A CRITICAL STUDY OF THE NATURE OF AND FACTORS INFLUENCING STUDENT ENGAGEMENT AND ACADEMIC AND SOCIAL PERFORMANCES: A MIXED SURVEY-AND-NETNOGRAPHY METHOD

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Abstract: Generally, engaged students manifest process-oriented efforts of involvement to learning, cognitively, behaviorally and emotionally. When students are engaged, they reveal better ability to solve problems and higher students' achievements. This research provides significant insights and demonstrates good understanding of the nature and the architecture of student engagement and its antecedent personal-environmental factors, and consequential values, which is made possible by the use of mix research method. The mix method involves survey and netnography. Netnography is a relatively new research method, which involves complete or non-intrusive observation in online environment. The survey outcomes reveal that student engagement is influenced by both personal and environmental factors, and the significant ones are self-efficacy and belief in job prospect and performance for personal field. In addition, the relationship of the students among themselves and with the teacher, and the parent, and learning environment and ethical atmosphere are shown to be the significant ones influencing levels of student engagement.

Introduction: Research Background: The Global Competitiveness Report (2014-2015) advocates that education is a primary pillar for national competitiveness, as it is a driving force for worker efficiency and, most importantly, workers with better education are more able to adapt to advanced production processes and techniques, and thus, also more able to advance innovation. Although there are many factors influencing the quality and productivity of education (i.e. curricular relevancy, further manipulation of structural factors) , student engagement is considered as it involves the efforts of the students themselves in the quality and productivity improvement processes. In other words, student engagement is considered as a significant factor in enabling sustainable productivity advances in education. Focusing on student engagement has also a direct pragmatic reason, especially it can help to foster a lever-playing field. As Kuh (2009, p. 689) argues, "engaging in educationally purposeful activities helps to level the playing field, especially for students from low-income family backgrounds and others who have been historically underserved."

Based on the research conducted at Indiana University, Ross, Cen and Zhou (2014) indicate that student engagement is a key factor in effective educational practice that has been largely missing from the Chinese quality assessment frameworks. According to Ross et al. (2014), the study of student engagement phenomena is crucial to help inform the Chinese reformers and educators to better implement national educational policies (ibid, p. 34). The examination into how educational institution's system conditions affect learners and learning at scale is particularly stressed, as one of the key aims of the Global Education Leaders' Partnerships (GELP). GELP is "a community of key education system leaders, policy-makers, thought-leaders and world-class consultants collaborating to transform education at local, national and international levels, and the aim of these transformations is to equip every learner with the skills, expertise and knowledge to survive and thrive in the 21st century" (GELP, 2016). Active student engagement that delivers productive benefits to learners, by fulfilling the students' studies with a passionate attachment, enjoyment of the challenge and something meaningful and personal, could help prevent student dropouts, and thus, retent students (Foster, 2016). When students drop out, the communities are a lot to lose, such as in terms of the inability of the educational system to foster the development of human capitals (Fang et al. 2016), which inhibits economic growth (Fleisher et al. 2009). To reduce students drop-out and improve student competencies, for social and economic benefits and sustainability, educational institutions can rely on student engagement phenomena to help inform their strategic initiatives and policy formulations, partly because students should have emotional attachment and feeling (Harper and Quaye, 2009) and have the cognitive efforts to lead to reliable competency outcomes (Fredericks et al. 2004).

Rationale of the Research: As Watjatrakul (2014) argued, higher education institutions are in need of searching for ways to improve their performances under the pressure and flux of globalization. To this aspect, Millican (2014) acknowledges a more neo-liberalistic view, and suggests faculty should actively encourage student engagement at different stages of a student's university life, by, for instance, learning to aspire. Hallinger and Lu (2013) also are the advocators actively promoting the use of new approaches to curriculum design, teaching and learning, and to facilitate student engagement. The significance of student engagement, although the construct is still

emerging and theoretical saturation is still in progress, is recognized to be vitally important. To this end, Balan and Metcalfe (2012) attempted to study the influence of faculty's teaching effectiveness, which is represented by the different teaching methods employed, such as team-based learning, one business idea for each class, and poster plan and presentation session. Balan and Metcalfe (2014) discovered that relational, or innovation-driven learning approaches, such as poster plan and small business awards, are particularly effective at supporting the specific aspects of student engagement. The relational factor is also discovered in Hallinger and Lu (2012), which would be treated as an environmental factor as antecedent to the different aspects of student engagement, including the effectiveness or quality of the teaching. Teaching effectiveness manifests an aspect of service quality in higher education, and it plays a significant role to influence the value judgment of the students, emotionally (Spreng and Singh, 1993), and cognitively (Oliver, 1981).

Literature Review: As discovered in Blumenfeld and Meece (1988), to improve students' thinking, motivation and achievement, it is necessary to examine how students react to the different tasks (ibid, p. 236), which can be actively stimulated by the careful instruction design techniques such as brainstorming and engaging students in game, discussion and other activities (Mitchell and Carbone, 2011). In Newmann (1992), it is argued that active student engagement occurs when students are given the autonomy or opportunity to take ownership in the conception, execution and execution of tasks. A survey in the existent literature indicates that there are many further conditioning factors that influence student engagement, which the snapshot illustrations are being given as follows:

- Collaborative spirit to help divide works up appropriately.
- Group works that can stimulate higher order cognitive thinking, development of interpersonal and social skills (McGregor, 2008).
- The degree of challenge in student assignments (Turner, Thorpe, and Mayer, 1998)
- Student-teacher relationship (Birch and Ladd, 1997)
- Self-efficacy attitude of the students which enable the students to exercise control (Bandura, 1997)
- The instructors' autonomy support and students' autonomous motivation on learning (Black and Deci, 2000).
- The level of student competency (Connell and Wellborn, 1991).
- Achievement goals and study strategies (Elliot, McGregor, and Gable, 1999).

Effective feedback given to the students, for instance, measured by items such as "The teacher explains what we are expected to learn in the discipline," "The forms of assessment in the discipline are presented clearly," "The teacher makes specific comments to help us to do the work that we are doing," "The teacher gives us opportunities to improve our work and grades," "Different forms of assessment (not only written tests) are used," "When we do an assignment, the teacher clearly describes what is not right and makes suggestions to improve," "The teacher asks questions that help us to reflect on the quality of our work," "The tone of voice and facial expressions of the teacher show a belief that we can do better" (Carvalho et al. 2015, p. 2340). Note that the instrument of measurement could incorporate negative items which are used by the teachers to judge and punish (Valente, Conboy and Carvalho, 2009), and thus is not effective in promoting learning (Kluger and DeNisi, 1996).

- Social acceptance measured by "I am happy in this school," "At school my classmates make fun of me" (*, inverted), "I make friends easily at school," "At school I feel alone" (*, inverted), and "When I participate in group discussion, I feel that my opinion is valued" (Carvalho et al., 2015, p. 2339).
- Student identification with school, being measured by "I identify with the school," "I like the teachers in my school," "I only go to school because I have to" (*, inverted), "My teachers never consider me a good student (*, inverted), "My skills make me confident about my future," "I have the abilities necessary to enter university," "The grades I have in school determine my future," "At school, I have had opportunities to discover that I can do new things," "My future depends on what I do at school," "I do not care about grades, as long as I pass the year" (*, inverted), "For me, getting good grades is a guarantee of a good future," "For me, going to school is an enriching experience." Note that these items actually contain "attitude" oriented measures.
- Ethical inclusive environment for the students to participate and excel in equal terms and opportunities (Markwell, 2007).

A further careful examination of the antecedent factors that influence student engagement reveals that the determining factors that drive student engagement could further be grouped into person-centered factors (cf. Lawson and Lawson, 2002), which include student initiative and student investment efforts (Lawson and Masyn, 2015), and the challenging attitude of the students (Coates, 2005), and student team working level (Coates, 2005), management oriented factors i.e. the use of assessment to shape the student engagement

experience (Krause, 2005), and institutional factors which illustrate the deployment of physical campus resources (Kuh, Kinzie, Buckley, Bridges, and Hayek, 2007) and opportunities (Coates, 2005) to support and enable student learning (Pike and Kuh, 2005). Institutional resources and opportunities include, for instance, library atmosphere, space and resources that are conducive to students to work collaboratively, and the attractiveness of curriculum that stimulate the interests of the students to engage actively (Coates, 2005, p. 26-27), the use of study groups and feedback to encourage engagement (Markwell, 2007), faculty behavior and attitude (Umbach and Wawrzynski, 2005). In this research, these factors can be further simplified into student-centric and situational factors, and thus the study can take advantage of the insights and empirical evidences provided towards the Person-Situational Field Theory of Lewin (1951).

Specifically, the Personal-Situational Field Theory of Lewin (1951) describes the psychological field of the students, which is a form of Gestalt psychology. In other words, the total psychological field of the students which influences the student engagement is consisted of both personal factor and environmental factors:

- Personal factor i.e. the student's personal efforts in library usage, personality traits, and self-efficacy motivation and cognition, and
- Environmental factors i.e. student-to-student relationship, student-to-teacher relationship, student-to-parent relationship, the service quality of the faulty, and campus life.

