6<sup>th</sup> International Conference on University Learning and Teaching (InCULT 2012)

# The Relationship Between Learning Approaches And Academic Achievement Among Intec Students, Uitm Shah Alam

Hanin Naziha Hasnor[a], Zaiton Ahmad[b], Norshidah Nordin*[c]

*abcFaculty of Education, Universiti Teknologi MARA, Shah Alam 40200, Selangor, Malaysia*

## Abstract

Malaysian universities nowadays aspire to produce graduates who are knowledgeable, equipped with problem-solving and critical thinking skills. Hence, educators are constantly striving to find teaching strategies that inculcate meaningful learning among their students, so that they are ready to join the workforce and solve real-world problems. Nevertheless, most students often emphasise on memorising rather than understand what they are learning. Therefore, to what extend students' learning approaches could enhance their academic performance? The main aim of this study was to examine the influence of three different learning approaches which are Deep Approach, Surface Approach and Strategic Approach on students' academic achievement among the American Programme students of International Education College (INTEC), UiTM Shah Alam. The study also investigated the relationship between the variables involved and determined the predictors of academic achievement. The design of this research is descriptive in nature and questionnaires were used to obtain information on students' preferred learning approaches and their level of academic achievement. A total of 233 students responded to the questionnaire. The findings show that students are more prone to use Deep Approach to studying. The findings also revealed that there is an inverse relationship between Surface Approach and academic achievement. Implications for teaching and learning were also discussed.

## 1. Background of the study

Malaysian universities nowadays aspire to produce graduates who are knowledgeable, equipped with problem-solving and critical thinking skills. Hence, educators are constantly striving to find teaching strategies that

_____

meaningful learning among their students, so that they are ready to join the workforce and solve real-world problems. Nevertheless, in Malaysia, particularly in secondary school and higher education, most students often emphasise on memorising which characterise the surface approaches instead of learning to understand a certain

* Corresponding author: Tel. +6013 3373410; fax: +60355227412.
*E-mail address:* shidah147@gmail.com

concept, thus they are unable to apply a certain concept in their real life as a result of memorising and not fully understanding what they are learning. This scenario could definitely affect their overall academic achievement too. This is simply because Malaysian education system has created a misconception whereby students believe that by solely memorising theories is enough to pass a certain subject. This learning approach may help the students to score straight 'A+' in their SPM examination, but they do not necessarily excel in pre-university programs and undergraduates studies. Thus, in order for them to be a better graduate, Malaysian students are encouraged to go beyond the rote memorisation skills and develop deeper research and analytical skills with the aim of achieving high quality academic achievement which relates more to deep approach of learning.

As students enter primary school, secondary school and higher education, teachers will be the one responsible in guiding them on how they should study. However in Malaysia today, many teachers are not fully aware about the significance of understanding students' approaches to learning. University teachers certainly need to be aware that their methods of presenting knowledge and ideas often have an unidentifiable impact on the students learning process and they students' learning outcomes (Biggs, 1999; Prosser and Trigwell, 1999; Ramsden, 1992 cited in Entwistle and McCune, 2004). Therefore, teachers and educators need to teach and help students to learn to maximise their unlimited potential to grow and progress in their academic studies and as a whole, and the teaching philosophies of lecturers need to be directed into increasing the positive learning outcomes of students. In other words, to produce critical thinkers, lecturers need to adopt teaching strategies that challenge the students to think likewise on a regular basis. In addition, educators, teachers and students in Malaysia need to be reminded of our education policy goals. Taken from Smart School Blueprint 1997 (Government of Malaysia, 1997), it is stated that students are required to employ greater responsibility for their own learning. Malaysian educational system will also need to be transformed to an education that arouses curiosity, encourages critical thinking, and stimulates creativity in all students based on their abilities and learning approaches, by digressing from exam-based learning designed for the moderate student. Therefore, due to arguments related to students' learning approaches and its effect on academic performance, this study seek to identify the American Programme students' learning approaches in INTEC, UiTM Shah Alam and investigate its relationship with their learning outcomes. It is also essential for educators to recognize their students' learning approaches early as they could be able to help the students improve their academic weaknesses and suggest strategies for them to manage and adapt their learning at higher learning institutions in United States.

## 2. Literature review

Approach to learning is a wonderful idea by Marton and Säljö (1976) in the late 1970s which then became the start for 'student approaches to learning' (SAL) theory (Biggs, 1993; Biggs, Kember, and Leung, 2001; Entwistle & Waterston, 1988). The term learning approach refers to the student's intentions when facing a learning situation and the way they do their assignments, assessed by using questionnaires (Watkins, 2001 cited in Rodriguez & Cano, 2007). Generally, two widely used concepts in educational research on approaches to learning namely 'surface' approach and 'deep' approach have been identified (Marton and Säljö, 1976). Students who employed surface approach focused on rote-learning and memorization of the text as they seek to reproduce the course material. In contrast, those who employed deep approach sought to understand the text's purpose, meaning, and significance. Deep and surface approaches had developed into fairly regular learning behaviours as these approaches were apparent across different learning tasks (Entwistle et al., 1979 cited in Entwistle and McCune, 2004). Other than these two fundamental concepts of approaches to learning, Entwistle (2001) also mention Biggs's (1979) and Ramsden's (1979) studies, who later found that students could also have the wish to attain the highest grades by employing a strategic or achieving approach to their studies. The strategic approach can be included in either deep or surface processing, depending on the requirements of the context (Makinen 2003, cited in Gijbels et al, 2005).

