



Understanding Students' Intention to Engage in Deep Learning: Application of the Theory of Planned Behaviour

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Abstract- This paper examines students' intention to engage in deep learning with the aim to understand them better. Majority of students practice surface learning approach, defined as having the intention to only meeting the minimum requirements by memorizing important information. Based on the Theory of Planned Behavior, we relate the components of this theory with our main quest of students' intention to engage in deep learning, where the attainable predictors are students' attitude, subjective norm, and perceived behavioral control. Our online survey, which was conducted and analyzed both statistically and descriptively, revealed that our students are deep learners. Our model was also found significant, with all three predictors were positive and significantly contributing to students' intention to engage in deep learning. Nonetheless, detailed analysis suggests that none of the predictors appeared to have a stronger effect over the others. The findings from this study confirm the applicability of the Theory of Planned Behavior in explaining students' intention to engage in deep learning. The findings also provide educators with the required knowledge to better design their curriculum with deep learning approaches.

Keywords: Deep Learning, Student Engagement, Theory of Planned Behavior, Approaches to Learning, Learner's Diversity

I. INTRODUCTION

Tertiary level education institutions are currently withstanding the disputes of not only having to educate students a vast number of discipline-specific knowledge and perspectives, but also to cultivate students' proficiencies to become competent professionals and lifelong apprentices in their own subject matters. To achieve this, effective teaching and learning in these institutions are essential to engage students in deep and immersive learning instead of merely delivering education [4,10]. While some researchers had claimed that students' approaches to learning are evolving into deep learning in tertiary level education [7,35], no existing strong arguments for this theory and no fair empirical proof were found [6]. The reasoning behind this claim seems to be largely focused on the belief that tertiary level education is aimed for the creation of employment-ready graduates with the mindset of lifelong apprentices. In addition, the theoretical essence of tertiary level education institutions which fosters deep learning approaches contributes to this notion.

Based on the pioneer study of [34], the massive gaps between deep and surface approaches have been consistently established across a large variety of qualitative and quantitative studies in numerous countries and study fields through diverse testing methods [11,17]. Learning approaches have been linked to the performance of students' learning outcomes, which may depend to the evaluation approach used [37,47]. The relationship between learning approaches and students' impressions of their teaching-learning experiences have also been established [19,33].

Generally, there are several problems that students face, particularly in the way they approach learning. First, students tend to memorize facts and theories, rather than attempt to understand how or why certain phenomenon happens. Second, students nowadays are performance-oriented rather than learning-oriented, that is, they engage in learning just to score great grades or to pass a course, without really having real passion or interest towards the subject matters. In addition, they are rarely able to relate the subject matter learnt to other contents or context of the course syllabus, and even to the

program structure itself. Finally, they tend to ignore the implicit message or real intention of an assignment, due to having time constraints. All these problems can be referred to as the surface approach learning, defined as having the intention to only meeting the minimum requirements, with the objective of covering only the important information achievable via memorization [8].

Even though deep and surface learning are typically viewed as a variable of a person's difference, students can adjust their learning approaches based on the learning circumstance and their targets [11]. In other words, these learning approaches vary from other learning approaches in the way which they are more versatile and compliant to the subject matter [15]. Additionally, deep and surface learning can be used as orthogonal constructions. For example, students can follow both deep and surface learning approaches, depending on the content studied [38].

Having these problems in mind, this research intends to investigate students' intention to engage in deep learning, using the Theory of Planned Behavior (TPB) [2]. Three components of the theory namely attitude, subjective norm, and perceived behavioral control, were regressed against the outcome variable, which is the intention to engage in deep learning. Previous literatures indicated that the degree of predictive ability of any of the three components of the TPB differs in various situations or implementations of behaviors [29,12,13]. In addition, the TPB is an effective indicator of encouragement for learning [42,28]. By conducting a survey on our own students, we believe that we will be able to better understand their current approaches towards learning. Based on the findings of this study, it is our aim to provide ways which can assist students to become engaged in deep learning.

II. LITERATURE REVIEW

2.1. Approach to Learning

In educational research, approaches to learning represent the nature of students' study processes which are two qualitatively different approaches - deep learning and surface learning [9,10]. The distinction between deep approaches and surface approaches is particularly useful for academics who want to understand their students' learning and create learning environments which encourage students to achieve desired learning outcomes.

2.1.1. Surface Learning

Surface learning is simply scraping the surface of new facts and ideas and attempting to store them as isolated and unconnected items [26]. It involves low-order cognitive skill as it only concentrates on recall of fact rather than associate with deep learning like analysis, extending idea, synthesis, and evaluation. This passive approach to learning is mainly requiring students learn what they supposed to learn and nothing more. The superficial approach to learning simply involves scraping the surface of the material being studied and focusing only on the assessment requirements without deeper exploration [26]. Students tend to work in isolation and see learning as coping with tasks, as opposed to deep learners who seek to understand meaning. There are many previous studies showed that surface learning is getting bad rap as it is not making connections between concepts, extending ideas to new situations, and building relationships among ideas like deep learning. Student's personal characteristics always affect the study process [17,18] causing low motivation and engagement in the study field [14]. Besides, weak self-efficacy beliefs affect the effectiveness of learning process [31]. Having heavy workload and lacking self-regulation were also correlated with surface learning [14,25,41]. This probably increases the students' burden. Due to the ineffectiveness of surface learning, people shift to deep learning approach associated with students' understanding and engage appropriately in meaningful learning [34]. It focuses on the main themes and principles and uses strategies that are appropriate for creating such meaning. However, [6] questioned that do students develop towards more deep approaches to learning during studies? The results from 43 studies gave an unclear picture of the development of approaches to learning and, therefore, did not provide clear empirical evidence for the assumption that students develop using deep approaches during higher education. Conversely, there were also proving that those students who applied deep learning outperformed the surface learning [4]. More details can be referred in 2.1.2.

2.1.2. Deep Learning

Deep learning promotes better strategies in learning. It includes critical thinking, detecting pattern,

problem solving skills and being critical of arguments and evidence. This approach is particularly relevant in the context of education for sustainability [46]. Deep learners reflect on personal significance on what they are learning. Their intention is to understand the meaning of texts and integrate new information into their existing knowledge [24]. This century, sustainability has received huge attention in management education over the past ten years [39]. Deep learning is particularly relevant in the context of education for sustainability. Warbuton [46] discussed about the factors and strategies that foster the interdisciplinary approaches to sustainability beyond the institution. [46] also listed some useful principle for sustainability education using deep learning approaches. For instance, having combination of mastery learning and discovery learning, emphasizing principles and concepts rather than accumulated facts [27], firmly establishing curriculum that anchoring idea which related to personal experience and having good conceptual in a clear and graphic fashion. Deep learning approaches must be interest led by less emphasizing on curriculum content. Conversely, more contextual interpretation should be stressed on by providing advanced skills that necessary to deal with a world in which good jobs are becoming more cognitively demanding. It also trains the students to be more thoughtful, productive, active citizens in a democratic society. An investigation on problem-based learning (PBL) were carried out by [16]. The result showed that PBL contributed huge impact to deep learning. It enhanced active learning and intrinsic motivation. However, PBL showed no effect on surface learning. Deep learner always seeks for understanding and enjoy carrying out the learning tasks. They also have a genuine curiosity in the subject. They keep searching for connections with other subjects and build their current learning.

However, some students prefer both deep and surface approaches to achieve their missions depending on what is required and the conditions of learning. For instance, preparation time for assessment. This is referred as achieving or strategic learning [11,20] where strategic learners use 'cues and clues' [36] about assessment. They are motivated by positive outcomes such as achieving high grades.

2.2. Theory of Planned Behavior (TPB)

The theory of planned behavior (TPB) is a prescriptive cognitive theory that focuses on beliefs and attitude as determinants of specific behavior. This theory is broadly applied in the field of marketing especially in consumer behavior. Nonetheless, this theory is also applicable in the field of education and learning as the theory itself is rooted in the epistemological psychology.

TPB was developed as an extension of theory of reasoned action (TRA). Both the TPB and TRA articulate that one's behavioral intention is driven by one's attitude towards the behavior and one's subjective norm influencing one's desired intention. The one exception between the two theory is the addition of "perceived behavioral control" in the theory of planned behavior. Perceived behavioral control denotes one's locus of control over a non-volitional intention. Ajzen [2] articulated that the inclusion of this variable in theory of planned behavior signifies one's intention to perform a behavior in a situation that were out of volitional control.

The ultimate outcome of both theory of reasoned action and theory of planned behavior is intention and its effect on actual behavior in various contexts. Ajzen [2] defined intention as the degree of effort and hard work that one is willing to exert to perform a particular behavior.

Guided by the TPB [2], we develop a model to understand student's intention to engage in deep learning. In line with the components of TPB, we articulate that a student's attitude towards deep learning, his/her peer influence (hereby known as Subjective Norms), and his/her beliefs in his/her ability to engage in deep learning (Perceived Behavioral Control) will shape his/her intention to engage in deep learning.

With regards to this study, attitude alludes to the proportion of a learner's ideal or displeasing examination or assessment of the conduct being referred to [1]. In this way, the attitude impacts the learner's expectation to participate in their realizing, which thus impacts profound learning. Likewise,

when learners structure uplifting attitude towards learning, they have a more grounded aim toward taking part in profound learning, and they are bound to be profound students [45]. Past studies had utilized this model to clarify learners' goals and additionally practices in instruction. For instance, [21] inspired an example of 1300 Irish secondary school students on their aim to leave school early. Components of the TPB towards school fruition, students' scholastic achievement, capacity to concede satisfaction, alongside SES measures were gathered. Findings showed that attitude, notwithstanding guardians' and instructors' abstract standard, were critical to students' expectation to stay in school [21]. Different researchers have utilized the TPB likewise. For example, [43] directed an investigation of more than 550 pupils utilizing the TPB to comprehend their subject decisions in senior secondary school. Taylor found that the TPB measures had the option to clarify 68% of the difference in aims to examine Media Studies, and 66% of the change in aims to consider Physics. Taylor expressed that the adequacy of the TPB factors was probably going to be a result of the high stakes nature of the outcomes engaged with settling on a helpless choice about subject decision and consequently, the conduct might be profoundly arranged. The stakes are maybe much higher when the pupils structure the goal to go to college. The subsequent outcomes of a helpless choice may bring about generous deficiency of cash, time, and exertion. Predictable with Taylor's prior remarks, the profoundly arranged nature of shaping an aim to learn at college is a genuine choice and it is absolutely a result of the high stakes' tendency of this conduct that the TPB variables might be especially viable in agreement students' goals when learning at college. The previous are instances of studies utilizing the TPB to investigate students' cooperation in school-related practices and highlights the reasoning for utilizing these indicators in this study.

On the contrary, subjective norm in this study alludes to the apparent prevalent difficulty experienced by learners to acknowledge and draw in, or not to acknowledge and take part in profound learning [2]. Fundamentally, subjective norm is dictated by the individual's convictions about how significant others consider the conduct and whether significant others would endorse, or dislike a given conduct [3]. The author likewise adds to a solid assemblage of exploration that proposes practices are formed unequivocally by the social setting wherein one lives. As indicated by the TPB, subjective norm is thought to be comparative to its indirect measure.

This indirect measure contains two components. To begin with, the person's convictions of how critical others like or aversion the individual playing out this conduct (additionally alluded to as normative beliefs), and second, how much is the individual propelled to consent to huge others (inspiration to go along). The literature shows that social impacts change as per the conduct being inspected [3]. Contingent upon the conduct being referred to, significant others may incorporate family, companions, or mate [2]. [43] detailed that the two primary standardizing effects regarding learners' matter decisions in studies were guardians and educators. Comparative perceptions were made by [21]. Normative beliefs can likewise be ordered into two distinct structures, including what notable individuals figure an individual ought to do (injunctive standards) or what notable individuals really do (elucidating standards). More significantly, subjective norm relates to learner's impression of the social traditions encompassing profound learning reception. Subsequently, friends' assessments are huge in molding the learner's individual aim to participate in profound learning for learning draws near. In this manner, learners decide to take part in profound learning on the grounds that their companions are likewise profound students, which were prescribed by these companions to the learners.

Notwithstanding an individual's attitude and subjective norms, another striking impact is their

perceived behavioral control according to the conduct. Perceived behavioral control is characterized as the individual's own impression of how simple or troublesome it is to play out a specific conduct [3]. As such, perceived behavioral control measures a people's discernment that they are adequately proficient, skillful, trained, and ready to play out a specific conduct. [2] expressed that the outlining of perceived behavioral control originated from the idea of self-viability. Perceived behavioral control is supported by control convictions that speak to the person's view of how unique encouraging or repressing components may show up when they play out the conduct, increased by the impression of the strength of each encouraging/restraining factor. This study in particular sees perceived behavioral control as learners' impression of usability or trouble in embracing the profound learning approach for scholarly purposes. In addition, it alludes to learner's impression of trouble or straightforwardness in executing the conduct of interest [45]. Accordingly, the greater capacity learners need to control these influencers, the almost certain their conduct aim to take part in profound learning will develop. Henceforth, perceived behavioral control is expanded when learners see that they have more certainty and options than likely hurdles.

III. METHODOLOGY

The rationale of using TPB as the underlying theory for this study is that the theory can interpret all human behaviors, given the condition that the individual possesses self-control over several attainable components. These components are defined as behavioral attitude, subjective norms, and perceived behavioral control [2]. Hence, in Figure 1, we relate the components of the TPB model with our main objective, where the behavior under study is intention to engage in deep learning, whereas the attainable elements are students' attitude, subjective norms (feelings of significant others when the student is engaged in deep learning), and perceived behavioral control (student's judgment on his ability to be engaged in deep learning).

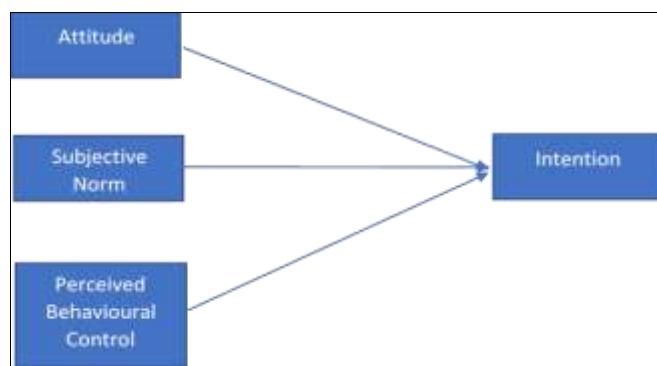


Figure 1. Research Framework

A total of 171 respondents from four courses consisting of Elementary Statistics (SQQS 1013), Business Mathematics (SQQM 1073), Research Method 1 (SQQP 3073), and Business Research Method (BPMN 3143) participated in the survey. Students were asked on items pertaining to their intention to engage in deep learning such as: "I usually work on paper or project that requires integrating information from various sources" as well as items pertaining to components predicting their intention such as "I seek advice from my mentor for my learning" and "I believe that I can apply what I have learned in real life". The questionnaire items used in the study is a modification of items from previous literature from <https://scholarworks.iu.edu/dspace/bitstream/handle/2022/24141/Measuring%20deep%20approaches%20to%20learning%20using%20the%20National%20Survey%20of%20Student%20Engagement.pdf?sequence=1&isAllowed=y>. A 5-point Likert scale range from 1 (strongly disagree) to 5 (strongly agree) is used to measure the level of agreement towards the given statement. Table 1 in the next section provide the descriptive statistics for all the items in the questionnaire survey.

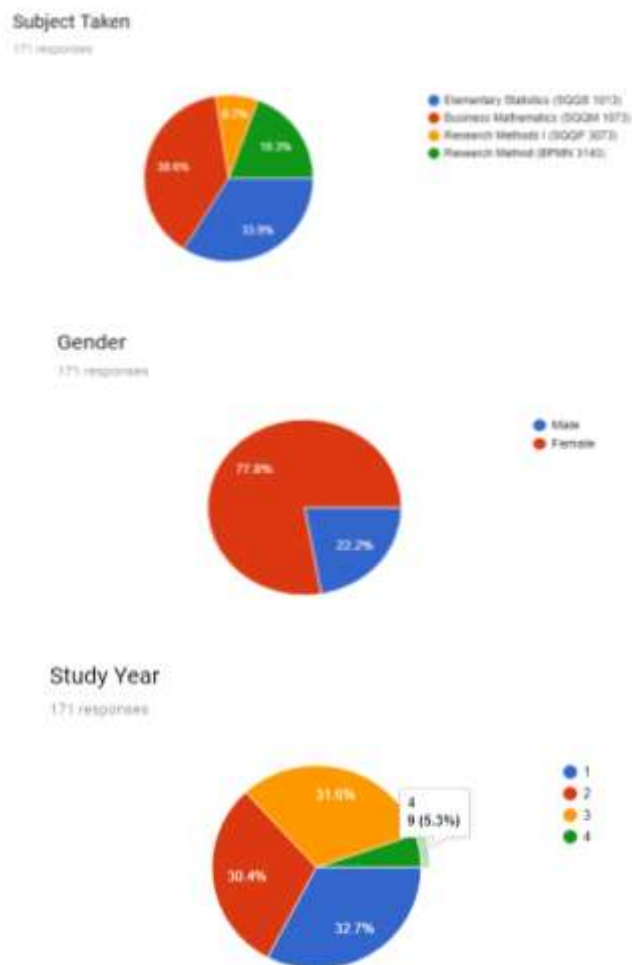
An online survey was carried out in our classes using Google Form via the link <https://bit.ly/2jcZpuP>. Data was collected from 171 undergraduate respondents who gave their views on items measuring their attitude towards deep learning, the level of norms' influences towards their deep learning, the level of confidence they have in their ability to conduct deep learning and finally, their intention to engage in deep learning. The period for data collection was one week and each respondent was given approximately 10 minutes to complete the survey.

The data collected was then being analyzed using IBM SPSS 20.0. Below, we present the descriptive analysis, analyzed by the descriptive analysis function provided by Google Form, along with SPSS which was used to address data screening, as well as multiple regression analysis. The findings from SPSS will be discussed first.

IV. RESULTS AND DISCUSSION

4.1. Descriptive statistics, reliability coefficients and correlations.

The ratios of male to female were approximately 1: 4. Based on Figure 2, we can see that the percentage of the groups from year 1, year 2 and year 3 were similar which was about 31% respectively, while the rest from year 4 was less than 10%. According to the result, we found that more than half of the students obtained the CGPA of more than 3.00 but less than 3.5, and only one student was under performing (CGPA less than 2.5).



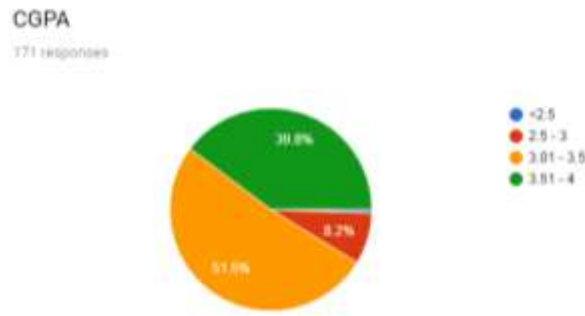


Figure 2: Students' Background

Table 1 below presents the descriptive statistics for the questionnaire items. Attitude towards deep learning was measured using 4 items which has a mean of between 3.4 to 3.75 with the range of standard deviation between .72 to 0.95. Subjective norm was measured with 2 items with a mean between 3.2 to 3.85 and a standard deviation between .85 to 1.14. In the similar vein, perceived behavioral control was measured with 4 items which has a mean of 3.7 to 4.0 and standard deviation between .78 to .85. Finally, intention was measured using 5 items and the mean values range from 3.63 to 3.70 with a standard deviation of .72 to .90.

Table 1. Descriptive statistics for questionnaire items

Variable	Items	Mean	Std Deviation
Attitude	ATT1 I analyze the basic elements of an idea, experience or theory in depth	3.702	.7186
	ATT2 I fully utilize the learning facilities (library, study room and etc.) provided by the university.	3.404	.9492
	ATT3 I always put together ideas or concepts from different courses.	3.637	.7879
	ATT4 I pay full attention and imaging the issue when someone is presenting their work.	3.749	.7753
Subjective Norm	SN1 I discuss my lessons with others outside of class (senior, other lecturers, friends and etc.)	3.854	.8518
	SN2 I seek advice from my mentor for my learning.	3.193	1.144
Perceived Behavioral Control	PBC1 I believe that I can apply what I have learned in real life.	3.912	.7885
	PBC2 I enjoy completing a task that require a lot of thinking and effort.	3.801	.8514
	PBC3 I understand the subject learned in depth at this moment.	3.772	.7750
	PBC4 I examine my strengths and weaknesses on certain topics.	4.035	.7814
Intention	INT1 I organize ideas and information into more complex relationships.	3.632	.7186
	INT2 I apply theory or concept to practical problems.	3.684	.8005

INT3	I am willing to try more complex questions	3.696	.8616
INT4	I tend to search for extra information apart from what my lecturer provided.	3.708	.9055
INT5	I usually work on paper or project that requires integrating information from various sources.	3.655	.7770

The descriptive statistics for all the variables are presented in Table 2 along with the correlation matrix. All the predictors are found to be positively correlated with the outcome variable (attitude $r = .693$, subjective norm $r = .577$, perceived behavioral control $r = .699$, all $ps < .01$)

Table 2. Construct intercorrelations and scale reliability values

Variable	No of items	Mean	SD	Attitude	Subjective Norm	Perceived Behavioral Control	Intention
Attitude	4	3.6	.58	.681			
SN	2	3.5	.83	.577**	.514		
PBC	4	3.9	.64	.699**	.457**	.805	
Intention	5	3.7	.60	.693**	.564**	.665**	.786

** . Correlation is significant at the 0.01 level (2-tailed).

Coefficient alpha are presented along the diagonal

4.2. Multiple Linear Regression

The multiple regression analysis on 171 responses yielded encouraging results as exhibited in Table 3. Overall, the model was significant; indicating that the three proposed predictors (attitude, subjective norms and perceived behavioral control) did explain students' intention to engage in deep learning. Specifically, the predictors explained 75.9% of the variances of students' intention to engage in deep learning.

The first hypothesis was: Attitude is related to students' intention to engage in deep learning. The result suggest that attitude is positively related to intention to engage in deep learning ($\beta = .336$, $p < 0.05$) indicating that the better the attitude of the student towards deep learning, the stronger their intention to engage in deep learning. The second hypothesis postulated that subject norm is related to intention to engage in deep learning. The result reveals that subjective norm is positively related to intention to engage in deep learning ($\beta = .220$, $p < 0.05$) suggesting that peer influence does play a role in influencing engagement in deep learning. Particularly if a group of students are interested in deep learning, it will exert an effect on counterparts that has not engage in deep learning. Finally, the last hypothesis postulated that perceived behavioral control is related to intention to engage in deep learning. The regression results suggest that perceived behavioral control is positively associated with intention to engage in deep learning. This result implies that if a student is confident on himself/herself on deep learning, his/her intention to engage in deep learning will be much higher than those who has exert lower locus of control on deep

learning.

All three predictors were positive and significantly contributing to students' intention to engage in deep learning. Nonetheless, detailed analysis suggests that none of the predictors appeared to have a stronger effect over the others in explaining the outcome variable.

Table 3. Multiple Regression Analysis (Coefficients)

Variable	β	Std. Error	t	p
ATT	.336	.080	4.354	.000
SN	.220	.045	3.546	.001
PBC	.329	.067	4.647	.000

$R^2 = .759$, Adjusted $R^2 = .568$, $F(3,170) = 75.490$, $p < 0.001$

V. CONCLUSION

As a conclusion, this study contributes to the development of educational field in two-fold. First, this study incorporates theory from psychology and business fields, into the education field. The applicability of the Theory of Planned Behavior in explaining students' intention to engage in deep learning suggests that students' learning intention are somewhat influenced by their behavioral beliefs, normative beliefs, and control beliefs. Second, the findings of this study provide educators with the required knowledge to better design their curriculum such that the deep learning approach is embedded subconsciously and indirectly through the execution of the syllabus. This in turn, will cultivate and facilitate students' deep learning without them 'realizing' it, thus transforming them from performance-oriented learners towards learning-oriented learners.

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REFERENCES

- [1] Ajzen, I. (1988), Attitudes, Personality, and Behavior, Open, Milton-Keynes.
- [2] Ajzen, I. The theory of planned behavior, Organizational Behavior and Human Processes, Vol.50, No.2, 129-211, 1991.
- [3] Ajzen, I. (2005). Attitudes, personality, and behavior (1st ed.). Maidenhead, Berkshire, England: Open University Press.
- [4] Amirali, M., Huon, G., & Kevin, B. Approaches to studying and academic performance in short essay exams, Higher Education, Vol.47, No.7, 161-179, 2004.
- [5] Asikainen, H. Successful learning and studying in biosciences: exploring how students' conceptions of learning, approaches to learning, motivation and their experiences of the teaching-learning environment are related to study success. Doctoral dissertation, 2014.
- [6] Asikainen, H., & Gijbels, D. Do students develop towards more deep approaches to learning during studies? A systematic review on the development of students' deep and surface approaches to learning in higher education, Educational Psychology Review, Vol.29, No.2, 205-234, 2017.

- [7] Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. Using student-centered learning environments to stimulate deep approaches to learning: factors encouraging or discouraging their effectiveness, *Educational Research Review*, Vol.5, No.3, 243-260, 2010
- [8] Biggs, J. *Student approaches to learning and studying*. Melbourne: Australian Council for Educational Research, 1987.
- [9] Biggs, J. *From theory to practice: a cognitive systems approach*. Higher Education Research and Development. Vol.12, No.1, 73-85, 1993.
- [10] Biggs, J. Enhancing learning: a matter of style or approach. In R. J. Sternberg & L. Zhang (Eds.), *Perspectives of thinking, learning, and cognitive styles* (pp. 73–102). Mahwah: Lawrence Erlbaum Associates, 2001.
- [11] Biggs, J. & Tang. C. *Teaching for quality learning at university*, 4th ed. Maidenhead: Open University Press, 2011.
- [12] Broadhead-Fearn, D. and White, K.M. The role of self-efficacy in predicting rule-following behaviors in shelters for homeless youth: a test of theory of planned behavior, *The Journal of Social Psychology*, Vol.145, No.3, 307-325, 2006.
- [13] Buchan, H.F. Ethical decision making in the public accounting profession: an extension of Ajzen's theory of planned behavior, *Journal of Business Ethics*, Vol. 64, No. 2, 165–181, 2005.
- [14] Coertjens, L., Vanthournout, G., Lindblom-Ylänne, S., & Postareff, L. Understanding individual differences in approaches to learning across courses: A mixed method approach. *Learning and Individual Differences*, Vol.51, 69-80, 2016.
- [15] Cuthbert, P. F. The student learning process: Learning styles or learning approaches? *Teaching in Higher Education*. Vol. 10, 235-249, 2005.
- [16] Dolmans, D., Loyens, S., Marcq, H., & Gijbels, D. (2016). Deep and surface learning in problem-based learning: a review of the literature. *Advances in Health Science Education*, 21(5), 1087-1112. <https://doi.org/10.1007/s10459-015-9645-6>
- [17] Entwistle, N. *Teaching for Understanding at University: Deep Approaches and Distinctive Ways of Thinking*, Palgrave Macmillan, 2009.
- [18] Entwistle, N., McCune, V., & Walker, P. Conceptions, styles and approaches within higher education: Analytic abstractions and everyday experience, *Perspectives on thinking, learning and cognitive styles*, 103-106, 2001.
- [19] Entwistle, N., McCune, V., & Hounsell, J. Investigating ways of enhancing university teaching-learning environments: Measuring student's approaches to studying and perceptions of teaching, *Powerful learning environments: Unravelling basic components and dimensions*, 89-107, 2003.
- [20] Entwistle, N and Ramsden, P. (foreword by William and Perry, 2015). *Understanding Student Learning*. New York: Routledge Revivals.
- [21] Freeney, Y., & O'Connell, M. (2012). The predictors of the intention to leave school early among a representative sample of Irish second-level students. *British Educational Research Journal*, 38(4), 557–574. Retrieved from <http://dx.doi.org/10.1080/01411926.2011.563838>
- [22] Gibbs, G. *Learning by doing: A guide to teaching and learning methods*, Further Education unit. Oxford Polytechnic: Oxford. 1988.
- [23] Gordon, C. & Debus, R. Developing deep learning approaches and personal teaching efficacy within a preservice teacher education context, *Journal of Educational Psychology*, Vol.72, No.4, 949-962, 2002.
- [24] Haarala-Muhonen, A., Ruohoniemi, M., Parpala, A., Komulainen, E., & Lindblom-Ylänne, S. How do the different study profiles of first-year students predict their study success, study progress and the completion of degrees? *Higher Education*, Vol.74, No.6, 949-962, 2017.