Thus, the research objective is aimed to validate the Personal-Situational Fields in influencing student engagement, which in turn leads to overall student's perceived performance, and the conceptual model depicting this configuration of relationships is shown in Figure 1. To address this research objective, both survey-based method and netnography method are used. Two following research questions are raised in order to address the research objective:

- What is the interrelationship between the personal-situational factors and the student engagement, and which personal-situational factors are significant in this relationship?
- What is the interrelationship between student engagement and overall student's perceived performance, and what are the detail patterns of the relationship?

Figure 1: The Conceptual Model

It is noted that survey is the primary research method used to study these two research questions, and netnography is used to help strengthen the explanatory power, by enriching the understanding via different student cases.

Research Methodology: Research that attempts to study student engagement is challenging, and is being intermingled with a mixture of research outcomes. The researchers in this thesis reckon that the inconsistency and unclear picture of student engagement phenomena are partly attributable to not getting to the scopes and core of understanding the nature of student engagement, especially in the subtleness of the interrelatedness of different variables and how an explanation can be provided.

In particular, Brown et al. (2014) exploited action research case study to aim to introduce and improve module-oriented learning, and to seek to change the learning environment, but they found little evidence that student engagement and student characteristics or personality traits are influencing student performance, with the exception of a minor positive correlation between conscientiousness trait and performance. In McCormick et al. (2015), by the use of online survey of three different universities that yielded a total of 515 students, they identified that higher student engagement is correlated to higher self-reported motivation, such as self-efficacy, or the students' beliefs about their own abilities.

Thus, there is a need to close the research finding and what is actually in practice that relates to student engagement. To resolve this issue, this research uses survey-based approach, which is then followed by netnography research method, to help enrich the understanding of the structure of student engagement and its antecedents and consequential phenomena. While survey-based method provides some degree of representative generalizability to the

structure of the theoretical model, netnography, if critically executed, can yield significant analytical generalizability. Nevertheless, there are many approaches to undertake the mix of survey and netnography. This research approaches this mix method separately, that is, they are not interrelated to the same sample groups. Nevertheless, the outcome of netnography can provide an explanatory perspective to support the power of explanation of the survey outcome, to suggest direction for further research, and thus fills the gap in higher education literatures, in enriching the explanation of student engagement and the values resulted, and provides guidance for universities' policy makers to better structure the curriculum and learning environment, and to equip holistically supportive and enabling mechanisms, including teacher-to-student relationship, to enable positive student engagement and campus productivity.

Survey Method: The target population for this study is limited to the students studying at two public universities in Yunan, namely the Kunming University of Science and Technology and Kunming Medical University (KMU). The survey, consisted of questionnaires in closed format, was assisted by the Student Associations of both universities, with an aim to spread to as many students as possible, but in conveniently purposive manner. A total of 297 valid questionnaires were returned for Kunming University of Science and Technology and a total of 194 students participated in the survey from KMU. No missing data were found to significantly render the exclusion of the data from the data analysis. The participant profiles will be discussed in the data analysis section. The questionnaires were challenged in the MBA class with 4 MBA students and the advisor as the subject expert and also in research methodologies to check on the content validity and construct validity, prior to actual survey. Subsequently, reliability analysis is performed at the post-data stage, which is presented in Cronbach's Alpha.

In questionnaire items development, the existent literature can be exploited for the advantage, which this research acknowledges the works of many researchers, for instance:

- In behavioral engagement – Behavioral engagement is reflected in student actions in the academic context (Carvalho et al. 2015). Based on the task involvement questionnaire of Missrandino (1996) and of Wellborn (1991), Reeve and Tseng (2011, p. 262) confirmed the following reliable factorized items, namely, "I listen carefully in class," "I pay attention in class," "The first time my teacher talks about a new topic, I listen very carefully," "I try very hard in school," "I work hard when we start something new in class." Other relevant behavioral engagement items are "I ask questions when I do not understand the material," "I do the homework," "I go to school willingly," "I take notes while in the class," "I work to understand the material, even when it is difficult," "I study the material given in the class" (Carvalho et al. 2015). Other possible behavioral engagement evidences include commitment to school work and efforts made to get good grades (Jordan and Nettles, 2000), participation in extracurricular activities (Finn, 1993).
- For agentic engagement – items, with Alpha of 0.82, are developed by Reeve and Tseng (2011), to have significant impact on student achievement partly because "it is through intentional, proactive, and constructive acts that students find ways to improve their opportunity to learn by enriching the learning experience and by enhancing the conditions under which they learn" (ibid, p. 263). Items include: "During class, I express my preferences and opinions," "During class, I ask questions," "I tell the teacher what I like and what I don't like," "I let my teacher know what I am interested in," "I offer suggestions about how to make the class better" (ibid, p. 262). Nevertheless, the instrument proposed by Reeve and Tseng (2011) seem to cognition oriented, and thus can be absorbed into cognitive engagement.
- Emotional engagement – Based on the positively valenced items given in Wellborn (1991) and Skinner, Kindermann and Furrer (2009), four items are adapted by Reeve and Tseng (2011, p. 262), as "When I am in class, I feel curious about what we are learning," "When we work on something in class, I feel interested," "I enjoy learning new things in class," "Class is fun."
- Cognitive engagement – Relying on the learning strategies questionnaire of Wolter (2004) and the widely used Motivated Strategies for Learning Questionnaire in Pintrich, Smith, Garcia, and McKeachie (1993), numerous items are adapted by Reeve and Tseng (2011, p. 262), known as "When doing schoolwork, I try to relate what I am learning to what I already know," "When I study, I try to connect what I am learning with my own experience," "I try to make all the different ideas fit together and make sense when I study," "I make up my own examples to help me understand the important concepts I study," "When what I am working on is difficult to understand, I change the way I learn the material."

However, the wordings given above would be re-adjusted to better reflect the theme and definition of each of the variables. In addition, the personal-situational factors considered include the student-to-teacher relationship, the student-to-student relationship, the student-to-parent relationship, learning environment, teaching service quality,

ethical atmosphere, belief in job prospect and performance, student's self-efficacy, joyful and positive campus life, reading habit, library usage, and English proficiency. The overall student's performance includes both the perceived academic and social performances of the students.

Netnography Method: Netnography is a newly emerged research method which is an evolution of ethnography on the online platform. According to Watson (2013), researchers rely on netnography to study people, their social worlds and how they live their lives and understand themselves. Nevertheless, similarly to ethnography, they could be a lot of variants, such as complete participation, the participant-as-observer, the observer-as-participant, or the complete observer (Elliot and Jankel-Elliot, 2003). This research undertakes the complete observer, as it presents the most non-intrusive nature of etnography or netnography (Langer and Becjman, 2005). However, the limitations the researchers have identified, include, no clarification is sought with the students who posted the messages and dialogues online, in Weibo social media platform, and thus the researchers have to rely on critical analytical competence based on rich literature review reading and synthesis. In short, the researchers rely on a data analysis process that challenges the reliability, validity and analytical generalizability perspectives, by a team of 4 MBA students and one advisor who is knowledgeable in the research process. Inter-rater reliability is aimed to ensure arriving at valid explanation and identification of themes and the patterns of themes.

Data Analysis and Discussion

Survey-based Data Analysis

Kunming University of Science and Technology: A total of 297 students participated in the survey, consisted of 64% of male and 36% of female students. Among these students, 57.6% told that this university was their first-choice while 42.4% were not. Majority of 84.2% lived on campus, while 7.4% lived with their parents and 8.4% lived outside campus and not with their parents. In addition, the majority of the respondents, at 56.6%, studied first-year, and 29% studied the second-year, 11.8% studied the third-year, and 1.3% studied the fourth year, and a further, 1.3%, studied at the graduate schools. The majority of the respondents in the survey majored in Sciences, at 59.6%, and business at 4.7%, medical students at 6.4%, philosophy, psychology or sociology at 11.8%, and others at 17.5%.

The use of multiple regression analyses are used to study the research questions 1 and 2, which the results of the SPSS Analysis Version 23 yield:

The overall student's perceived performance = 0.27 Emotional engagement + 0.508 Behavioral engagement, $R^2 = 0.601$.

Where behavioral and emotional engagements are:

Behavioral engagement = 0.094 Student-to-teacher relationship + 0.241 Learning environment + 0.124 Ethical atmosphere + 0.239 Belief in job prospect and performance + 0.172 student's self-efficacy + 0.202 Joyful and positive campus life, $R^2 = 0.635$.

And Emotional engagement = 0.154 Student-to-parent relationship + 0.180 Learning environment + 0.144 Ethical atmosphere + 0.218 Student's self-efficacy relationship, $R^2 = 0.531$.

In terms of personality traits, the overall student's performance = 0.209 Conscientiousness + 0.236 Extraversion + 0.19 Agreeableness.

In addition, the students surveyed indicated a "not-active to neutral" level of reading habit, at 2.9326 in five-Likert scale (from "not very active" to "very active"), and the library service usage (i.e. borrowing books, and the use of library for study) was at rarely to occasionally/sometimes level, at 2.5724 (from "never use" to "always"), and their perceived English proficiency at "bad to neutral", 2.6296 (from "very bad" to "very good"). The average accumulated GPA (AGPA) of the respondent groups was at 2.949 out the perfect "5", while the majority of the male students scored obtained a AGPA of mean of 2.9105 or below, the female students showed more balance distribution at a mean of 3.0187. Nevertheless, the T-test does not show any significant differences on the different aspects of student engagement and the overall students' perceived performances. No significant differences of the student engagement phenomena and perceived performances are also statistically concluded, through either T-test or ANOVA test, for the gender difference, the different levels of studies, living mode, reading habits, library usage, and field of study.

Kunming Medical University (KMU): A total of 194 students of Kunming Medical University participated in the survey, which was consisted of 49.5% of male students and 50.5% of female students. Among the students a total of 87.6% lived on campus, with minor 6.7% with parents, and 4.6% lived outside the campus and not with the parents. The majority of the students, at 51%, were studied at fourth year, while the rest was consisted of 5.7% of first year, 5.2% of second year, 17.5% of third year, and 20.6% in graduate level. Among the students, 58.2% told that this university was now first choice, and 41.8% not the first choice, and 95.4% of them majored in medical sciences, while 0.5% in business, 0.5% in sciences, and 3.1% in either psychology, philosophy or sociology, and another 0.5% in other.

The sample shows the mean value of 3.2835 for reading habit (from "neutral to active"), mean of 3.2887 for accumulative GPA, mean of 2.5104 for library usage, and mean of 3.0361 for English efficiency. Apparently, the students of Kunming

Medical University performed better than Kunming University of Science and Technology.

The correlation analysis showed that the three aspects of student engagement, namely cognitive, behavioral and emotional, are positively related to AGPA, at 0.258**, 0.233**, and 0.334**, and to the overall students' perceived performance, at 0.604**, 0.573**, and 0.532**, respectively. Reading habit, library usage and English proficiency of the students also showed significant correlational analysis, positively, to AGPA (at 0.252**, 0.380**, and 0.30**, respective) and to the overall students' perceived performances, at 0. 251**, 0.229**, and 0.198**, respectively.

Both research questions show the results as follows:

The overall student's perceived performance = 0.343 Cognitive engagement + 0.239 Behavioral engagement + 0.163 Emotional engagement, R^2 = 0.431.

Where,Cognitive engagement = 0.286 Student-to-student relationship + 0.159 Learning environment + 0.292 Student's self-efficacy + 0.127 University choice + 0.114 Library usage, R^2 = 0.495.

Behavioral engagement = 0.44 Student-to-student relationship + 0.313 Student's self-efficacy + 0.194 Learning environment, R^2 = 0.611

Emotional engagement = 0.339 Student's self-efficacy + 0.271 Learning environment + 0.135 Student-to-student relationship, R^2 = 0.382.

In addition, the three aspects of student engagement, for the Kunming Medical University (KMU), also are positively related to AGPA, at 0.258**, 0.233**, and 0.334**, respectively.

Netnography-based Data Analysis: The content analysis has identified numerous key themes that fit into the original theoretical framework, and thus the a priori theoretical argument is supported. The data analysis is presented in case-to-case sequence until theoretical saturation, and thus the netnography approach resembles and exploits case research study.

The data analysis will be presented with the students' own words, and is followed by the researchers' sense-making and interpretation in the theoretical context of student engagement.

The following particular two cases, Case 1 and Case 2, establish a skeleton of the theoretical model that illustrates the phenomena of student engagement.

Case 1: "Today I have written eight essays after my reflective understanding of my readings. I recalled seeing a student with such a persistent reading and critical reflective behavior in her last year in senior-high school, and she scored full in her final examination. When I use this method for my whole semester, I have significantly improved my reading accuracy and gained extra time and better able to manage my time. Insist on, insist on."

This student emulates behavioral consistency as a good "role-model", which is an aspect of behavioral engagement. In this case the student used the method for the whole semester and significantly improved her reading accuracy. Apparently the student cognitive engagement has paid off in improving her reading accuracy. This has shown that student behavioral engagement can improve student cognitive engagement, in which the survey approach has difficulty in illustrating the explanation of the interplay between cognitive and behavioral engagements (Xiaoyao, Tan and Jongsureyapart, 2016). In particular a critical reflective competency is shown as an important cognitive engagement which this student used to improve her reading accuracy significantly, including having more free time, and has gained time efficiency management. Overall, this student engagement phenomenon is shown in Figure 5.