According to Papinczak et al. (2008), students who adopt deeper approaches are task focussed and they are associated with an intrinsic interest in the subject where their intention is to comprehend the learned content, seek self-fulfillment from the material, and will usually results in a deep level of understanding if carried out

systematically (Entwistle et al., 2001). To reach this active learning processes, deep approach students will monitor and reshape their thoughts in their study material, and critically connecting it to other experiences and ideas, integrating formal knowledge with individual experience, and relating facts to conclusions (Ballantine et al., 2008; Baeten et al., 2008; Cano, 2007). Furthermore, possibly appropriate strategies that are most favourable for creating meaning are reflecting, combining new knowledge with old or using information taken from other resources, relating ideas and looking for patterns (Kyndt, 2011). According to Gordon & Debus (2002) surface approaches are seen as being motivated by the learner's aspiration to meet minimum requirements with less effort and involvement, thus lead to a low quality learning outcomes. The intention behind a surface approach to learning is limited to fulfilling course demands and avoids failure with the least individual attempt and involvement (Baeten et al., 2008; Cano, 2007) where the students only view the course as isolated knowledge (Entwistle 1997; Marton and Saljo 1997).While**,** strategic approach refers to the learner's motive to maximise performance to excel and gain the highest achievable grades by using organised study skills and managing time wisely (Entwistle & Ramsden, 1983; Biggs and Moore, 1993). In addition, the students' study behaviours are heavily moderated by the requirements of the assessment task, but are generally highly structured and efficient (Gordon & Debus, 2002).

Cano (2007) revealed that both intelligence and approaches to learning are significant factors in predicting students' academic achievement. Cano's (2007) research found that high usage of deep approach to learning with general intelligence will resulted in a better academic performance. This is because students with successful academic achievement are more prone to utilize a deep approach to learning than those who are less successful (Zeegers, 2001, cited in Ali and Sebai, 2010). In addition, Entwistle, Tait, & McCune, (2000) stated that in the subsequent years of a degree course especially when the evaluation system directly rewards a display of conceptual understanding, students will demonstrate high scores on the deep approach which will relate to academic success. Byrne et al. (2002), Duff (2004) and Tan and Choo (1990) cited in Ballantine et al., (2008), all stated that students who adopt desirable learning approaches, especially by scoring higher on deep approach and strategic approach scales, achieve high level of academic success. Other studies also corroborate the conclusions that deep and strategic approaches to learning tend to be correlated with academic accomplishment (Cano 2005, Watkins 2001, cited in Lietz & Matthews, 2006). Unfortunately, not all results show a significant relationship between a deep approach to learning and the quantitative scores of the learning outcome (Byrne, Flood, & Willis, 2004; Gijbels et al., 2005; Kember et al., 1995). Some studies found that deep approach did not result in higher grades on the evaluation (Minbashian et al., 2004; Trigwell & Prosser, 1991). Trigwell and Prosser (1991) cited in Kyndt (2011) studied the relationship between the observed approaches to learning and the academic achievement of 122 first-year students in a nursing course. They found a positive correlation between a deep approach to learning and high qualitative levels in the academic achievement, however they found no such correlation to quantitative differences in outcome. In this respect, Dochy (2005) pointed out the fact that a deep approach to learning was rarely rewarded by the evaluation system. The reason therefore may be that the evaluation mainly assesses knowledge for which the use of a surface approach suffices to be successful (Scouller, 1998).

Hence, due to the external pressure such as of internationalization and globalization, the International Education Centre (INTEC) of Universiti Teknologi MARA (UiTM) is extremely concerned to provide its students with excellent academic performance. Furthermore, INTEC was responsible to prepare its students' planning for overseas education with knowledge and skills that were required before continuing their education abroad. Therefore, these students have to be adequately equipped with the ability, knowledge and skills to understand and communicate effectively. However, a great deal of knowledge about tertiary students learning approaches and academic achievement have been accumulated in recent years but very little is known about their use in the local context. Thus, this study, aims to fill such gaps by answering one overriding question that is: Do learning approaches influence academic achievement among The INTEC students of Shah Alam?

## 3. Objectives of the study

1. to examine the level of academic achievement among the students' of INTEC, UiTM Shah Alam.
2. to examine the learning approaches used among the students' of INTEC, UiTM Shah Alam.
3. to examine the relationship between students' learning approach and their academic achievement among the INTEC students.

## 4. Methodology

This study employed descriptive survey using cross sectional research design. A self report questionnaire was used to gather information related to the objectives of the study. The samples were drawn from the American Foundation Program at INTEC, Shah Alam. Two hundred and fifty one (251) students were asked to complete the questionnaires. Out of them, 233 respondents returned the completed questionnaires. Students' approaches to learning (SAL) in higher education students in this study were assessed using Entwistle et al.'s (2000) ASSIST research instrument is also known as *Approaches and Study Skills Inventory for Students*. This instrument was developed through ASI (*Approaches to Studying Inventory)*, intended to extend the approaches to studying and description of teaching by including additional subscales. Richardson's (2000) re-examine of SAL inventories identifies ASSIST and earlier versions of the instrument as the most accepted preference among researchers investigating students' approaches to learning. The instrument consists of three higher-order scales or 'defining' approaches to learning which is deep approach, surface approach, and strategic approach, and 13 lower-order sub-scales. The respondents are asked to indicate their degree of agreement with the statements, scored on a seven-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly Agree). Coefficient correlation was used to analyze the relationships between each independent variable (students' learning approaches) towards the dependable variable which is the respondents' academic achievement and Guildford's (1956) Rule of Thumb was applied to interpret the correlation between variables.

## 5. Findings and Discussions

*5.1 Research objective 1: To examine the level of academic achievement among the students' of INTEC, UiTM Shah Alam.*

Table 1: *Level of Academic Achievement*

| Levels of Academic Achievement | | Frequency | