeline of 1999 to 2010:** The imperative here is to determine what past and existing set of capabilities in terms of its key organization resources of its human, information and organizational utilization to create and add value to its educational product and service offerings. The difference is not in having the resources but the degree in capabilities in the utilization of these resources to achieve the present position in 2010 from a past position in 1999.

- ✓ **Present timeline as of 2010:** The institution will need to determine what are its present performance and achievement based on key performance indicators of its financial, market and operational performance and achievements. This set of key performance indicators will define whether its existing set of vision, mission goals and objectives have been achieved and the variance in the achievement and performance will be a key determinant in its future positioning.

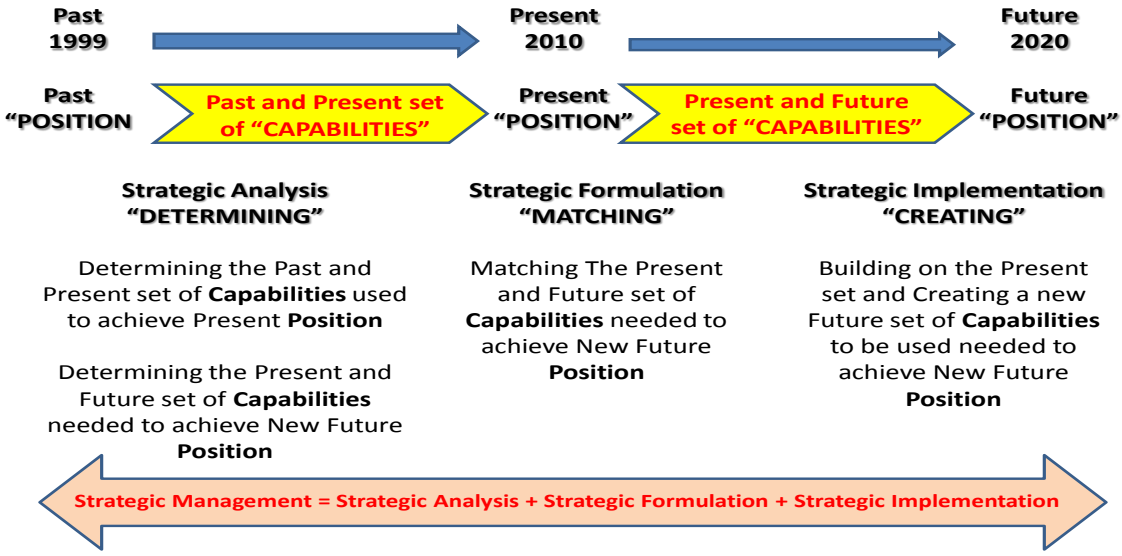
- ✓ **Future timeline of 2010 to 2020:** As of 2010, once the institution knows of its present standing in terms of its positioning, it will need to determine what would be the future position that it intends to stake out in 2020. This would call for a review of its existing vision, mission and goals for a renewed or repositioned set

of vision, mission and goals based on the understanding of the new trends and changes in the future environment. This would also call for the identification of a new set of capabilities to achieve this new position in 2010.

As also shown in Fig. 5, the "capabilities" and "position" dimensions of strategic management are:

- ✓ **Capabilities dimension:** It is a widely accepted notion that in order to achieve certain aspirations or performance, it is based on a set of "capabilities" that underscore the knowledge, skills and values or the

Fig. 5: "Capabilities" and "Position" perspectives of Strategic Management



"competency set" that brings about performance as opposed to a "status quo" or "mother luck" conception. These aspirations represent its future envisioned position that it intends to stake out in the education competitive arena. The degree of performance or achievement in this highly competitive arena is contingent on the level of capabilities and capacities that the institution and its human talent have in the utilization of the resources and processes to create and deliver on educational value. Inevitably the analytics of the capabilities leads to the determination of the internal analysis of the institution as the human, information and organizational resources and its utilization is internal of the institution. This inexorably means that the analytics of its internal environment will lead to the identification of the "Strengths" and "Weakness" of the institution in the degree in its competencies in the utilization of the resources rather than in the ownership of the resources. A full understanding of its capabilities is the key to achieving its position.

- ✓ **Position dimension:** It is also a widely accepted notion that the human survival instinct is geared towards a further improvement of its present standing to aspire to a higher level standing. The institution, which is an organizational entity, is no different from the human entity in her strive towards a higher and better desired ambition from its present positioning. But in its journey towards these higher ordinates of aspirations, it needs to understand its external environment that has an impact on its future beings and future standing in its intended position to be staked out. A full understanding of these external environmental factors leads to the identification of the "Opportunities" and "Threats" that can affect its strategic intent.

2.4 Developing the Basic Strategic Plan

In developing the strategic plan based on the "capability" and "position" dimension above, one would need to define the vision and mission statements that also include the values system enshrined in the beliefs of the institution as an entity.

2.4.1 Writing the Vision Statement: Write the vision statement by answering the question "What do you hope for your university, program, school and students and stakeholders?" Ideally, it should be written in a compelling, inspirational fashion.

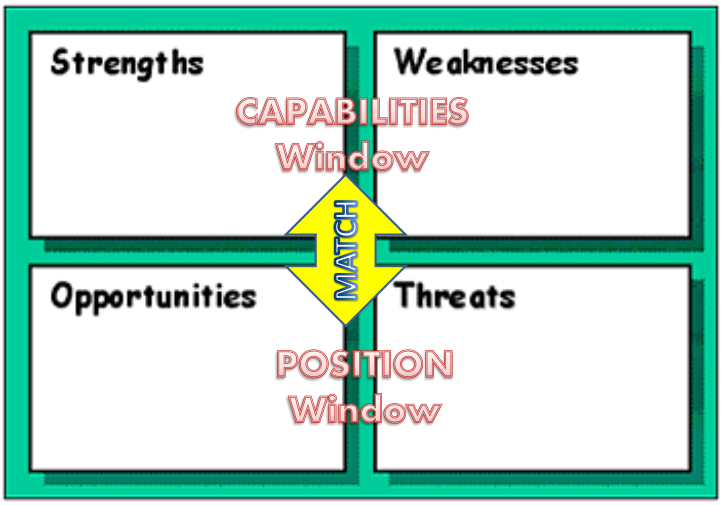
2.4.2 Writing the Mission Statement: Write a concise description of the purpose of your university, program, and school. Answer the question: "Why does our university, program, school exists?" When answering this question, include the nature of your educational products and the groups of students and stakeholders who buy or are affected by your educational products and services. The mission statement should provide continued direction and focus to your plans and operation in your university, school and program.

2.4.3 Writing the Values Statement: Write down the important values from which you want your university, school, program to operate. The values statement depicts the priorities in how the university, school, program carries out activities with stakeholders.

2.4.4 Conduct an External Analysis: Write down your thoughts from an external analysis. An external analysis looks at societal, technological, political, and economic trends effecting the school or program, e.g., trends in the economy, recent or pending legislation, demographic trends, rate of access to trained labor, and competition. In your external analysis, don't forget to look at stakeholders' impressions of the school or program, including bankers', students', stakeholders', community leaders', employment market, parents', etc.

2.4.5 Conduct an Internal Analysis (SWOT): Write down your thoughts from your internal analysis. Write down the major strengths and weaknesses of your school or program. Write down the major threats and opportunities regarding your school or program. Consider trends affecting the university, school, program, e.g., strength of program, reputation of the school or program, expertise of faculty, facilities, strength of finances, strength of administrative offices and operations, etc.

Fig. 6: SWOT "Capabilities" and "Position" Matrix



As shown in Fig. 6, the analytics of the internal and external environmental factors will result in the traditional SWOT matrix which in reality the "SW" represents the "Capabilities dimension" of the institution, and the "OT" represents the "Position Dimension" of the institution. In the formulation of the strategy, and as noted above, the performance and achievement of a certain envisioned future position is based on a set of capabilities to achieve that position. This inevitably means that the envisioned position must be matched to the capabilities as shown in Fig. 6, and in the implementation of the strategies, the capabilities dimension must be built or created to achieve the position dimension.

2.5 Identifying the Strategic Issues

Write down the major immediate and near-term issues that your institution, school or program must address. New schools or programs, in particular, are often better off to first look at the major obstacles or issues that it faces, and next identify the more forward-looking, developmental goals to accomplish over the next few years. For example, current issues might be that student admission rate is dropping, there is no research and development to generate new educational products, faculty turnover rate is too high, etc. Developmental goals for new schools or programs might be, for example, build an academic board, do a strategic plan, do a market analysis to build a new educational product, hire employees, etc. To identify the key issues identified from your strategic analyses, consider the following guidelines:

i. From considering the effects of weaknesses and threats that you identified, what are the major issues that you see? List as many as you can. Consider issues over the term of your strategic plan, but look very closely at the next year especially. Many schools or programs have stumbled badly because they ended up "falling over their feet" while being focused much too far down the road.

ii. Consider each of issues. Ask whether it's "important – that is its IMPACT on the school or program or how it affects the school or program" and "occurrence – that is its probability of happening because if it does not happen, there will be no impact" and its "urgency – that normally defines whether it needs to be dealt with in the short term, medium term or long term. Often, issues seem very important but its occurrence is negligible when they are only urgent, for example, changing a flat tire is an urgent issue -- but you would never put "changing a tire" in your strategic plan. Attend only to the important issues and not the urgent issues.

iii. Deal with issues that you can do something about. Issues that are too narrow do not warrant planning and issues that are too broad will bog you down.

iv. Issues should be clearly articulated so that someone from outside of the school or program can read the description and understand the nature of the issue.

In essence, A key strategic issue is a:

- Future event or trend that may have a significant impact on the university, school or program (e.g., deregulation of an academic industry, signing the AFTA trade agreement or various FTA) and that should be closely monitored

- Decision the insittution is considering making that will have a strategic and dramatic impact on the university, school or program (e.g., merging with another university, school or program, changing its strategy, focusing on international operations)

2.6 A Sample Strategic Plan

Foremost, the HEI and its strategic plan must define the following:

- ***Vision*** **–** The vision will define **"what we WANT to be"**, a dream that the academic or administrative units posit themselves and would like to achieve that defines a future POSITION that the academic or administrative units want to be.

- ***Mission*** **–** The mission will define **"what we CAN be",** that also defines **"why the organization exists"**, and in order to achieve the dream or position that it wants, it needs to define a set of CAPABILITIES of what it can do to achieve that position.

- ***Goals*** **–** Goals are specific accomplishments that will define in broad and general terms of **"what we want to achieve and can achieve".** This represents the definition of a set of broad achievable targets that will state the achievement of its vision and mission to reach that position that it intends to stake out.

- ***Objectives*** **–** Objectives are specific accomplishments that are usually "milestones" along the way designed to measure the achievement of the goal and mission when implementing the strategies. The objectives will define the measurable achievements in terms of the definition of **"what are the measures of the achievements"** which defines its measures and targets that are challenging, achievable, and measurable and with a set time frame.***Objectives are the end results of planned project or activity.*** It must be SMARTER (Specific, Measurable, Acceptable, Realistic, Time frame, Extending, Rewarding).

The 5-Year or 10-Year Strategic Plan must find an answer to the following questions:

i. Where are we now (our current POSITION)?
ii. What do we have to work with (our current CAPABILITY and COMPETENCY)?
iii. Where do we want to be in the future (our new POSITION)?
iv. How do we get there (our new CAPABILITY and COMPETENCY needed to achieve the new POSITION)?
v. Action planning typically includes deciding who is going to do what and by when and in what order for the academic or administrative unit to reach its strategic goals. The design and implementation of the action planning depend on

the nature and needs of the academic or administrative unit. Action planning may seem detailed and tedious compared to strategic planning which often seem creative in nature. Therefore, action planning is too often ignored, leaving the results of earlier stages of planning much as "castles in the air" -- useless philosophical statements with no grounding in the day-to-day realities of the academic or administrative unit as the **OYPB which is the action plans are the day-to-day projects and activities and that supports and achieves the key activities of the strategic plan.***The action plan normally answers the key question "How do we get there (our new CAPABILITY and COMPETENCY needed to achieve the new POSITION)?*

2.7 Developing the OYPB (One-Year-Plan and Budget)

Actions plans or the OYPB specify the actions needed to address each of the top academic or administrative units' issues and to reach each of the associated goals, who will complete each action and according to what timeline.

2.7.1 Conduct Action Planning (project objectives, responsibilities and timelines): For each strategy identified in the 5-Year or 10-years strategic plan, write down the SMARTER (Specific, Measurable, Acceptable, Realistic, Time frame, Extending, Rewarding) project objectives that must be achieved while implementing the strategy, when the project objectives should be completed and by whom and how are they to be measured and assessed -- especially over the next academic year.

2.7.2 Develop an Operating Budget in the OYPB (One-Year-Plan and Budget): List the resources you will need to achieve the goals in the strategic plan and the projects identified in the OYPB (One-Year-Plan and Budget) and what it will cost to obtain and use the resources for each of the project identified. You don't have to be exactly accurate (as it is a close approximation of the utilization of resources)-- besides, you may end up changing your final project budget as you give more attention to the educational product design and planning in the actual project proposal when you actually start to develop or formulate it. You should do a budget for each of the project for each of the years included in the span of time covered by your strategic plan -- but give particular attention to the immediate first year of the time span which is the OYPB that defines the projects that needs to be developed and implemented and the budget needed to achieve the goals and mission of the academic or administrative units.

Look at each of your educational product-related or process or work goals. Think about how much revenue the educational product or process or work might generate. Next, think about the

expenses to produce, sell and support the educational product, process or work such as human resources, facilities, equipment, special materials, marketing and promotions, etc. (Note that this action planning or the OYPB often provides strong input to the overall budget. It will likely convert your operating budget to a set of project budgets).

In the OYPB there are many different kinds of effects we might seek and that we might create as follows:

i. What are you trying to achieve?
ii. What are you trying to preserve?
iii. What are you trying to avoid?
iv. What are you trying to eliminate?