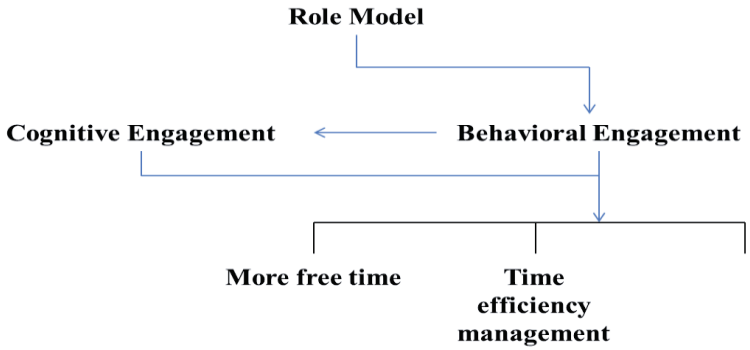

Figure 2: Netnography Case 1

Case 2: "The ability to use the knowledge of Law I acquired to help my students improve their learning is an extraordinary happy thing for me, even though I am still in the law-learning process. But this assistantship to friends has given me tremendous amount of self-confidence and power, which has strengthened my persistency in the journey of learning." This student demonstrates agentic

engagement in using the Law knowledge of the student to help friend, which is motivated by altruistic motive and value, coupled with hedonic happiness. In addition, this agentic engagement has also helped to develop and strengthen the student's self-efficacy, and provides a belief and confidence to propel the student to persist on the studying efforts.

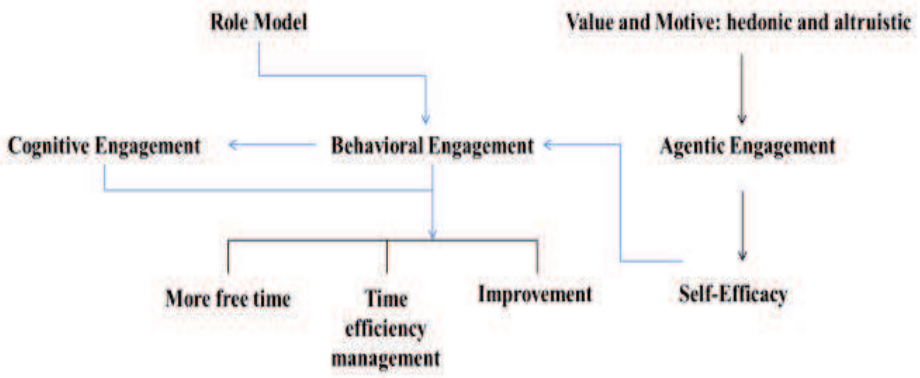

Figure 3: Netnography Case 2

Other cases are summarized as follows: The learning environment is also obvious, for instance, one student quoted saying, "Today my reading activity has improved significantly, even to my surprise, because it is such a quiet learning environment tonight." A further data analysis shows that learning environment is not a simple issue, which may contain the so-called "plasticity" requirement in that different environmental settings may be favorable to different modes of learning modes. For instance, in a self-learning environment, a student was joyful at how his or her study efficiency has improved in a self-learning classroom when the "wifi" was no longer installed for use – "When the wifi was taken away from the self-learning classroom, it has improved my learning efficiency three times. I am able to complete my learning duty at 4PM which usually last until 8PM." Thus, certain infrastructure, which is suitable for one mode of learning, may not be suitable for another learning mode, for instance a self-learning process may require a quiet environment, in which the available of "wifi" may disturb the students' attentions and thus student engagements.

Teaching instructions, for example, in aspect of problem-solving methods, are effective in engaging students. One student quoted, "By using the methods of the teacher in my reading, it has significantly improved the way I deal with problems solving."

The relationships of the students with other students, teachers and their parents are also shown to play vital roles. In one student, "My reading translation speed has improved tremendously, thankful to my teacher for the assistance as well as the supports of my mother." Teachers' roles, in terms of their feedback and encouragement to the students, also seem to influence student engagement behaviors, emotionally, manifested as study passion – "My handwriting teacher, who always uses encouraging method, to point out our weaknesses and strengths, is a significant ingredient influencing the emotion of my learning, and attitudes."

Data also show that when students are weak in various scopes of engagement, including their student-to-student relationship, can significantly, negatively impact the student's psychological state of mind, i.e. being depressed. A student was quoted saying, "I can't stop thinking that I am a loser, without good classmate's relationship, and not studying hard, which makes me so depressed, and I can't find anyone to talk. I am so sad but I can't do anything with it." Another student posted, saying, "I have a bad mood today. My mid-term examination is approaching, but I am not learning much at all, having bad classmate's relationship and troubles in my family as well." Thus, not only learning environment is critical for a student's learning and engagement, but also the living environment, revealed in terms of relationships with other stakeholders and the social environment are not to be neglected.