- [25] Hailikari, T., Tuononen, T., & Parpala, A. Students' experiences of the factors affecting their study progress: Differences in study profiles, *Journal of Further and Higher Education*, Vol.42, No.1, 1-12, 2018.
- [26] Hole, Y., & Snehal, P. & Bhaskar, M. (2018). Service marketing and quality strategies. *Periodicals of engineering and natural sciences*,6 (1), 182-196.
- [27] Hole, Y., & Snehal, P. & Bhaskar, M. (2019). Porter's five forces model: gives you a competitive advantage. *Journal of Advanced Research in Dynamical and Control System*, 11 (4), 1436-1448.
- [28] Houghton, W. (2004) *Engineering Subject Centre Guide: Learning and Teaching Theory for Engineering*. Academics (Loughborough: HEA Engineering Subject Centre).
- [29] Hounsell, D., & Hounsell, J. Teaching-learning environments in contemporary mass higher education. In N. J. Entwistle & P. D. Tomlinson (Eds.), *Student Learning and University Teaching*. British Journal of Educational Psychology Monograph Series II, Number 4. (pp. 91-111) Leicester, UK: British Psychological Society, 2007.
- [30] Huang, J-H., Jin, B-H. and Yang, C. Satisfaction with business-to-employee benefit systems and organizational citizenship behavior: an examination of gender difference, *International Journal of Manpower*, Vol.25, No.2, 195-210, 2004.
- [31] Kaiser, G.F. A moral extension of the theory of planned behavior: norms and anticipated feeling of regret in conservatism, *Personality and Individual Differences*, Vol.41, 71-91, 2006.
- [32] Kuh, G. D., Kinzie, J., Buckley, J. A., Bridges, B. K., & Hayek, J. C. Piecing together the student success puzzle: Research, propositions and recommendations: ASHE Higher Education Report, Vol.116, 2011.
- [33] Lindblom-Ylänne, S., Saariaho, E., Inkinen, M., Haarala-Muhonen, A., & Hailikari, T. Academic procrastinators, strategic delayers and something betwixt and between: an interview study, *Frontline Learning Research*, Vol.3, No.2., 47-62, 2015
- [34] Lindblom-Ylänne, S., Parpala, A., & Postareff, L. What constitutes the surface approach to learning in the light of new empirical evidence? *Studies in Higher Education*. Vol.44, No.12, 2183-2195, 2019.
- [35] Lizzio, A., Wilson, K., & Simons, R. University students' perceptions of the learning environment and academic outcomes: Implications for theory and practice, *Studies in Higher Education*, Vol.27, 27-52, 2002.
- [36] Marton, F., & Säljö, R. On qualitative differences in learning: I - outcome and process, *British Journal of Educational Psychology*, Vol.46, 4-11, 1976.
- [37] Prosser, M., & Trigwell, K. *Understanding learning and teaching: the experience in higher education*. Buckingham: Society for Research into Higher Education, 1999
- [38] Ramsden, P. (2003). *Learning to teach in higher education* (2nd ed.). London: RoutledgeFalmer.
- [39] Richardson, M., Abraham, C., & Bond, R. Psychological correlates of university students' academic performance: a systematic review and meta-analysis. *Psychological Bulletin*, Vol.138, No.2, 353-387, 2012.
- [40] Rubin, M., Scevak, J., Southgate, E., Macqueen, S., Williams, P., & Douglas, H. Older women, deeper learning, and greater satisfaction at university: Age and gender predict university students' learning approach and degree satisfaction, *Journal of Diversity in Higher Education*, Vol.11, No.1, 82, 2018.
- [41] Schmitt-Figueiró, P. & Raufflet, E. Sustainability in higher education: a systematic review with focus on management education, *Journal of Cleaner Production*, Vol.106, 22-33, 2015.
- [42] Simpson, M., & Ure, J. *Studies of differentiation practices in primary and secondary schools*. Scottish Office Education Department Research and Intelligence Unit, 1994.
- [43] Spada, M. M., & Moneta, G. B. A metacognitive-motivational model of surface approach to studying,

Educational Psychology, Vol.32, No.1, 45-62, 2012.

- [44] Sun, P-C., Lee, C-C., Yeh, D. and Wu, S-Y. Investigating teachers' adoption of information technology in teaching: a comparative analysis approach, *International Journal of Innovation and Learning*, Vol.4, No.3, 237-254. 2007.
- [45] Taylor, R. (2014). Using the theory of planned behaviour to understand students' subject choices in post-compulsory education. *Research Papers in Education*, 30(2), 214–231. doi:10.1080/02671522.2014.880732
- [46] Trigwell, K., & Prosser, M. Towards an understanding of individual acts of teaching and learning, *Higher Education Research and Development*, Vol.16, No.2, 241-252, 1997.
- [47] Valtonen, T., Kukkonen, J., Kontkanen, S., Sormunen, K., Dillon, P. and Sointu, E. (2015), "The impact of authentic learning experiences with ICT on pre-service teachers' intentions to use ICT for teaching and learning", *Computers & Education*, Vol. 81, pp. 49-58.
- [48] Warburton, K. Deep learning and education for sustainability. *International Journal of Sustainability in Higher Education*, Vol.4, No.1, 44-56, 2003
- [49] Watkins, D. Correlates of approaches to learning: a cross-cultural meta-analysis. In: R. Sternberg & L.-F. Zang (Eds.), *Perspective on thinking, learning, and cognitive styles* (165– 196). Mahwah: Lawrence Erlbaum Associates, 2001.