This linkage above can be recast into the four questions as follows:

i. What do you want that you don't have? (Achieve)
ii. What do you want that you already have? (Preserve)
iii. What don't you have that you don't want? (Avoid)
iv. What do you have now that you don't want? (Eliminate)

2.7.3 Specifications of the OYPB: As the action plan for academic and administrative units identifies what needs to be done and how it is to be done that are normally defined or created as the projects to be implemented. The project should identify each major function, each administrator and each faculty or staff, based on the following key education areas as follows:

i. Mission and Goal of the university, school or program
ii. Teaching and Learning
iii. Student Services and Development
iv. Research
v. Faculty and Staff Development
vi. Academic Services
vii. Preservation of Art and Culture
viii. Administration and Management covering governance and learning resources and facilities
ix. Finance and Budget
x. Quality Assurance System

2.7.4 Each of the projects needs to specify:

i. The goal(s) that are to be accomplished
ii. How each goal contributes to the academic and administrative units' overall strategic goals
iii. What specific results (or objectives) must be accomplished that, in total, reach the goal of the academic and administrative units?
iv. How those results will be achieved?
v. When the results will be achieved (or timelines for each objective)?

2.8 Alignment of School and University VMGO and the Projects and Budget

It is important that the VMGO (Vision, Mission, Goals and Objectives) of the academic or administrative units be aligned with that of the university. The alignment is an imperative as what the academic or administrative units do in its mission, the definition of the academic or administrative units goals, SMARTER objectives and its strategies and projects and budget, they should be aligned to support and achieve the basic mission and philosophy of the University.

2.8.1 Sample Mission of HEI

HEI exists for the main purpose of serving the nation by providing scientific and humanistic knowledge, particularly in business education and management science, through research and interdisciplinary approaches. To this end, it aims at forming intellectually competent graduates who

- *are morally sound, committed to action justly, and open to further growth;*
- *appreciate freedom of expression, imbued with ethical attitudes and ideologies through a carefully integrated curriculum of Ethics, Science, Languages and Business Management; achieve academic excellence through hard work, critical and positive thinking, and effective decision-making.*

2.8.2 Sample Strategic Goals of Theme 2 for Creating and Strengthening Quality Teaching and Learning (P1 – Phase 1 and P2 – Phase 2)

It should be noted that in order to fulfill the HEI mission in forming intellectually competent graduates, a key process is the teaching – learning processes, and to achieve this theme, the strategic goals for this thematic strand of creating and strengthening quality teaching and learning must be identified. These are the overarching strategic goals for the HEI of which they must be translated into the school's mission and strategic goals. The strategic goals, its initiatives and metrics are defined in Table 1, with its corresponding measurement of its annual performance shown in Table 2. The strategic goals for the HEI are:

P1 2.1 HEI will create a positive learning environment that enables students to achieve their full academic potential and to cultivate their personal development.

P1 2.2 HEI will create a curriculum meeting the highest standards of excellence across the University.

P1 2.3 HEI will develop a system for academic advising that meets the needs of the students and leads to academic success.

P2 2.4 HEI's program develops strong students' competency of knowledge and skills and effectively prepare students as competent and ethical citizens.

P2 2.5 HEI will continually improve and innovate on the quality of our program offerings and their delivery and link it to the National Qualification Framework at all levels.

P2 2.6 HEI will include more international aspects in its curriculum context and content.

2.8.3 Sample Mission of the School

*The School of A exists for the main purpose of serving the society with the highest commitment through providing **high quality educational process** with the **best academic resources**, using student-centered approach, advanced information technology and innovations to **educate qualified graduates**, **create body of knowledge through research**, and provides academic services to the society.*

2.8.4 Sample Goals and objectives of the School for Teaching and Learning

The university strategic goal is: P1 2.2 HEI will create a curriculum meeting the highest standards of excellence across the University. (representing the envisioned position of HEI). The mission of the school is a ***high quality educational process*** calls for actions by the school to identify its goals, objectives, strategies and action plan to support a high quality curriculum that leads to the highest standards of excellence. The strategic goals, its sub-goals, SMARTER objectives, strategies and action plans for the school that represent the capabilities to be created are discussed in the examples below:

Strategic Goal 2.1: ***Providing high quality educational process***

Goal 2.1: The teaching-learning processes must be student-centered

SMARTER Objectives: (these represent the KPI measurements of performance in the quality management)

Objective 2.1.1 60% of context of the school's curriculum and delivery process must be student-centered by 2010

Objective 2.1.2 30% of the school's faculty must be trained in student-centered pedagogy by 2009 and achieve a 100% rate by 2012.

Strategy:

Strategy 2.1.1 To set up an academic task force to lay down the criteria and standards of a student-centered curriculum and delivery process, to review and ensure that the curriculum and the delivery conforms to the criteria and standards.

Strategy 2.1.2 To identify faculty who needs training in student-centered approach and develop workshops to train the faculty.

Projects for "The teaching-learning processes must be student-centered"

Project 2.1.1 Details of the project and budget to be used to set up the academic task force to develop the criteria and standards.

Project 2.1.1: (Project title: Establishment of task force to review curriculum)
Goal: (Strategic Goal # 2.1 to be achieved)
Objective: (Strategic Objective # 2.1.1 to be achieved)
Strategy: (Actions and activities supporting Strategy # 2.1.1 used)
Project details: (Details and budget)

Project 2.1.2 Details of the project and budget to be used for the training and workshops to train the faculty in the student-centered curriculum and delivery.

Project 2.1.2: (Project Title: Student-centered curriculum and delivery workshops for faculty)
Goal: (Strategic Goal # 2.1 to be achieved)
Objective: (Strategic Objective # 2.1.2 to be achieved)
Strategy: (Actions and activities supporting Strategy #2.1.2 used)
Project details: (Details and budget)

Goal 2.2 ***The teaching-learning process must develop qualified graduates***

Objective 2.2.1 The school's Student Competency and Effectiveness Index must achieve a 10 % increase annually

Objective 2.2.2 30% of the school's curriculum should use the Student Competency and Effectiveness Index as the minimum standard by 2009 and achieve a 100% rate by 2012 at all levels of the curriculum

Strategy:

Strategy 2.2.1 To set up an academic task force to lay down the criteria and standards to ensure that the Student Competency and Effectiveness Index is used as the minimum standard in the school and in each of the program and subject.

Project 2.2.1: (Project Title: Academic task force to define criteria and standards of Student Competency and Effectiveness Index)
Goal: (Strategic Goal # 2.2 to be achieved)
Objective: (Strategic Objective # 2.2.2 to be achieved)
Strategy: (Actions and activities supporting Strategy # 2.2.1 used)
Project details: (Details and budget)

Strategy 2.2.2 To ensure the Student Competency and Effectiveness Index is measured in the school and in each of the program and subject.

Project 2.2.2: (Project Title: Measurement of Student Competency and Effectiveness Index)
Goal: (Strategic Goal # 2.2 to be achieved)
Objective: (Strategic Objective # 2.2.1 and 2.2.2 to be achieved)
Strategy: (Actions and activities supporting Strategy # 2.2.2 used)
Project details: (Details and budget)

Conclusion

In summary, as noted by Andersen *et al.* (2006), the quality, information and planning management, or all aspects of the HEI commitment of educational value to society must be approached from a holistic perspective with a set of appropriate plethora of tools and techniques depending on the situational needs. Bringing about a cross marriage of the education management through quality management and strategic management, with the IS/IT management as the enabler for quality management and planning management is the hall mark for successful quality higher education. Moving from the macro organizational strategic needs to the micro level operational processes needs a new mind-set that calls for the capability and capacity of the individual and organization.It can thus be said that strategic management is the "***determination, matching and creation of the capabilities of the institution to achieve a future envisioned position based on the timeline from the past to the present and into the future***". This would mean that Strategic Management as expounded in Fig. 5 is:

Strategic Management = Strategic Analysis + Strategic Formulation + Strategic Implementation

- ✓ **Strategic Analysis**: ***DETERMINING*** the past and present set of **CAPABILITIES** that is used to achieve the present position from the timeline 1999 to 2010 to reach its present **POSITION** in 2010.
- ✓ **Strategic Formulation:** ***MATCHING*** the present set and a future set of **CAPABILITIES** that is needed to achieve a future envisioned position from the timeline 2010 to 2020 to a new envisioned **POSITION** in 2010.
- ✓ **Strategic Implementation:** ***CREATING*** the new set of **CAPABILITIES** that is needed to achieve its new envisioned **POSITION** in 2020 through the timeline 2010 to 2020.

Basically, in understanding and applying strategic management to the HEI to bring about quality education and for strategic management to be successful, the strategic plan developed must be aligned with the units' strategic plan. It must be actioned on by aligning the strategic goals and converting them into the units' actionable goals, objectives that must be set and measured on an annual basis to ensure that the strategies are implemented, checked by its measurements and acted upon.

In conclusion, it is hoped that this paper achieves its objective in de-mystifying the intricacies of quality management and strategic management via the strategic planning mechanism and the alignment and linkage through the actionable annual operation plan and budget that defines the key performance indicators quality measurement and achievements.

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GENDER EQUITY: WOMEN IN ACADEMIA IN FIJI

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Abstract

Universities in many countries are facing the challenge of recruiting and retaining high quality academics. The exit of baby boomers in the academic workforce is significant with lack of strategy to attract, support and retain women in their early career as academics and researchers. This challenge is enormous in developing countries despite democracy, academic freedom, stability, sustainable economy, and free education at higher degree research level. This paper outlines the current dilemma in Fiji in relation to the succession of women in academic roles. The paper analyses the representation of female academics at the University of the South Pacific (USP) and strongly argues the need for higher education reforms which includes strategies to provide opportunity for young females and other underrepresented groups in the academic workforce. The paper also suggests possible strategies to increase the participation of women in the academic workforce in Fiji based on current and future political environment.

Keywords: women in academia, gender equality, academic workforce in Fiji

Introduction

Universities are one of the most highly respected institutions. The presence of highly educated individuals who are engaged in research and teaching, and the important role of universities in research, discovery, and innovation makes universities one of the most respected and autonomous institutions. For many decades universities have played an important role in the social and economic development of the home country and beyond, through the education of

citizens, access and participation of all groups of people, collaborative research, international higher education, and other engagement activities (Tasker and Packham 1990). Female academics have contributed significantly in the formulation of national and institutional policies, managing reforms, turning the universities around from deficit to surplus, securing large sum of external research grants, and winning teaching and research awards which demonstrates excellence. Women are equally as innovative, charismatic, visionary and initiatory as men (Johnson, 2000). Professor Don Aitkin, in his retiring address to staff as Vice-Chancellor of the University of Canberra, asserted that women in higher education were more concerned with good outcomes and harmony than with the male focus on winning (Aitkin 2001, p.7).

In Australia for example, 9 out of 39 (23%) Vice Chancellors are females and 19 out of 39 (49%) Deputy Vice Chancellors (Academic) are females (Universities Australia, 2013). Developed countries have made good progress in the recruitment, retention and in some cases succession strategy for talented female academics and researchers. Such initiative is not only undertaken due to democratic values and principles – they are also undertaken as part of recognising the contribution of females in social, economic and environmental development.

Although progress has been made in developed countries, universities continue to face the challenge of recruiting and retaining high quality female academics and researchers due to a number of factors including;

- Work life balance and flexible work conditions offered by public and private sector institutions;
- Lack of strategy in institutions to identify talented individuals who have the potential to lead; and
- Lack of strategy to develop early career academics and supporting them in their career.

Previous research suggests a number of barriers resulting in the under-representation of women in universities. They include lack of networking opportunities, and a lower level of advancement in women's research careers compared to their male counterparts (Bellamy & Ramsay, 1994; Gardiner & Tiggemann, 1999). In addition, the ongoing responsibilities of childcare and household tasks, typically performed by women, consume time, energy and concentration, and restrict the number of hours spent on campus (Armenti, 2004; Caplan, 1993; Probert *et al.*, 1998; Ogbogu, 2011), at the expense of research and publishing. Studies have also shown other barriers in the advancement of females in academic roles. These include masculine organisational culture (White, 2003), inadequate networks, mentors and role-models (Joiner et al., 2004; and Quinlan, 1999), work and family imbalances (Ward and Wolf-Wendel, 2004) and gender power imbalance in the workplace (Oakley, 2000). While many studies are undertaken across the world about gender equality in universities with enormous literature, no study has been undertaken in Fijian context.

The paper analyses the composition of female academics at USP and argues that there is an urgent need to develop policies and initiatives to increase female academics in senior roles. Such study is critical in Fijian context as the current study shows significant problems related to the succession of females in academic roles.

Methodology

Data on female academics at various academic levels was obtained from USP. The study only focused on simple analysis of data at overall university level rather than faculty or age groups in detail. The data on the number of female academics in Australian universities is also used as a comparison

The Case of Fiji

While developed countries continue to bridge the gender gap, small Pacific Island countries such as Fiji have a long way to go. The case of Fiji is unique. The ongoing instability due to political problems since 1987 have witnessed significant migration of skilled and talented individuals, a huge loss of human capital (Reddy, Mohanty et al. 2004). Prominent academics and researchers from Fiji who studied offshore in United Kingdom, New Zealand, and Australia have now considered overseas as a home country for job security, personal and family wellbeing, and freedom to voice concerns on issues of their expertise. The ongoing political problems and its consequences have had a huge impact on gender equality in academic workforce. The high tuition fees, limited scholarships to study at PhD level, and prioritizing between investment in education or other needs and wants limits access and success in the attainment of higher degree research. Another problem faced by women in Pacific Island countries especially those from low socio economic background is limited careers advice and financial support to undertake a research degree.

In recent years the enrolment (USP Strategic plan - 2013-2018, 2013) and completions of female students in undergraduate program is higher than male. The high participation and completions of female students suggests motivation to complete the study and to succeed in their career is present. While efforts have been made by female students to enroll and succeed, limited progress have been made by the university, and the government using more proactive means to support females in undertaking study at research degree either through scholarships or loans. The political problems in Fiji since 1987 have resulted in instability with lack of foreign aid that could be directed to support the education of females at research degree level. Governments to date have focused more on areas such as tourism, infrastructure developments, investments, and other reforms related to school education with limited emphasis on post-secondary education reforms.

The analysis of females in academic roles at the USP indicate only two regional female academics are at Professor and Associate Professor level. One out of the two is Fijian. Both senior female academics are above 40 years of age. The University has a total number of 13 (7.10%) female staff who are at Senior Lecturer level and most of them are also above 40 years of age. Only 7, that is, about half only are regional staff. There are more female academics at Lecturer and Associate Lecturer level however more than half (44) do not have a PhD. In total 38 female academics across the University have PhD and out of this 18 only i.e less than half are regional staff.

Table 1: Female Academics at USP

Females in academic role at USP	Total female number	% Total female number	Age < 40	Age > 40	Regional female number
Professor level	2	1. 1	0	2	1
Associate Professor level	4	2. 2	0	4	1
Senior Lecturer level	13	7.1	3	10	7
Lecturer level	30	16.4	9	21	15
Associate/Assistant Lecturer level	33	18.0	18	15	29
With PhD	38	20.8	6	32	18

Table 1 outlines the number and percentage of female academics at USP. By way of comparison, in two Australian universities similar to the size of USP, the total female academics represent 51% in one and 41% in the other university while at USP the percentage is 40%. In 2012 the total female academics in all Australian universities was 43.6%. Comparison between 2008 and 2012 data on female academics in Australian universities suggest increased participation of women in academic roles. For example in 2008 there were 2,579 female academics at Professor and Associate Professor level compared to 3,772 in 2012 (increase of 1,193). According to White (2003), the percentage of female academics at Professor and Associate Professor level in Australian universities in 2000 was 16%. Table 2 outlines the number of female academics in Australian universities in 2008 and in 2012. It also shows the percentage of female academics in 2012.

Table 2: Female Academics in Australian Universities

Academic levels	Female 2008	Female 2012	Male 2012	% Female 2012
Associate Professor and Professor	2,579	3,772	9,535	28.3
Senior Lecturer	3,970	4,907	6,689	42.3
Lecturer	7,248	8,701	8,126	51.7
Associate Lecturer	4,627	4,646	3,973	53.9

Other international comparison suggests that in Portugal, females represented 41.3% of professoriate in 2007 despite the dictatorship regime between 1933–1974 (Carvalho and Machado, 2010). In Israel, women represented 8.8% of professoriate appointment in 1999 (Toren 2001). Singh (2002) reports that the percentage of women professors in developing and developed Commonwealth countries ranges from 10 to 20%, with an average of 13.1%. According to Ismail *et al* (2005), Malaysia (16.9%), is above the average, found to be higher than the percentages in countries such as Canada (14.5%), New Zealand (11.7%), the UK (11.2%), and Singapore (6.6%). Study by (Va´zquez-Cupeiro and Elston, 2006) outline the percentage of females in professor roles in Europe with top five countries having high percentage of female academics at professor level includes 21.2% in Finland, 20.9% in Portugal, 17.6% in Spain, 16.4% in Italy, and 16.1% in France.

The key factors which are most likely the cause of limited progress in the succession of females in academia are the lack of appropriate government policies to drive change, and the lack of planning within universities. A quick glance at the most recent strategic plan of the USP, shows no initiative(s) to increase the number of female academics in the University. Similarly the strategic plan of the new University of Fiji (University of Fiji Strategic Plan- 2011-2014, 2011) does not include any initiative to increase the proportion of female academics. On a positive note, the University of Fiji has established a Centre for Gender Research, however its output is not widely known with progress yet to be seen.

Some of the key factors limiting the success of women in academic roles in Fiji include the following:

- Lack of government policy to provide free education or scholarship to undertake higher degree research study;
- Lack of institutional strategy and agreed targets for recruiting and training female academics;
- Lack of strategy in universities to identify potential students to undertake research degrees;
- High cost of tuition to undertake research degrees;
- Availability of senior academics as supervisors on a wide range of topics which is of significance to Fiji;
- Lack of motivation for females to undertake further study;
- Lack of support by employers to provide financial and non-financial support such as study leave;
- Conflicting demands with high cost of living and prioritizing the needs of the family;
- Increased unemployment and promotion of educated individual with lack of confidence that further education will improve the chances of better job;
- The divide between the rich and poor with very few students from remote regions and outer Islands having access to elite education at undergraduate level leaving alone the prospect of research degree study;
- Lack of research culture in universities to support existing early career academics with postgraduate coursework qualification to undertake research and publish papers in reputable journals;
- Limited number of overseas scholarships to students to undertake research degree in overseas universities; and
- Lack of strategy in universities to recruit and attract early career researchers such as post-doctoral fellows.

The challenge for Fiji to grow female academic staff numbers is enormous and raises some important questions for governments and universities:

a. Do autonomous academic institutions practice equity, diversity, and transparency?

b. Do governments and universities continue to ignore the fact that in few years there may be no local female academics at Associate Professor and Professor level?
c. What will happen to innovation in research in areas such as health, medicine, pharmacy, and education which has been dominant by women?
d. Do we continue to rely on overseas expatriates to solve and owe our social, economic and political issues to fill the gap or do we build the capacity within?
e. Do we need a strong female politician to drive this change, or can we trust on our most educated university leaders to tackle the current problem?
f. Do we want the next generation of students to be taught by male academics only or expatriates;
g. Do we want Fijian women to lead research on matters of significance to the Pacific Island countries?

Demand and Supply

Any effort to increase the employment of female academics is based on current enrolment of higher degree research students in Fiji universities. Low access and opportunity for students to undertake higher degree research will limit the participation of women in higher academic roles. Table 3 below shows the data for female students that are currently enrolled for a research degree at the USP from 2009 to 2013. The information shows that normally between 46% to 49% of those enrolled for research degrees in the last five years are females.

Table 3. Number of female enrolled for research degree 2009 – 2013

Year	Female enrolment (Headcounts)	% Female enrolment
2009	143	49
2010	142	46
2011	165	49
2012	177	46
2013	135	49

Table 4 illustrate that in the last five years, between 41 to 44 percent of students awarded with a research degree are females. Both sets of data in Tables 3 and 4 suggest that there is a pool of females who, if provided with the opportunity and mentored could consider academic roles.

By comparison, the trend data on commencing student enrolment in Australian universities suggest consistent increase. Table 5 outlines the enrolment of commencing students in Australian universities where the increase over the period 2008 – 2010 was at an average of 7% In two selected outer metropolitan universities higher degree research completion in 2010 were 167 in one university and 135 in another. The enrolment and completion of research degree students in Australian universities suggests sustainable supply of academics with PhD qualifications (see table 5).

Table 4 Number of research degrees awarded to female 2008 – 2012

	Female Research awards	Total Research awards	% Female research awards
2008	75	178	42
2009	106	260	41
2010	86	198	43
2011	105	238	44
2012	129	291	44

Table 5: Commencing HDR enrolment in Australian Universities

2008	2009	2010
9,192	9,884	10,514

Source: The Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education: selected higher education statistics 2008-2010.

Which way forward?

The unstable political landscape in Fiji is a likely factor in the slow progress in higher education reforms especially with respect to issues around gender equality. The government has not expanded policies related to higher education reforms. The new and existing political parties have not publicly communicated their party manifestos. Since the military government takeover, the freedom for academics and researchers to voice concerns on various facets of development (economic and social) have been minimum with fears of victimization. In light of the lack of policy reforms, the authors suggest the following strategies that could be used to increase and support female academics in Fijian universities.

Scholarships and Student Loan

An increased number of research degree scholarships or loans targeted to equity groups such as women to access tertiary education may boost the number of females into the academic workforce. Such scholarships or loan should be based on both merit, and also on socio economic status. The strategy will address issues related to equity and access, and an increase in the number of females undertaking research degrees. Discussions between foreign embassies may also result in awarding PhD scholarships for students of all backgrounds.

Setting and Monitoring Standards

In developed countries governments have used policy instruments to reform higher education. Countries such as South Africa, have policies that are legislated to provide fair access for all groups of people to participate in higher education. The Fiji Higher Education Commission

promulgation expect the higher education institutions in Fiji to meet a number of standards for registration purpose. It is suggested that one of the standards for registration could be around access and equity, both in terms of student access and participation, and gender equality in academic workforce. The compliance to such standards could be monitored by the higher education commission in Fiji as part of reregistration. It is also argued that programs and policies that are designed to promote gender equity in academia must take into account family outcomes as a measure of gender equity (Mason et al 2004), as it is known the demands of family life can often be in conflict with the demands of an academic career.

Participation of Women at Workplace

Fiji has a long history of having an explicit government department and a Minister with a focus on women and gender equality. The department could play a very important role in developing policies to ensure equal opportunities and further participation of women in education and the workforce starting with universities and public sector organizations. Policies on equal representation of women could empower them to undertake further study to enhance their career aspirations. National awards by the government to institutions who have a successful record of gender balance may over a period of time motivate other corporate organizations to follow.

Strategy and Initiatives

Universities will need to play a greater role in identifying opportunities based on the use of performance data and developing actions to bridge the gap. There is a need for institutions to revisit the academic workforce profile, and develop strategies and targets to increase the proportion of females in academic workforce. Rewards may be linked to meeting the target for each faculty. Oversight by the University Council and the Senior Management Team is needed to genuinely address the issues around gender equality.

Capacity Building

The implementation of strategies and monitoring on the target is the first step to increase the proportion of female academics. Range of programs need to be implemented to guide early career academics in both teaching and research. They include mentoring programs in areas such as: publishing papers, preparing application for grants, engagement with stakeholders to identify possible research, curriculum development and renewal, and other learning and teaching pedagogy. Research has shown that mentoring programs with female academic has resulted in high retention, success rate in securing grants, and increased research outputs (Gardiner et al, 2007).

Succession of Women

The succession of women in senior academic role depends on workplace strategies and cultures to recognize and reward academics. Young and talented academics that have reasonable history of research and managing various aspects of learning and teaching could be seconded to mid or senior academic roles with professional development programs in targeted areas such as

governance, strategy and policy, quality and standards, academic outcomes of students, risk management, and other areas.

Formal and Informal Network

Formal and informal networks of women and other groups could assist individuals in their career progression. Such networks could assist early career academics and research students to exchange ideas, and develop self-confidence.

Conclusion

There are many wonderful aspects of an academic life; as well Universities contribute significantly to the social and economic fabric of a community. An academic career can provide more freedom and traditionally more autonomy than most other occupations. Generally an academic career allows the worker to spend time working on an area of research they are passionate about, however with this career also comes high levels of demand and output expectations. There are expectations around high levels of knowledge and one is often required to prove that that they are the right expert for the position. These pressures place demands on the psychology and wellbeing of the worker, often requiring a worker to give total priority to their work (Bailyn 2003, Mason et al 2004). In some ways this sets up the gender inequality often observed in senior positions at Universities, as explored in the Pacific Islands case studies. Previous researchers have highlighted that gender equality and diversity are positive attributes in organizations (Carter et al., 2003; Erhardt et al., 2003; Krishnan and Park, 2005; and Welbourne et al., 2007).

Higher education reforms in Fiji are timely with increased focus on research productivity, graduate quality, and building the next generation of its academic workforce. Based on the current trend, it is clear that in the near future there will be no local females in senior academic roles, which is of grave concern. In its 45 year history, USP has had male Vice Chancellors and based on the current trend, a local female Vice Chancellor would not be possible in the near future. The lack the succession of women in senior academic roles raises many concerns on the future of academic workforce, and the learning experience of students in various disciplines. It also raises concerns on future research and discovery in areas such as allied health and medicine which has a dominance of local women in their workforce. Fijian universities have relied on expatriates to fill their senior roles and had a lack of focus on building local capacity.

This paper argues that the time is now to begin making significant changes in the way Fijian Universities support, employ and maintain their female workforce. In a recent Time magazine, Bill Clinton states that gender equality across the world is vital, "no society can truly flourish if it stifles the dreams and productivity of half its population…it's been proved that women tend to reinvest economic gains back into their families and communities more than men do (Clinton 2012, pg 4)". There are strong reasons why gender equality must occur, this paper has highlighted ways in which Fiji and also the Pacific region could begin this process and enable its Universities and wider communities to flourish.

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INSPIRING CAREER DEVELOPMENT AND EMPLOYABILITY AMONG UNDERGRADUATES THROUGH REALITY TELEVISION PROGRAMME

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Abstract

This article examines the social context of Career Development and Employability (CDE) in academic practice, and proposes an innovative and motivational framework for the development of students' CDE skills based on the reality TV show, *The Apprentice*.The research work carried out involved participant observation and face-to-face interviews in order to understand perspectives and perception of career development and employability. The CDE framework is qualitatively and quantitatively evaluated from a sample of 58 participants in the context of the student experience. The student experience was asserted by increasing student motivation and engagement.The method used allows other academic subject disciplines to fit into the CDE frameworks. For example, business studies can adopt the concepts and the components of the frameworks in the respective teaching and learning processes.

Keywords: Employability; Career Development; Lifelong Learning; Critical Thinking; *The Apprentice*; Student Confidence

Introduction

The Social Context and Academic Practice

The development of a nation's knowledge and skills is paramount to the continuous evolution of world affairs which calls for healthy economic competitiveness and sustainable growth. This development is referred to by John Denham, in a speech at the House of Commons on the 29 February 2008(The

House of Commons, 2009), as: "*the unlocking of British talent through innovation as never before*". More recently,(Browne, 2010), in Securing a Sustainable Future for Higher Education independent review, states that "*graduates go on to higher paid jobs and add to the nations strength in the global based economy*".

The Innovation, Universities, Science and Skills Committee - eleventh report contains recommendations to the government presented by evidence gathered, amongst other sources, the Confederation of British Industries (CBI) and the Engineering Council UK (EC UK). Aspects of this evidence call on the government for the definition of what a world class higher education system "*of the future should look like, what it should seek to achieve, and establish the current barriers to its development"*(The House of Commons, 2009).

The contemporary educational reality must propose the implementation of academic practice that promotes the unlocking of talent through innovation and the development of employability and career development to promote the key economic values presented earlier. It is therefore vital that suitable alternatives are studied to promote and support the relationship between innovation, career development and employability which inform a world class higher education system. Employability is more than just academic skills printed on the certificate, but also includes elements, such as: technical skills, personal development, transferable skills and key skills, as depicted in Figure 1.

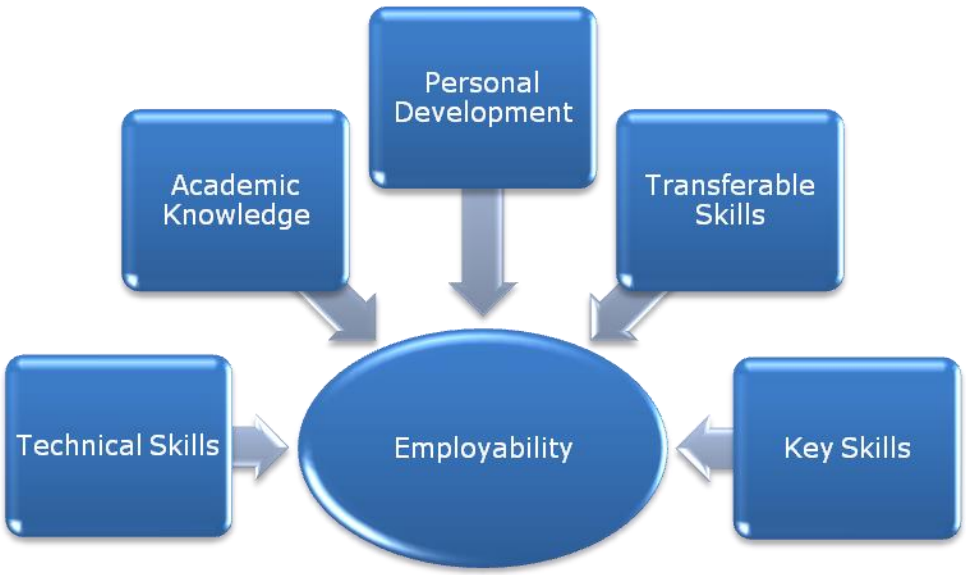

Figure 1 – Components of employability

Problem Philosophy

Higher Education Institutions are under increasing pressure to develop their graduates' enterprise and employability skills and to cultivate and support students' confidence and knowledge to setup businesses. These views are prominent in the Quality Assurance Agency (QAA) report on employability of higher education(Yorke, 2006), and expressed in terms of employability as a

curricular process, and as an achievement and potential. The QAA report further develops the idea that employability is not the same as employment, for the simple reason, that it involves the capacity of the graduate to function in a job. Employability as a curricular process is one that facilitates the development of the core and transferable skills appropriate for employment as well as the students' reflection of their learning and experiences.

This is achieved by embedding core and specific competences and attributes in graduates, preparing graduates to manage their own personal development and accrediting employability skills that employers should identify in graduates.

Historical Perspective and Developments in Employability

In 1991, the Finn Report (Finn, 1991), commissioned by the Australian Education Council, proposed a new national target for participation and levels of attainment in post compulsory education and training as a reply to strong employer demands to better prepare young people for employability. This committee identified six employment key areas of competence presented in the Mayer Report (Mayer, 1992). The Mayer report contained a set of seven statements designated as key competencies and three characteristic levels. The seven key competencies are defined as: Collecting, analysing and organising information; Communicating ideas and information; Planning and organising activities; Working with others and in teams; Using mathematical ideas and techniques; Solving problems and using technology. The characteristic levels were designated as: generic, transferable and, can be learned. The key difference between the work of Finn and Mayer is that the later considered the competencies to be integrated into the curriculum and training packages and applied to general education instead of just post-compulsory education and training.

The (ACCI/BCA, 2002) abandoned the idea of key competences due to the lack of industrial and occupational context and proposed a framework of employability articulated by the key competences of (Mayer, 1992). The eight employability skills defined were: Communication; Teamwork; Problem Solving; Initiative and Enterprise; Planning and Organisation; Self-Management; Learning; and Technology. This framework is also a key to recognise the inclusion of the notion for required attitudes and behaviours for successful participation in the workplace; however no explicit statement is made to what such behaviours might have been.

In the UK, despite having a fairly wide view of employability, the Dearing Report(Dearing, 1997) chose to focus attention in recommending the key skills of communication, numeracy, the use of information technology and learning how to learn. The Dearing approach to key skills is symptomatic of a widespread failure to underpin keyskills with theory.

The employability work of Yorke & Knight (2003) recognises the initial characteristic of the work of (Mayer, 1992). Core (key) skills and transferable (generic) skills are defined. However the work of (Yorke & Knight, 2006), mirrors the recommendations proposed by the (ACCI/BCA, 2002) and takes the definition of employability to a more complex construct which includes the academic value of acquiring soft skills. These include, for example, a person's emotional intelligence quotient and the cluster of personality traits.

Current thinking of employability extends the social understanding of this phenomenon to the context of the state of a nation's economy and the concept of lifelong learning and calls for more integration of learning theories in the implementation of employability into the curriculum. This implementation is not of type "one size fits all" as one needs to be sensitive to the regional and national labour markets, sociological trends of student recruitment andthe importance of economic prosperity, creativity, innovation and entrepreneurialism in the workforce. Evidence of this thinking can be found in (Yorke, 2006). In addition, several models of integrating employability in higher education institutions are identified by (Yorke& Knight,2006). These models fall into a number broad categories shown in Figure 2.

Figure 1 - Models of Embedding Employability in the UK Huger Education identified by (Yorke & Knight, 2006)

In summary, all models of embedding employability across the sampled UK Higher Education Institutes (HEIs) base their philosophies on variations of the work of (Mayer, 1992) with the thematic characteristics of employer engagement and personal and professional development (Career Management).

Career Management

Career management has been identified by studies of employability as key to itsfostering and being alifelong critical reflection activity that involves planning and recording for personal and professional development. Such activity cannot be confused with the simple writing of a covering letter or an application statement for a job application. These are all activities that form part of an individual's careermanagement plans. However, the complete process of reflection considers the individual's life aims and objectives.

Thompson & Evans (2005) presented a concise and non-theoretical example of the process of becoming a critical thinker.

> *"You can learn that to eat an apple you can eat the flesh and skin but usually leave the core. Once you have this knowledge you could apply it to eating a pear but not a banana. So you learn another fact – to eat a banana you have to peel it, not eat the peel but eat the flesh. Now that you have this new knowledge you can apply it to a few other fruits possibly, but not all."*(Thompson & Evans, 2005)

The rationale and benefit of integrating critical thinking activities as a part of programmes of study and individuals' career management are presented in (Schafersman, 1991). This focusis on teaching the student *how to think*and not only *what to think*. An '*how to think'* philosophy is well recognised to develop creative thoughts and to engender entrepreneurship.Engineering and Technology practitioners very easily engage in logical thinking when writing curriculum structures, which prominently, do not promote the students critical thinking ability.

Reality TV in Academic Practice

Today people are living in a world regulated by information and communications media perfectly synchronised by technological gadgets via the Internet and Television.Reality TV series,are well known to engage large television audiences. In recent years this engagement has spanned to the internet via sophisticated real time Internet blogs where entire communities come together to share knowledge and understanding, make their own observations and express opinions.

In the same way the Internet and television cohesively work as a powerful large scale information system that captures people's everydaylives, the new learning and teaching environments must base their philosophy for survival in adapting social context models to engage and motivate students. These models must make connections to the real world, recognise individual differences, have students actively engaged in real life learning and with a degree of choice and control over the learning process.

The Apprentice is an award winning reality television series where a group of men and women compete for a highly remunerated job with one of the world's richest men, Lord Alan Sugar. The series was created by Mark Burnett and has consistently performed in the top 10 viewed programme series in the UK with an average of approximate 6.5Million viewers (Broadcasters Audience Research Board, 2010).

Candidates work in teams on a series of entrepreneurial tasks and are observed by two of Lord Sugar's senior aides. Similar process is mirrored in this process. Each programme culminates with a boardroom where the performance of the teams and individual candidates is evaluated. Subsequently one candidate is told to leave the programme, with Lord Sugar using the famous words: *"You're Fired",* and *"the search for Lord Sugar's apprentice continues"*. When four candidates are left, they undergo an individual "interview from hell" (Lord Sugar), by a number of Lord Sugar's entrepreneurial circle of high profile business contacts. This process results in the selection of two finalists who perform one last task with teams chosen from the previously fired contestants, after which one is told, "You're hired!" (Lord Sugar), and wins the highly-paid executive job.

The show is not designed as a tool for pedagogic practitioners but it does highlight and thoroughly test key entrepreneurship skills such as leadership, teamwork, project management, strategic thinking and dedication are integral skills most recruiters are looking for in current graduates. The pedagogic practitioner too seeks to develop methods that can capture the motivation, enthusiasm and engage of students in the same way modern electronic gadgets and television programmes do. Using the framework of *The Apprentice*and its components an innovative learning and teaching environment platform is created to motivate and engage students in CDE.

Innovation and Components of the CDE Framework

The Career Development and Employability (CDE) framework isan innovativeacademic practice concept for teaching, learning and assessment of undergraduatestudents'career development and employability skills within a unit of study. The concept embraces the style, process and techniques used in the reality television show *The Apprentice* from the British Broadcast Centre BBC1 and conducts student assessment based on the work of the International Personality Item Pool. The CDE framework also embeds classical teaching and learning methods and supports current academic practice philosophies.

The CDE concept is designed to provide students with knowledge and understanding of the theory and practice of project management and develop students' career skills ready for the employment markets. Project management techniques are applied to the development of engineering and technology projects. Students work in teams and develop both individual, team and business task personality traits. Alongside this, students develop their ability to think critically and with emotional intelligence coupled with behavioural interviewing techniques.

The innovation of the CDE brings together two educational components: career and employability skillsdevelopment exploring both EQ and IQ in a set of reality TV.This is shown in Figure 3.

Figure 2 – CDE Career Development Component Vertices

Each component has a number of vertices which allow for the exploration of the self, the team and the set task. The Curriculum vitae vertex helps the student to develop their Curriculum Vitae to a professional level that is acceptable by the professions to which they wish to embark upon.

The art of writing job applications statements focuses on presenting the individual candidate profile by detailing examples of how past experience, skills, knowledge and personal qualities respond to the exercise of the job specification students are applying for.

The behavioural interview is a competency based vertex that allows students to connect aspects of their personality to their knowledge and skills required by a job. This vertex helps the students develop their confidence in performing at job interviews.

The PDP develops the student ability to understand the needs for self-assessment and recording and planning for lifelong learning. This vertex elucidates the reality that students and professionals go through during their careers as they complete professional development reviews required by both future employers and professionals and statutory bodies.

Emotional intelligence is explored via the Observation Sessions, allowing students to listen to their feelings when making decisions that are not entirely based on logical reasoning.Such decisions affect the individual, the team and the development of the Business Task.

The art of critical thinking is present during the Observation Sessions and developed in writing as part of the students critical and personal development review. During the Observation Sessions students are encouraged to be inquisitive about team decisions, challenge them against their knowledge and values thus promoting inductive and deductive thinking with a view to develop creative solutions to Engineering and Technology problems. The final stage of the development of critical thinking is a self-reflection and commentary on their participation on all the set business tasks as well as on a participant of the televisionseries *The Apprentice*.

The Employability Skills Development, which consists of 5 vertices, is illustrated in Figure 4.

Figure 3 - Employability Skills Development Component Vertices

Teamwork is developed as students successfully integrate as part of a multidisciplinary and multicultural team working on a variety of projects to set deadlines and with real value.

Project management helps students plan, organise and manage resources to bring about the successful completion of the set tasks' goals and objectives. The presentation of project management to students uses classical lecturing methods by a specialist tutor.

The techniques studied in class are demonstrated for every set task as teams produce a project management portfolio which contributes to the debate of the Boardroom.

For every team a team leader is appointed either by the students in a democratic process or by the facilitator using criteria unknown to the students.The team leader vertex is designed to also induce team motivation.

The business task vertex presents the students with real problems that require the design of a solution and/or recommendations which involve a product or service, hence developing the students' ability to

solve problems creatively. Solutions are typically presented in the form of a product or a service. Business Tasks give the students the opportunity to demonstrate their creative skills.The last vertex of the CDE model is about communicating the problem solution to an audience of professionals. Students practice their presentation and influencing skills to win the task set.

The Role of the Tutor

The CDE is not just about passing on factual information or indoctrination, which students take to face value as their beliefs. The role of the tutor in CDE aims to promote open minds in students so that they can flourish and examine ideas from a variety of reasoned perspectives and are able to reflect critically. Thus the CDE tutor is a facilitator, facilitating students on 'how to think' not just 'what to think'.

Although tutors have an active role as observers they also guide individual students through the learning process. They advise teams on how to best develop a solution to the business task bearing in mind the students' thoughts and ideas. This guidance includes tutor feedback regarding the way in which teams manage their projects.

The tutor performs the role of a facilitator, helping to manage the process of information exchange and how the students' critical reasoning progresses leads to the formation of creative solutions to the business task. The style of the CDE facilitator is synoptically identified in Figure 5.

Figure 4 – CDE Facilitator characteristics of style

The Student Experience

Experience demonstrates that, typically, final year undergraduate students are more mature and will evidence values of passion and determination to succeed. CDE proposes a number of factors to enhance the student experience and motivation in a fun way. The first is reflected by the use of Reality TV in its academic practice model.

Secondly,the specific detail of a business task is only presented to the students on the day the task cycle starts. This creates suspense and maintains students'curiosity.Thirdly, team compositions change with every task allowing the students to get to know a higher number of their course peers. Finally,

there is a spirit of competition embedded in CDE as teams compete to win a task and are rewarded with a small prize.

The student experience in CDE features an increased exposure to independent study and communication skills promoting the students lifelong learning and confidence abilities. Figure 6 and Figure 7 illustrates two threads of experience developed by CDE in diagram format.These are two student experience determining factors presented by the **(National Union of Students, 2008)**, "*When looking at the particular skills that students feel they have improved through their studies, independent study skills (80 per cent) and communication skills (74 per cent) score highest*".

Figure 5 -Stimulating Students Individual Confidence

Figure 6 - Promoting the Student Lifelong Learning

Methodology

The research implemented is surveys via an end of unit questionnaire. The population used in this study has the following characteristics:

- **Theoretical population**: composed of all students undertaking a B.Sc. (Hons) in Media Technology, Multimedia Technology, Computer and Network Technology, Information Technology and Special Effects Technology.
- **The study population**: All students registered in the unit Management of Technology whether part of their core or optional study diet.
- **The sample (not including drop outs or non-respondents)**: consists of a universe of 64 participants that meet all of the above conditions.
- **Scale of Measurement**: Based on a Likert's scale for every item on the questionnaire with the 5-point scale.

The questionnaire developed covers traditional teaching and learning themes, for example, the quality of the teaching and learning materials, assessment and introduces question themes that are specific to the innovation presented by CDE and its development. These themes are reflected in the questions relating, for example, with the boardroom, the pitch and the business tasks. A student self-reflection section is also integrated with the questionnaire to capture more detailed opinions on good and bad points about the unit as well as opportunities for improvement and any other comments.

A focus group is organised to collect qualitative responses. Out of the theoretical population mentioned above, 15 students (23%) were selected for the focus group. This group of students is composed of any individual irrespective of sex and age and ethnicity. The focus group were conducted

over a working lunch with two participant groups of seven and eight individuals each. With the focus group interviews the researcher intends to capture aspects of the human behaviour that are associated with motivation in the context of the CDE scheme which will not be so transparent from the survey questionnaires. This will enable the researcher to effectively test the external validity of the cause effect relationship. The external validity refers to the degree of truth of my conclusions that will allow me to generalise my sample to the theoretical population.

CDE Framework – Quantitative Analysis

The results of the unit survey questionnaire were obtained from a sample of 58 respondents.The sample captured the responses from 90% of the student population which therefore constitutes resilient support for the analysis that follows. The survey measured every item on the questionnaire with a Likert's scale.

- Teaching and Learning materials- 64% of the respondents considering themclear, comprehensive and professionally presented.
- The unit's programme of study enabled the students to learn more than initially perceived was an item that brought agreement to 71% of the respondents.
- The students' Career Development and Employability was recognised by 69% of the respondents to have been enhanced as a result of studying the unit.
- The Boardroom was considered as an innovative way to discuss and debate the success of a team's work by 71% of the respondents.
- The presence of external specialist guests during the Pitch and Observation sessions were a valuable addition to understanding the tasks and to be given guidance. This is the report of 71% of the respondents.
- 74% of the individuals surveyed considered that the Business Tasks defined an opportunity to be creative/original and stimulated interest in preparation for real project work.
- Teamwork is the survey item with the highest student satisfaction rate(83%) corresponding to 48 individuals agreeing to: "Working in multidisciplinary teams has made me more adaptable and cooperative in the way I work/lead with others."
- Also reported as a high measure of CDE success (81%) are the Pitch and Behavioural Interview activities. The Pitch developed the students' presentation skills and improved their competence to communicate work in a professional manner, while the Behavioural Interview increased awareness of the self and their experiences in preparation for a real job interview.

CDE Framework – Qualitative Analysis

The qualitative analysis is based on the responses obtained from the open ended questions to the survey questionnaire and focus group meetings. Here the themes identified by respondents and by the focus group participants are established and the satisfaction of the student experience under itsliteral meaning is discussed.

In undertaking such an analysis, the Concordance software by **(Watt, 2011)**, which produced a thematic schema of the data and identified all its loadings within the participant's statements, was used.

The theme with the mostsignificant occurrence was the Business Task. These were quoted as enjoyable and to promote the students' employability and to have contributed to an improvement in the students presentation skills allowing students to interact with others that they would have not necessarily done so. They were also quoted to improve personal confidence and to allow business skills to develop.

On the other hand students stated that the effort put into these did not match their assessment value. There are suggestions to increasing the complexity of a Business Task and reduce the number currently executed within the academic year. There is a heavy correlation of statements presented referring to the lack of understanding of the marking criteria used in a Business Task and calls for formal explanations of how it works and what is expected of the students.The theme of workload generated by the unit and the students time spent on is also identified. This was evident from the lack of initial project management from the teams at the start of the process. As students explored the new learning environment they realised the importance of correct assignment of business task requirements to individuals with the right skills. This measure reduces the workloads and best positions teams in the weekly competitiveness feedback charts.

Suggestions are made to the readjustment of the Pitch and Boardrooms sessions to run sequentially for a team and for tasks to be reorganised to fit with other deadlines. The Pitch and Boardroom panel of guests is called for to have a more integral role during Observation Sessions.This is parallel to the view that the facilitator should be more engaged in the task with the teams.

Both the Pitch and Boardroom are reported with equal loadings. The Boardroom is seen as a good way to teach but it should also identify non-participating team mates. Both Teaching activities are quoted to be a good environment to demonstrate knowledge.

Project Management was described with mixed views. To some it was good to have applied the principles learnt in class to others it was difficult to understand the relationship between this theme and the CDE framework. There is a call here to express the project management portfolio produced by teams for a Business Task to be summatively assessed.

Teamwork is highly regarded with indication of team leadership skills and working with people from different backgrounds being the highlight of the CDE framework.

Feedback quality was highly recognised in particular that given by the Behavioural Interview.The concept of teaching and learning based on ***The Apprentice***is described to work well, to be good, fresh and fun. There is however a suggestion to watch an episode in class.

Overall the framework is quoted as an excellent method of improving team leading skills and other fundamental skills with preparation for real world situations. This unit of study is described as "a must for all students".

CDE Teaching and Learning Approach

So far we have explained the components of the pedagogical system architecture and identified their functions and interdependencies. While among Higher Education Institutions (HEI) many of these components exist and are embedded in a variety of forms, the CDE brings all the components together under the headings of career development and employability. The implementation of each of the components and their vertices is subject to the specific needs of the target audience of students and the academic discipline. The CDE recognises however, problem solving, teamwork, behavioural interviews, critical thinking and the emotional quotient as the core aspect of its implementation as indicated by contemporary research highlighting the current needs of employers.

The emotional quotient is defined by the personality scales in use by the academic practitioner which is a reflection of the developmental stages of the students' needs in higher education. See **(**Goldberg & Springfield, 2010) for the scientific list of personality scales.

Academic practitioners wishing to use the technique must first reflect on the items of personality of their students they wish to develop and build a personality profile which they will then monitor via the definition of a problem they wish their students to resolve while working in a team. Upon problem resolution students must be set a reflection activity which subsequently includes a form of behavioural interview.

The mechanisms for assessment and feedback are simple and based on values attained by the student emotional quotient as described by **(**Goldberg & Springfield, 2010**)** providing the academic practitioner with a quick and efficient way to monitor and assess students work and a form of real time evaluation of the teaching experience.

Conclusion

Using the modelof embedding employability within a unit of study we have proposed and developed an innovative methodology for teaching, learning and assessment of career development and employability inspired by the BBC reality television show *The Apprentice* and demonstrated its pedagogical values by qualitative and quantitative processes. The model connects academic practice with the real world by capturing the motivation, enthusiasm and engagement of students' in the same way modern electronic gadgets and televisions programmes do. The model proposed explores career development and employability by developing the students IQ and EQ skills via a number of components such as projects and project management, leadership, critical thinking, emotional intelligence and behavioural interviews to name a few.

The proposed principles are a sound representation of an innovative assessment model that is rigorous and fair as it is based on scientifically proven constructs by the scientific community.

This project contributes to the unlocking of peoples' talent, through academic practice innovation, which is of significant importance to the nation's economic competitiveness and sustainable growth.

The innovative CDE academic practice model proposed challenges the logic strength of the student's arguments and generates knowledge and meaning from their experiences in a fun and competitive learning environment, supporting them in becoming World Class Professionals.

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THE MANAGEMENT OF THE NATIONAL DISTANCE LEARNING PRACTICES AT RAMKHAMHAENG UNIVERSITY IN THAILAND

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Abstract

The objective of this research was to examine the perceptions of Ramkhamhaeng University's graduate students towards the university's distance learning system. The system applies a combination of several media in the teaching-learning process, for example, electronic and traditional media, hardcopy materials, DVDs, etc. The researchers performed focus group interviews with students in regional campuses who have used the long-distance learning system. Majority of the students reported that the usage of several learning tools was more effective than using the eLearning system as the only source of learning. They perceived that blended learning has the capability to promote and enhance interactivity among students and teachers, flexibility in learning as well as social equalization. Furthermore, the blended learning system helped motivate students better than any single system alone.

Key word: distance learning, online learning, blended learning

Introduction

Long distance learning has been conducted for many decades in Thailand. Traditionally, hard copies of learning materials were mailed to students and lectures were offered through mass media. Nowadays, the advancement of the Information Technology (IT) brings about many changes in the choice of channels to reach students. Teaching materials, once delivered through traditional posts, are now channeled via the internet system. The long distance teaching and learning process has been transformed accordingly.

It was reported that distance learning is well accepted. About 80% of business schools in America are offering distance learning programs online (Iniguez, 2011). In addition, The Internet World Stats (2015a)reported that the internet has been adopted by nearly half the population of the world; as of 30 June 2015,there were 3,270,490,584 internet users around the

world. Although the penetration rate seems low in Asia, real numbers show that more than half of the global internet user population was in Asia (1,563.2m users). In 2015, there were about 5 times more internet users in Asia than North America (313.8m). Thailand had 23,716,968 internet users (34.9% of the population). Out of these, 17,721,480 were Facebook members (Internet World Stats, 2015b). This implies the internet literacy of Thai people which enables an access to education system, which was once out of reach for many people. This helped Thailand's development towards the knowledge-based economy (Tierney& Findlay, 2009).

Online distance learning

Distance learning offers a lot of advantages (Fleck, 2007). It provides convenience over time and space, feedback systems, tempos of learning, interaction, etc. (Singh & Pan, 2004). Various forms of teaching materials used in the distance learning system provide an opportunity for students and exposure to learning in different manners. Some materials might be learned more effectively by some students than others. Students are more independent and confident in choosing the manner that suits them most (Eke, 2011).

The information technology has tremendous strategic effects on society (Lee, 2015). Students in the new generation are capable of using the internet (Prensky, 2013). Hence, teaching students through the internet has become a popular device for many schools and universities (Tapscott, 1998;Oliver, 1998; Oliver, 2000). It is considered a movement towards sustainable development for education institutions (Kim & Bonk, 2009). IT is a useful tool that facilitates education processes, such as teaching, enrollment, registrations, etc. (Wiles, 2010).

Researchers reported that online learning is more effective than classroom learning (Qualman, 2015). Furthermore, Means et. al., 2010 found that the effectiveness differed minimally, however, the blended approach was more efficient than using either face-to-face or online system separately.

Regarding students' satisfaction towards e-learning, previous literature reported controversial results. Some researchers found positive relationship between e-learning and students' satisfaction (Bloom & Hough, 2003; Choi, 2003; Magg, 2004) but some (Buckley, 2003; Kearns, Shoaf, & Summey, 2004) found negative relationships. One single form of teaching media is very likely to be ineffective.

Blended online teaching-learning process

Success in the online teaching and learning process depends largely on teachers, teaching process and students. Teachers have an important role in promoting the quality of the teaching-learning process (Zeithaml, Bitner & Gremler, 2006). They have direct effects on the experience of students in the classroom and, hence, enhance the success or failure of students' learning (Peltier, Hay & Drago, 2005; Ulrich, 2005). The interaction between teacher and students promotes a class environment that facilitates student involvement with the class (Paswan & Young, 2002). Many teachers report they prefer face-to-face rather than online classes (Seaman, 2009). Since teachers' attitude affects the method of teaching they prefer (Mira, 2008), those who have not-so-good attitude towards IT technology tend to avoid using IT technology in their classes (Harris,

1997) despite its benefits. Dawes (1999) reported that a large number of teachers resisted IT. The reasons were from the negative attitudes towards IT, defensiveness from intervention, changes needed in organizations, management of time, lack of management support, and other psychological reasons (Robertson et al., 1996).

Regarding the teaching process, Murray (2003) argues that the online teaching system involves more than putting teaching materials on the web and teaching through a web page. Other activities, supporting system and channels should be devised appropriately. Students have various styles of studying, goals, approach, as well as potential (Mayes, 2004). Hence, Thomas (2000) suggested that the learning system should take students' preferences into consideration. Students have different preferences regarding teaching-learning methods (Felder & Brent, 2005).

On the student's part, Bertea (2009) proposed that an important premise for online learning is that students motivate themselves to study. They should have endurance and organize their time and communication appropriately. Students' attitude regarding the online learning system, learning preferences, time management, skill designs of instruction approach and materials could enhance the system (Kareal & Klema, 2006). A blended learning system enhances the teacher-student interaction, accessibility to class materials, choices for students, pedagogical richness, ease in revisiting the class, and above all, is economical (Graham, 2005).

Online education in Thailand

In an attempt to promote a community of practice towards the approaching knowledge-based economy, the Thai government is promoting the Knowledge Management (KM) system among organizations, both public and private. The government has been promoting the utilization of Information technology among schools and universities. A large number of people (in 2014, out of the total of 67.7m) were IT users as shown in Table 1 below.

Table 1. Number of IT users in Thailand classified by age group

Age group	Computer users	Internet users	Mobile phone users
6-10	3,077,205	1,531,612	526,151
11-14	3,377,843	2,894,826	1,906,675
15 - 19	3,817,215	3,853,478	4,335,071
20 - 24	2,646,415	2,857,694	4,604,830
25 - 29	2,340,534	2,486,751	4,460,217
30 - 34	2,209,167	2,271,810	4,695,013
35 - 39	1,940,488	1,909,587	4,948,359
40 - 49	2,545,838	2,336,079	9,813,507
50 - 59	1,411,340	1,266,751	7,520,092
> 60	405,296	320,795	5,255,727
Total	23,771,341	21,729,382	48,065,641

Source: the National Statistics Office of Thailand (NSO) (2014), The information and communication technology survey in household. http://web.nso.go.th/en/stat_theme_ict.htm

The new education reform attempts to promote equal educational opportunities for Thai citizens (Thai Cyber University, 2004). Formerly, there were only a few educational institutions in Thailand and most of them were located in urban areas. Residents in remote areas faced a lot of obstructions both educational-wise and money-wise to participate in the education system, especially at higher education levels. The IT system helps people to gain access to education at cheaper expenses, hence, many schools and universities are using the IT as an important device to promote equal educational opportunity.

Ramkhamhaeng University's blended distance teaching

Formerly, Thailand's higher education (HE) system had very limited capability to serve the society. There were limited numbers of universities and faculty, most of them located in Bangkok. The competition to enter a university was very high. Many students could not enter HE institutions. Many of them in the provinces faced the difficulty in traveling and accommodation expenses to come to study in Bangkok. In 1971, the government established Ramkhamhaeng University (RU) in the form of an open university, in order to offer a chance for students to participate in higher education system. RU accepted all kinds of students. In order to offer an opportunity to all high school graduates, an entrance examination was not required and the tuition fee was very low. Hence, students who lacked an opportunity to attend high quality education or who were financially disadvantaged could enter the higher education system. The result was that thousands of high school graduates who could not pass the entrance exams of other universities applied to RU. The consequence was that RU's infrastructure was unable to handle such large numbers of students. The situation forced RU to pioneer Thailand's first long distance learning program. Normal classes were offered for students who prefer to come to the campus. The lectures were broadcasted via Thailand's extensive radio and TV networks. Hence, students did not have to come to the limited-facility campus. For the first time in Thailand's history, students in the rural area gained access to the same education as students in urban areas. In 1996, RU utilized a two-way communication system, video conference, through satellite network (Ramkhamhaeng University, 2007).Later on, the internet system took RU's teaching and learning approach to another level and could reach people all other the world.

As of 2015, RU had twenty three campuses, forty examination centers, and forty seven academic service centers in various regions in Thailand to provide accessibility to education for students throughout the country. Moreover, forty one centers were established in foreign countries. Currently, RU offers 194 programs of study in twelve faculties, two institutions, and one graduate school. The Institute of International Studies provides classroom-based international programs at the main campus to students from more than 50 countries around the world. In addition, the previous president managed to have two IT coaches installed with PCs and satellite dishes in order to travel to offer education and internet services to 60,000 people in remote areas (Ramkhamhaeng University, 2012).

The distance learning at RU offers both electronic system and face-to-face approaches. The regional campuses provide the same study programs as at the main campus. Various teaching and learning devices are utilized, for example, printed materials, DVD's, web board, webpage, etc. The graduate classes required students to register and attend classes at a regional campus close to their residences.

Four to five campuses are grouped as a node on the entire network is shown in figure 1. Some pictures of an instructor visiting regional campuses are exhibited in Figure 2. Some big campuses are stand-alone as its own node. Subjects are taught at each node, covering four to five campuses, at a time. Students in the same node would sit in classes in their chosen campus at the same time. The instructor, normally from the main campus, would travel to one of the campuses in the node in order to deliver face-to-face classes for student in that campus. The lecture is broadcasted through the video conference system to other campuses in the same node simultaneously. A coordinator would sit in each of the class to supervise students in the other campuses. Hence, students are learning from the same lecturer in all campuses in the same node at the same time. All students can have interaction with the instructors either via face-to-face or on video conference basis. In the following week, the instructor would visit another campus in the same node to perform the same procedure, and so on and so forth. Students in all campuses would have at least a chance for face-to-face interaction with the instructor for each subject. Furthermore, the classes are video-taped and posted on the RU website and DVD's for future revision by students should they want to revise any of the class materials (Ramkhamhaeng University, 2013).

Methodology

The purpose of this research was to elicit an understanding from RU graduate students' perspectives and insights. Hence, a qualitative research approach was deemed appropriate. Preferences and opinions of students about the current RU's distance learning approach were gathered. In order to provide discussion and brainstorming of ideas among the informants, focus group methodology was conducted. The researcher organized focus group interview sessions in the meeting rooms at each of the four campuses in the same node. One node was randomly selected from Ramkhamhaeng's five nodes. Students enrolling in the graduate programs at RU regional campuses during 2015 were asked to participate in the group interview voluntarily. Seven students were recruited in Phrae province, eight were recruited in Lopburi, ten in Trang province and ten in Nakhon Phanom. Altogether 35 students were interviewed in the focus groups. The researcher asked the students to reflect on their opinions and perceptions regarding the distance learning they are using, i.e., teaching and learning process, problems and obstructions, their learning style preferences, advantages and disadvantages of Ramkhamhaeng University distance learning method, in order to gather information. Students were ensured that this research was for education purpose only and the results were for the improvement of the system to make them more comfortable with the system. Full confidentiality was assured. Their credentials would be kept secret. Students were asked to discuss freely. The interviews took about 60-120 minutes. Discussions were video-taped and transcribed verbatim (Gaskell, 2000; Tanchaisak, 2015).

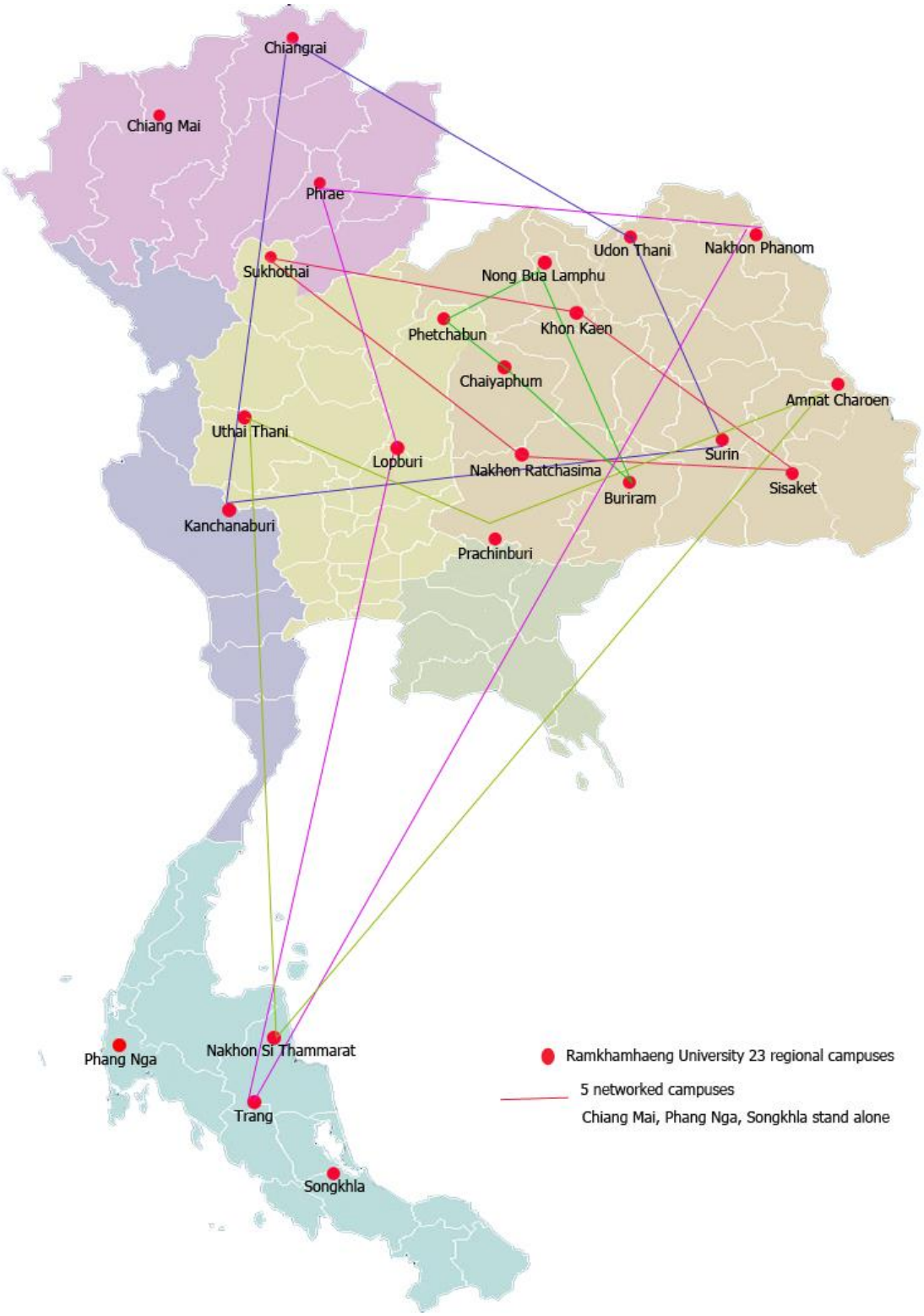

Figure 1 - RU regional campuses and nodes in Thailand

Figure 2 Classes and facility at the regional campuses

Results

Data gathered from the focus groups were summarized for common themes. The researchers read all transcribed data in order to come up with the themes the informants reported. The researchers studied the data separately. Each of the researchers grouped statements with similar meanings together. The groups were compared and differences were discussed and agreed upon to eventually finalize the themes. Six themes emerged from the data. Students' reported similar opinions towards the online learning system.Most students agreed on the same direction towards RU's distance learning system. Six themes were identified and summarized as follows:

The Accessibility to further study

Most students reflected that the blended learning system provided opportunity for them to further their study. Without distance learning, further studies could hardly be achievable. Students had many commitments in their schedule, both work and family. Several students mentioned "It is too troublesome for me to take normal classes at other universities," "studying in a normal system needs too much commitment which I cannot cope with," and "I have the opportunity to learn during my work day through the internet system." All students were working in the provinces during weekdays. It was nearly impossible for them to take weekday classes at the main campus in Bangkok. Weekend classes in Bangkok were equally undesirable. One student reported "I once took classes in Bangkok but after travelling from my province to Bangkok for a few months, I was exhausted and couldn't study at all" and "travelling too much affected my job." Apart from the need to take some rest from work, students were grown-ups and had family to take care of. Travelling to Bangkok for weekend classes incurred some expenses. Moreover, they had to travel to Bangkok either after work on Friday or Saturday morning to take classes on

Saturday and Sunday then rush back to work on Monday. Students reported that such a schedule was too hectic and they could not study effectively. Some students mentioned they would have to resign from their jobs if they had to take graduate classes in Bangkok. RU's distance learning made further study more accessible for them. They did not prefer a pure long distance, i.e. studying at home. They also expressed a desire for classroom-based learning. The organization of classes within their proximity was highly preferred.

The convenience for interaction with colleagues and teachers

Many students mentioned that classroom-based learning provided them with the opportunity to have face-to-face interactions with colleagues and teachers. They suggested they like to see each other in actual person in order to make acquaintance first. One student said "it is a bit awkward to start conversation with someone I have never met before." Thai students prefer to have conversations with each other on face-to-face basis to make acquaintance first because Thai culture is a high-context culture. Thais need to infer knowledge from another person's appearance and non-verbal communication (Komolsevin et al., 2012). They reported electronic media lacked some facet which would allow them to make acquaintances with each other, in the early stage of the relationship. Once they had the chance to chat face-to-face with others, they would feel more relaxed in conversing online later. The electronic media served as a supporting system in which they did not have to wait until the time they could actually meet the teachers to have a discussion. They adopted the electronic media for its convenience and preferred to use it as a secondary communication system. One student mentioned "it is very good that I can discuss with teachers and colleagues at my leisure at home and do not have to wait for class time, by then I might forget what I wanted to ask." They could email or contact teachers through Facebook, Line, or other mobile applications, for minor conversations and wait for the face-to-face conversation for clearing up more complicated or complex topics. In person meeting was important for them. It created the feelings that teachers and colleagues were "real humans". The online support systems made them felt they could ask for support at any time from colleagues and teachers. It made them more confident in learning. The online, especially, mobile technology enabled them to learn as a team more effectively.

The flexibility of blended learning system

Apart from the flexibility regarding the location of the classes, students reported that the learning process was more flexible. Although, it was mandatory to come to class all the time, some students had important matters to attend to once in a while. Sometimes, they just could not concentrate well in class in order to understand all materials during the class for some reasons. The availability of class materials online enabled them to have review sessions at their convenience. One student reported "sometimes I had to go out of class to answer my boss's phone, so I could not catch up with the class but it is good I can review later at home and better still that I can review part by part." Group work could be performed through online applications. The learning process opened up choices for them. This reduced their stress towards learning. Adult learners needed flexibility in the learning schedule and also in choosing the materials suitable for them. Moreover, the online system enabled the teachers to tailor some materials to match individual learners in different regions more effectively than the traditional method. For example, students in the south might be assigned to find information regarding the fishery businesses while students in the north might be assigned to do a report on northern food recipes.

Up-to-date materials

Many students reported that distance learning with the presence of the teachers enabled teachers and students to discuss and modify the class contents to suit the students' needs. Moreover, additional materials or real life examples could be tailored to fit the students' needs. Contents on the internet could be linked or shown to the class easily. Up-to-date and relevant information could be incorporated into the class. The process stimulated and convinced students to try the internet and IT system. Several students reported they found it much simpler than they thought. They had a chance to try searching for information on the internet. Some reported that "the materials on the web are updated most of the time, we have the opportunities to learn new knowledge and information as compared to studying from the textbook alone." Some could go further in storing the information on cloud storage and other IT systems. RU's learning system enabled them to learn to gather, store, share, and apply their knowledge. This helped them to enter the life-long learning process even after they graduated.