Conclusion:

Survey-based Outcome: The survey-based data analysis identified the significant role of three types of student engagement, namely cognitive engagement, behavioral engagement and emotional engagement, in influencing the overall student's perceived performance, as shown in Figures 4 and 5. Cognitive engagement is particularly obvious for the medical students at Kunming Medical University, as shown in Figure 5. The engaged students pay attention in the cognitive sense that they will attempt to make sense of the study, understand the meaning transmitted, and make the necessary adjustment in order to help them understand the difficult issues at hand. Behaviorally, the engaged students are persistent, sticking with the tasks despite difficulties

while also paying attention to the class, especially on new topics, and participate in the class to clarify issues. Emotionally, the engaged students demonstrate enjoyable spirit and enthusiasm in the learning. As similarly indicated in Blackburn (2016), engaged students show both intense feeling as well as evidences in the behaviors and cognition. The former is exemplified by feelings such as "excited, respected, challenged, stimulated, enthusiastic, content, accepted, energetic, safe, positive, upbeat, cooperative, confident and hopeful." (ibid, p. 80), and cognition and actions are combined to reflect, for instance, "problem-solving, processing, questioning, discussing, sharing, cooperating, collaborating, being engaged, planning, producing, learning, showing evidence of learning, thinking, discussing, asking questions, and posing solutions to problems, making links and connections to their learning, and being metacognitive, reflecting on their learning, and setting goals for their next steps." In short, engaged students are seen as involved and focused on learning.

The data analysis also concludes the personal-and-situational fields which influence student engagement, and in turn influence overall student's perceived performances. Factors that influence student engagement are broad-based, but this research organizes them into two domains, namely the personal field and the environmental field. When the students assume an active orientation towards their learning environment (Lefever, 2012), for instance, that relates to the sense of belonging, the students would actively participate in the production of knowledge. Thus, embedded within these environmental influences are actually the attitudes and meanings formed by the students which motivate them to engage, emotionally, cognitively, and behaviorally in their campus life.

The personal-and-situational field thus fits with the explanation of Lewin's person-situation field theory (Lewin, 195) and Bandura's social cognitive theory (2005), which can be explained that both environmental context and students' personal self-efficacy and belief in job prospect, and to some extent, the motivational or aspirational choice of the university, can significantly serve as current guides and motivators of cognitive engagement, behavioral engagement and emotional engagement. Thus it is important to help students develop their self-efficacy and belief in job prospect and performance, including fostering a favorable relationship and learning environment among themselves and with the teacher and their parents. The overall learning atmosphere, being seen as ethical, positive and active attitude and participation of the students, is important to induce student engagement, which can be seen as a sense of community, of fairness, caring and mutual assistantship. The overall learning and ethical environment also impacts the various aspects of student relationships with the teachers and among the students, as well as student's self-efficacy and belief in job prospect.

In addition, the teaching service quality has shown significant correlational relationship with the different types of student relationship, learning environment, ethical atmosphere in the study, and self-efficacy and belief in job prospects. In other words, when the teachers give quality lectures, are helpful, are easily reachable, provide good lecture notes, show sincere interest in solving student problems, have fair treatment and prompt response to the students, these positive results would also be revealed in positive relationship contexts, a positive ethical atmosphere and learning environment, i.e. classmates are active in the class, and an improved self-efficacy and belief in job prospect.

The relational aspect of the environmental field is shown to be significant: while student-to-student relationship is significant in influencing all the three types of student engagement for the students at Kunming Medical University, student-to-parent relationship is vital for emotional engagement, and student-to-teacher relationship is seen to influence the behavioral engagement for the students at Kunming University of Science and Technology.

Kunming University of Science and Technology

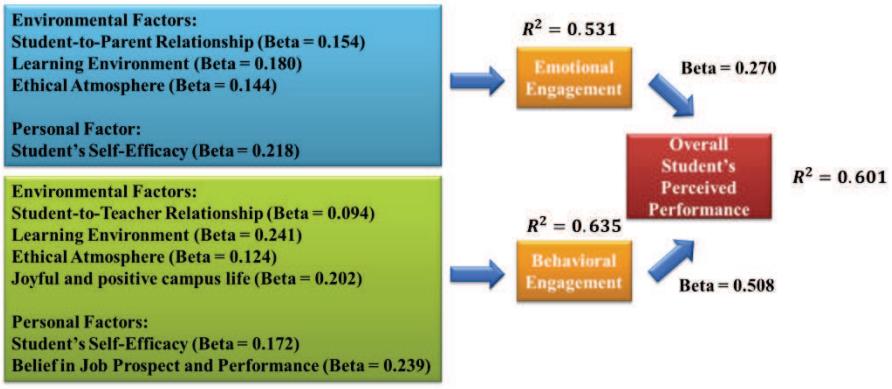

Figure 4: The Student Engagement Architecture for Kunming University of Science Technology

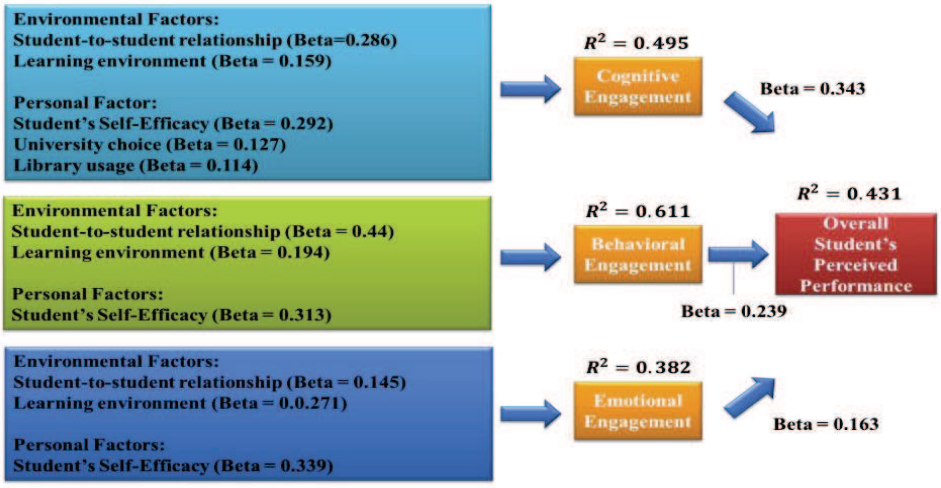

Figure 5: The Student Engagement Architecture for Kunming Medical University

While the survey-based data analysis does show the significant roles of both personal and situational fields, but there are still many other important factors within these two fields. For instance, Blackbum (2016) provides the "ENGAGE" principles to stimulate student engagement, which are captured within the person-situational fields. The acronym "ENGAGE" stands for "Excite the brain, Nudge with uncertainty to step out of the students' comfort zone, Grow from or capitalize on students' strengths, Activate the understanding, Group for collaboration, and Elicit involvement" (p. 81). Thus, factors that influence student engagement are diversified in nature, which depend upon situations and the nature of population in the study, for instance, Salaber (2014) studies technology impacting on student engagement. In Pehmer, Groschner, and Seidel (2015), instead of using teaching service quality, which is general, they focus on gradual scaffolding process built into the teaching service quality, which also include student feedback, to stimulate student engagement. Liu, Liu and Yang (2014), further embed student development in the engagement process, to help students to accomplish their study more effectively.

Netnography-based Outcome: While the netnography based outcome, fundamentally, validates the conceptual framework in Figure 1, there are additional areas of contributions.

First, the netnography results identify that Kolb's experiential learning theory (1984) is a useful learning theory that research on student engagement should explore. This should be areas for further research. For instance, critical reflection has been shown in one student case to influence the reading accuracy, as an ingredient for cognitive engagement. Active participation and concrete experience could allow the measurement of both behavioral and emotional engagements, including agentic engagement, to be more learning-centered.

Second, the netnography analysis shows the significant roles played by personal and situational fields. In particular, the data revealed variables such as feedback of teachers and their encouragement and empathic behaviors toward the students, favorable learning environment, teaching instructions, role model the students perceive important, and values and motives of the students, i.e. hedonic and altruistic attitudes. These variables have shown to significantly influence their engagement in learning, cognitively, emotionally, behaviorally and agentically. In addition, a good learning is shown by the students capable to exploit and aware of the interplay relationship of the different facets of student engagement. For instance, a behavioral persistency may finally result in cognitive engagement competency, and an agentic engagement may build self-efficacy which lead to further develop attitudes and actual engagement behaviorally and cognitively.

Third, the netnography-based data revealed numerous aspects of values resulting from student engagements, such as the psychological states of mind, more free time to the students, and improved time efficiency management, academic improvement, and self-efficacy. The third point provides further enrichment to the study of the overall student's perceived performance.

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