The enhancement of realistic and interesting materials

The information technology made it possible to include various methods for the presentation of content. IT is a rich channel, meaning it could transfer message both in breath and in depth. Colorful and fancy pictures could be inserted into the teaching media as well as internet linkages to other websites, video presentation, simulations, online discussion, etc. The inclusion of these materials stimulated students to follow the class better than using slide presentations or lectures alone. Class materials were more realistic and relevant. Students could see the application of the class contents more clearly. Moreover, student learning support materials could be offered more effectively than before. This was one step beyond the reliance of textbook as the single source of learning. Materials were digested and presented to students in an interesting manner. Students reported that "the usage of IT allows us to switch from one website to another" and "searching for information is much easier now compared to my undergraduate days."

Positive psychological effects on learning and knowledge sharing

RU distance learning provided students with an opportunity for online and other options for discussion about class materials. Some students reported they felt a bit awkward when talking aloud in class to ask questions or express their opinions. They felt that typing on the computer helped to reduce the awkwardness of being put on the spot in class. Students felt more relaxed to express and share opinions with colleagues. Students reported "when a teacher shares something on the discussion board, all of us read the same thing and I feel more comfortable discussing it online." The online discussion made them feel more confident than posing opinions in front of the others in case others did not agree with their opinions because they were uncomfortable with face-to-face confrontation especially in class. Everybody, especially modest students, had opportunity to share opinions and knowledge without having to compete with others in class in order to draw attention. Furthermore, the blended learning system enabled the connectivity with students in other provinces and other batches. In short, they felt that the blended learning helped reduce the psychological obstruction in their learning.

Discussion and recommendations

Thailand's culture is a collectivistic and high context culture (Komolsevin et al., 2012). People prefer to work in groups rather than working alone. Thai students are more familiarized with learning in a traditional classroom in which they can interact with teachers and each other on a face-to-face basis. The concept of distance learning implies self-discipline and studying in solitude, hence, many people have negative attitude towards studying away from classroom. Moreover, Thai culture is categorized as a high context cultural group (Hall & Hall, 1990; Hofstede, Hofstede & Minkov, 2010). Contrary to the American students, Thai people interpret the meanings in communication from the context more than from the words exchanged in conversations. The interaction through the internet makes it difficult to monitor the context of the other party and hence may result in difficulty in interpreting the meaning in communication. Thai students prefer to meet teachers and friends in real person in order to learn about each other before further interaction through other less rich media. Hence, face-to-face interaction is needed even with the distance learning system.

It is very important in the distance learning context to stimulate students to engage in the online class activities which is an important attribute of graduate study. One of the issues about distance learning in Thailand is that many students, especially older ones, which is the case with graduate students, are not familiar with IT and can use them only at the very basic level. There should be some measures in order to stimulate graduate students to use the technology else the learning process would not be successful.

On the teacher's part, teachers' roles should be changed from using pure lecture style to becoming a facilitator in class. They should keep up with changes in the IT and respond to unconventional problems. Moreover, teachers should try to motivate students. Teachers do not have the absolute authority in class anymore. They cannot assume that students would comply with their authority as before. Modern, especially adult learners have their own agenda and power, especially among the graduate students. They come to study with the belief that teachers could provide them with answers to the wide range of problems they face in their work which is different from undergraduate students who do not have job experience. Teachers should possess wider range of knowledge and the application of knowledge in students' life and work. Class materials should be prepared so that students can see the relevancy between what they learn in class and their life and can utilize this knowledge more effectively.

A special requirement for teachers is the literacy and positive attitude towards IT. Negative attitude towards IT induces teachers to avoid the utilization of IT and that would in turn have negative consequences to the students. Teachers are the ones who lead students into the world of IT and they should have knowledge in different types of applications. For example, teachers could teach students to do group reports through "Google docs". Teachers should be able to provide guidance and support students in the utilization of IT.

It is very important that teachers should assess the preferences of graduate students in order to tailor various tools to fit their capability. Some students are more IT-literate than others or even the teachers. Teachers might have to organize a couple of sessions to teach students about the IT utilization or let students who have knowledge in IT to lead the class. Students might be familiar

with some IT channels more than other channels. Teachers should motivate them to try other channels as well to increase their IT literacy. The teaching contents might have to be modified to fit the method of delivery, either by IT or non-IT channels, or a combination of both.

Most students prefer a blended learning approach rather than either face-to-face or online alone. Both approaches have advantages and disadvantages. Teachers must carefully study the benefits and drawbacks of these approaches in order to deliver knowledge through appropriate channels. IT might be convenient but the richness is less than face-to-face. Hence, some materials should be taught on a face-to-face basis while some could be delivered online. However, the organization and structure of the course content should be well planned and the linkages among the content should be explained to students clearly to make it easy to follow the materials via different channels.

Conclusion

The development of internet infrastructure in Thailand makes it easier than before to organize teaching and learning through the internet. Many institutions are utilizing the internet to accompany the traditional learning approach. Thai students still need face-to-face interactions. All students interviewed mentioned they did not want to study only through a pure online approach. It is better to have a blended approach that combines various methods of knowledge delivery. Teachers should study the pros and cons of traditional and IT approach in order to choose the right channel for different content of the course. The organization of various methods need careful planning in order to utilize the potential of each approach effectively. Moreover, knowledge delivery approaches should be continuously assessed and modified. Teachers must be active in keeping up with the development of new technology and utilize them in the teaching process. In short, the blended approach which combines several tools for teaching is preferable than any one approach alone.

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SOCIAL PERCEPTIONS OF MATHEMATICS AMONG JORDANIAN HIGHER EDUCATION STUDENTS

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Abstract

This study aims to identify the students' perceptions of mathematics and to find out the existence of differences in the students' perceptions of mathematics by gender, residence and their interactions. The study sample consisted of 150 male and female first year students at Jordan universities. Social perceptions of mathematics questionnaire consisting of 36 items was developed. The results showed that the students' perceptions of mathematics on the questionnaire was positive and high, and there were no statistically significant differences in students' social perceptions toward mathematics by gender, residence and their interaction. Finally, the researcher recommended that teachers must give more importance to the emotional side of mathematics, creating remedial programs for students who have negative or low perceptions of mathematics.

Keywords – social perception, Gender, higher education

Introduction

The recent impacts of technology in almost all aspects of life have increased the necessity of mathematics. Mathematics occupies a privileged position between science and various fields of knowledge, and is a good field to train students and to develop thinking skills. Therefore, mathematics accompanies the students throughout their lives and is regarded as the mother of all sciences, more so in this technological age. Alkhateeband Ababneh (2011) stated that mathematics is a vital tool in helping individuals identify and solve problems. The same importance was emphasized by NCERT (2006) as mathematics as an essential topic in education

and the provision of quality of mathematics in education is a necessary requirement for every child.

Students' association with mathematics has not achieved the desired level. There is doubt as to the interest in mathematics, and it is assumed that social perception from the cognitive domain in the learning processes for students, where the nature of mathematics, the learning of mathematics and problem solving determines the strategy and methods of dealing with the problems (Zuhair, 2008). The perceptions and beliefs about mathematics are created from previous experiences, including both cognitive and affective dimensions (Aguilar et al., 2012). The social perception is a process of understanding others, where the available information is interpreted for others to accurately understand their behavior and to make judgments. It consists of observing and understanding existing information and drawing conclusions, as well as helping individuals to simplify and solve problems and contradictions, and to help them to accept the situations (Jussim, 2012).

The social perception and its nature have an impact on learning a topic. Consequently, pupils must form perceptions of mathematics, and what mathematics means to them. The formation of perceptions about themselves as learner of mathematics will lead to a more effective role in influencing the formation of the curriculum, and the progress of the education. The impact of the social perceptions of individuals plays an important role in their lives, because it directs the behavior to the description of the phenomenon through the social framework, psychologically and biologically (Zahran, 1997). Social perceptions represent systems of thinking about certain subjects which differ from opinions and attitudes, so the individual remains connected with the community. Social perception may have an impact on mathematical thinking because it directs the learner's response in learning mathematics.

The reason for the study of social perception is the interpretation and prediction of behaviour and then modifying it to fit the interests of the individuals. This also applies to the measure of social perception of mathematics in that it is essential to be aware of its presence its degree of strength. In addition, the social perception about the nature of mathematics, learning of mathematics and problem solving determines the strategy and methods to deal with the problems. This will lead to an effective role in influencing the curriculum and the progress of the educational process because it consists of observing and understanding existing information and drawing conclusions. It also helps individuals to simplify, solve problems and contradictions, and to accept the environment (Amer, 2011). This paper aims to study the effect of social perception on mathematics among first year students in Jordan. Perceptions occupy a substantial area within psychological and social research as most of topics have psychological and educational content, but are being studied by attitudes and opinions. The topic of social perceptions is comprehensive and wide because it is known among most researches especially in social psychology. Thus, the social perceptions are an important tool in the collection of information.

Literature Review

The study by Jumadi and Kanafiah (2013) investigated gender differences in students' performance on Calculus I and discovered students' perceptions of mathematics lecturers. The findings showed that the performance of female students was better than male students. It

therefore indicated a significant influence of gender and students' perception of mathematics lecturers. Anapa and Samkar (2010) conducted a study aimed to identify and compare students' perceptions toward mathematical proof and to compare the perceptions of students by gender, academic achievement and success. The results showed that most of the students who believe they are successful in mathematics do not trust their ability to proof, which shows that the students memorize the proofs and evidence. The study also revealed that successful students have a negative view of proofing. The students who believe they are successful in mathematics have positive views about proofing. The study by Kerwani (2012) aimed to examine the perceptions of mathematics students at Palestinian Universities in mathematical proof. The result showed that the students' responses on the scale were positive. In addition, there were statistically significant differences in the students' perceptions attributed to the university in favor of the Alquds Open University, whereas variables of gender, academic level and cumulative GPA was neutral.

The study by Kloosterman et al. (2008) investigated students' perceptions about mathematics and gender. The results showed that there was no significant gender difference in math, although females were stronger than males in this perception. Perceptions of high school students indicate that there are differences in males and females toward mathematics. Pre-service teachers' perceptions indicated that there was no significant gender difference. In general, across the entire scale, there were no differences in mathematics ability by gender. The study by Ampadu (2012) aimed to uncover students' perceptions of teaching methods, and the effect these methods have on their learning. The finding showed that participants perceive the teacher as the guardian of knowledge, and the teacher controls the learning methods. There were also positive and negative learning experiences, and emphasis on the important role of teachers'. Anapa and Samkar (2010) conducted a study to identify and compare students' perceptions toward mathematical proof. The study also aimed to compare the perceptions of students to their mathematical proof by gender, academic achievement and success. The results showed that most of the students who believe they are successful in mathematics do not trust their ability to proof, but have a positive view about proofing. This shows that the students memorize the proofs and evidence. The study also revealed that successful students have a negative view of proofing. Positive results on evidence and proof were not shown for all students, whether the students were successful in mathematics or believed they were successful in mathematics. This is because it is unreasonable to have a negative view of successful students in mathematics towards proof, and a positive view for the students who only believe they are successful in mathematics. The study by Abed and Saeedi (2002) identified high school students' beliefs about math and science, and the degree to which these beliefs are affected by their grade, stream of the study, gender, and achievement. To gather the data, the developed Arabic version of the 30 item Mathematics and Science Beliefs Instrument was used at the interior-district of the Sultanate of Oman. The results of the study showed that statistically significant differences were found in the mean scores of students' beliefs about math and science. There were also statistically significant differences between the means of the students' beliefs about math and science which can be attributed to the levels of their achievement. The study by Rayyan (2010) investigated student-teachers' beliefs at Al-Quds Open University towards learning and teaching mathematics. It also investigated the significance of the differences by gender, specialization, year-level and the interaction between them. The results revealed that student-teachers' beliefs towards learning and teaching mathematics are generally compatible with modern trends. It also showed that there was a statistically significant

difference in their beliefs due to specialization benefitting the math students. Results also showed that there are no statistically significant differences that can be attributed to gender and year-level variables and to the interaction between these study variables.

Methodology

This study used a quantitative descriptive survey approach. The population in this study consisted of first-year students in Jordanian universities. Yarmouk University has been randomly selected from Jordan universities. The sample of the study consisted of 150 first-year undergraduate students. Social perception of mathematics questionnaire was developed in order to achieve the objectives of the study and answer the research questions. The questionnaire is used to measure students' perceptions toward mathematics that consisted of six dimensions of data collection namely: difficulty of mathematics, usefulness of mathematics, enjoyment of mathematics, anxiety of mathematics, the nature of mathematics and teacher role. The validity and reliability of the questionnaire was verified. The questionnaire items were examined by 7 experts from Jordanian Universities. Based on their opinions, the researcher modified and reformulated some questionnaire items.To insure the validity and reliability the questionnaire was piloted with some 30 students, and the responses and feedback obtained were used in modifying the final instrument(see Table2 in appendix). The data were analyzed using Statistical Package for Social Sciences (SPSS version 20).

Findings

The study findings were obtained to answer the the research questions which are:

1- What are the students' perceptions of mathematics?
2- Is there any difference in the students' perceptionsof mathematics by gender and residence?

The results were interpreted using the percentages of the responses adopted from Ali (2008), Khlifa and Shiblak (2012) and Kerawani (2012) as shown in table 1.

Table 1 The percentages of social perception of mathematics scale

Mean	Response degree
Less than 50%	Very low
50% -59%	Low
60% -69%	Medium
70% -79%	High
80% and above	Very high

To answer the first question, the questionnaire's dimensions about the students' perceptions were analyzed. Table2 showed the means and percentages for students' perceptions in the difficulty of mathematics.

Table2 The means and percentages for students' perceptions in difficulty of mathematics

Item	Mean	Percentage	Response degree
B1	2.6	52%	Low
B7	3.8	76%	High
B13	3.1	62%	Medium
B19	3.1	62%	Medium
B25	2.6	52%	Low
B31	2.8	56%	Low
All dimension	3	60%	Medium

Table 2 showed that the level of students' responses to the difficulty of mathematics sub-scale value was 60%. This results indicates that the level of students' responses to the difficulty of mathematics sub-scalewas medium. The level of students' responses to itemsB1, B25 and B31 was low with values ofpercentage responses ranged from 50% to 59%. Item B7 was high with percentage responses of 76%. The level of students' responses to itemsB13 and B19 was medium with values of the percentage responses ranged from 60% to 69%.

Table3The means and percentages for students' perceptions in nature of mathematics

Item	Mean	Percentage	Response degree
B2	4	80%	Very high
B8	4.2	84%	Very high
B14	4.6	92%	Very high
B20	3.9	78%	High
B26	3.8	76%	High
B32	3.3	66%	Medium
All dimension	3.9	78%	High

Table3 showed that levels of students' responses to the nature of mathematics sub-scale was high with values of 78%. The level of students' responses to itemsB2, B8 and B14 was very high with value of above 80%. However,the level of students' responses to items B20 and B26 was high with values ranged from 60% to 69%. Item number B32 was medium with a value of 66%.

Table4 The means and percentages for students' perceptions in usefulness of mathematics

Item	Mean	Percentage	Response degree
B3	3.9	78%	High
B9	3	60%	Medium
B15	3.5	70%	High
B21	3.6	72%	High
B27	3.6	72%	High
B33	3.7	74%	High
All dimension	3.5	70%	High

Table4 showed that the level of students' responses to the usefulness of the mathematics sub - scale was high with value of 70%. The level of students' responses to items B3, B15, B21, B27, and B33 was high with values ranged from 70% to 79%. The level of students' responses toitemtoitemB9 was medium with 60%.

Table5 The means and percentages for students' perceptions in anxiety of mathematics

Item	Mean	Percentage	Response degree
B4	2.5	50%	Low
B10	3.2	64%	Medium
B16	3.2	64%	Medium
B22	3.5	70%	High
B28	2.8	56%	Low
B34	3.5	70%	High
All dimension	3.1	62%	Medium

Table 5 showed that the level of students' responses to the anxiety of mathematics sub-scale was medium with value of 62%. The level of students' responses to items B22 and B34 was high with values ranged from 70% to 79%. The level of students' responses to the anxiety of mathematics of items B10 and B16 was medium values ranged from 60% to 69%. The level of students' responses to items B4 and B28 was lowand ranged from 50% to 59%.

Table6 The means and percentages for students' perceptions in enjoyment of mathematics

Item	Mean	Percentage	Response degree
B5	3.7	74%	High
B11	3.7	74%	High
B17	3.4	68%	Medium
B23	4.2	84%	Very High
B29	3.7	74%	High
B35	3.1	62%	Medium
All dimension	3.6	72%	High

Table 6 showed that the level of students' responses to the enjoyment of mathematics sub-scale was high with value of 74%. The level of students' responses to item B23 was high with value of 84%. The level of students' responses to the enjoyment of mathematics of items B5, B11 and B29 was higher with values ranged from 70% to 79%.The level of students' responses to items B17 and B35 were medium with values ranging from 60% to 69%.

Table7 The means and percentages for students' perceptions in teacher role

Item	Mean	Percentage	Response degree
B6	4.3	86%	Very High
B12	3.8	76%	High
B18	4.2	84%	Very High

Item	Mean	Percentage	Response degree
B24	3.4	68%	Medium
B30	3.5	70%	High
B36	3.9	78%	High
All dimension	3.8	76%	High

Table 7 shows that he level of students' responses to the teacher role of mathematics sub-scale was high with a value 76%. The level of students' responses to items B6 and B18 were very high with value above 80%. However, items (B12, B30 and B36) were higher, where the percentage responses ranged from 70% to 79%, and the level of students' responses to item B24 was low, where the percentage response was 68%.

Table8 The means and percentages for dimensions and the total degrees for responses

NO.	The dimension	Mean	Percentage	Response degree
1	Difficulty of math	3	60%	Medium
2	Nature of math	3.9	78%	High
3	Usefulness of math	3.5	70%	High
4	Anxiety of math	3.1	62%	Medium
5	Enjoyment of math	3.6	72%	High
6	Teacher, Role	3.8	76%	High
	Total degree	3.5	70%	High

Table 8 shows that the level of students' responses was high on dimensions 2, 3, 5 and 6 with values ranging from 70% to 79%. The level of students' responses to dimensions 1 and 4 was medium with values ranging from 60% to 69%.

Tables 2 to7 showed that there were inconsistent results of students' responses on some items. This is suspected to be due to a lack of concentration and seriousness in responding to the questionnaire.

The results regarding the second question "Are there differences in the students' perceptions of mathematics by gender and residence" were obtained using the mean as descriptive analysis and two way analysis of variance as inferential analysis. Table 9 showed the means of perception of mathematics variable depending on gender and residence.

Table9 Means of perception of mathematics variable depending on the gender and residence

Resident / Gender	Urban	Rural	Mean
Male	3.8	3.4	3.6
Female	3.1	3.6	3.35
Mean	3.45	3.5	3.47

Table 9 showed that the mean response of males in urban areas was 3.8 which was higher than the rate for females. The mean response of females in rural areas was 3.6 which was higher than the response rate for males. In general the mean response of males was 3.6 which was higher than the rate for females. Further, the mean response of students in rural areas was 3.8 which was higher than the urban rate.

Table 10 below shows the results of two way analysis of variance in perceptions of mathematics by gender and residence. It shows that there are no statistically significant differences in students' social perceptions toward mathematics by gender, residence and their interaction where the significance level was greater than 0.05.

Table10 The results of two way analysis of variance in perceptions of mathematics depending on gender and residence

The source of variance	Degrees of freedom	Sum of squares of deviation	The average deviation	F- value	Significance level
Gender	1	0.51	0.51	1.71	0.192
Resident	1	1.45	1.45	4.88	0.28
Gender×Resident	1	1.56	1.56	5.25	0.23
Error	384	113.85			
Total	388	4877.74			

Discussion

The results showed that students' perception toward mathematics was positive because the mean value for the students' response was greater than 60%.This was because students have equal motivation and perception towards mathematics (Al-Absi, 2008). Furthermore, all students were studying the same courses and this leads to the acquisition of equal expertise both in the field of education or academic setting. They also underwent similar stages of learning (Rayyan, 2010; Abed and Saeedi, 2002).

The level of social perception of mathematics scale in rural areas differed by gender. The level of social perception of mathematics scale in rural areas was lower for males than females. The mean value for the response of males to the entire social perception of mathematics scale in urban areas was higher than females as shown in Table 8. The students' perception toward mathematics is considered as high. The percentage of difficulty of math and anxiety towards math was medium because students may find difficulty and have anxiety toward math. That is because mathematics is a difficult subject internationally (Young, 2003; Mubarak, 2005). However, the percentage of nature of math, usefulness of math, enjoyment of math and teacher role was high because most of the students agreed to the importance of mathematics. Some topics of mathematics are enjoyable, and the teacher has a big role in the development of positive perceptions toward mathematics through constructing the trust and loyalty of students towards mathematics.

The results of second question indicated that there was no statistically significant differences in students' social perceptions toward mathematics depending on gender, residence and their

interaction. This result came as a result of the similarity of the circumstances in which both male and female students are exposed. Therefore, they might study the same curriculum, and have similar perceptions because they the same age. This means there are equal opportunities for everyone in order to gain knowledge. It is noted that many of the students agree on the importance of mathematics, and its positive role in the community, although they admit the weakness of their achievement. In addition, all students had studied the standard curriculum in mathematics. This led to all students having an equal opportunity to acquire knowledge. Knowledge was considered an essential component of the elements of social perceptions. Furthermore, equal factors helped to form social perceptions across genders because they lived in the same educational zone. In addition, both genders had the maturity factor which played an important role in the understanding and acceptance of any educational material. Furthermore, there was similarity in social, economic and cultural conditions between urban and rural dwellers, and they also had the same political conditions and events. All this led to the similarity in their social perceptions (Abed and Saeedi, 2002; Rayyan, 2010; Kerawani, 2012; Najem, 2007; AlAstal, 2004).

Recommendations

1. Teachers should focus on the teaching of all skills of mathematics, on both the theoretical and practical side of the basic concepts of mathematics.
2. Give the emotional side of mathematics more importance in teaching and development using different styles and activities.
3. Educators or those who are responsible for the educational process should take into account the negative perceptions of mathematics, and the development of positive perceptions, such as improving the environment of teaching, staying away from psychological pressures that cause anxiety, and lack of desire to learn.
4. Mathematics teachers must be able to interact with students, relieving them of tension and fear of learning mathematics, by making math desirable among students, generating motivation and desire to participate in the activities of mathematics. Finally, the teacher must treat his students flexibly.

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Appendix

Table A1: Universities Names and Numbers of students at Jordan

No.	University Name	Numbers of students
1	The University of Jordan	4370
2	Yarmouk University	4430
3	Jordan university of science & technology	1735
4	The Hashemite University	4460
5	Al Albayt University	2950
6	Al-Balqa Applied University	3890
7	Al Hussein Bin Talaluniversity	2570
8	Tafila Technical University	2000
	Total	26405

Table A2: Specification Table of Final Copy Social Perception

No.	Concept	Construct	Items No.	Total
1.	**Social Perception** (Fennema-Sherman Instruments, 1976; Allison et al. 2000;	**Difficulty of math**. (Alkhateeb, 2011; Alkhateeb&Ababneh, 2011; Abed &Asha, 2009).	B1, B7, B13, B19, B25, B31	6
		Nature of math. (Alkhateeb&Ababneh, 2011; Abed &Saeedi, 2002; McLeod, 1992; Barkatsas& Malone, 2005).	B2, B8, B14, B20, B26, B32	6
		Usefulness of math.(Kloosterman& stage,	B3, B9, B15, B21, B27, B33	6

	Baron et al. 2006; Alkhateeb&Ababneh, 2011; Dunning, 2001; Richard and Zimbardo, 2002).	1992; Lazim et al., 2004; Ababneh, 1997; Alkhateeb&Ababneh, 2011).		
		Anxiety of math. (Alkhateeb&Ababneh, 2011; Abed &Saeedi, 2002; McLeod, 1992; Barkatsas& Malone, 2005; Terwilliger& Titus, 1995).	B4,B10, B16, B22, B28, B34	6
		Enjoyment of math.(Nodriafshar&Maraseni, 2005; Abed &Asha, 2009).	B5, B11, B17, B23, B29, 35	6
		Teacher role.(McLeod's, 1992; Lazim et al., 2004; Tahir&Bakar, 2007).	B6, B12, B18, B24, B30, B36	6

Social Perception of Mathematics Questionnaire (SPMQ)

Dear student,

This instrument is designed to measure your perceptions, opinions and beliefs towards mathematics. It is not a test, so there are no right or wrong answers. Please answer the questions as honest as possible. Your answer is **confidential**.

Name: Rommel Mahmoud Ali AlAli

Phd Candidate.

Faculty of Education

UniversitiTeknologi Malaysia (UTM).

Part A: Biographical information

For statistical purposes only. Place a tick where appropriate.

1. **Gender:** ☐ **Male**

   Female ☐

2. **Type of Residential Setting:** ☐ **Rural**

   Urban ☐

Part B: Social perceptions scale

Please respond to the following items indicating your agreement or disagreement with each item listed below by placing a tick (√) in the appropriate box to the right of the corresponding items.

Items		Strongly Agree	Agree	uncertain	Disagree	Strongly disagree
B1	Mathematics is one of the most difficult subjects.					
B2	In mathematics there are always more than one solution to any math problem.					
B3	Mathematics helps me organize and develop my thoughts.					
B4	I worry a lot because of my mathematics marks.					
B5	Sometimes I enjoy the challenge presented by a math problem.					
B6	Good mathematics teachers spark my interest in mathematics.					
B7	I wish mathematics is dropped from the curriculum.					
B8	Mathematics consists of a set of rules and theories strictly defined.					

Items		Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
B9	Mathematics does not benefit me in solving problems that my facing.					

B10	I am nervous before mathematics classes.					
B11	I learn many interesting things in mathematics.					
B12	Teacher gives encouragement to work harder.					
B13	The subjects of mathematics are easy and enjoyable.					
B14	There is more than one way to introduce mathematical concepts.					
B15	Mathematics does not help me in the development of my thinking in general.					
B16	My mind goes blank and I am unable to think clearly when working in mathematics.					
B17	Mathematics is boring.					
B18	I still remember very well my good mathematics teachers.					
B19	It's easy to get high marks in mathematics.					
B20	Mathematics is characterized as continuously developed.					
B21	Mathematics doesn’t have any connections with the real life.					
B22	Math has been my worst subject.					
B23	I enjoy doing math when I can solveproblems.					
B24	My teacher explains mathematics enthusiastically.					
B25	I always need someone to help me in					

	mathematics.					
B26	There is only one way to solve a mathematical problem.					

Items		Strongly Agree	Agree	uncertain	Disagree	Strongly disagree
B27	Mathematical skills help individuals to understand the world better.					
B28	For some reasons, even though I study, math seems hard for me.					
B29	I enjoy seeing how rapidly and accurately I can work math problems.					
B30	My math teacher really wants us to enjoy learning.					
B31	I put great effort to study mathematics, but it is difficult to get high scores.					
B32	Mathematics is a science, rigid and is not renewable.					
B33	Mathematics help me in the study of other disciplines.					
B34	It wouldn't bother me at all to take more math courses.					
B35	I like math because it is practical.					
B36	My math teacher appreciates when I try hard.					

THANK YOU FOR YOUR COOPERATION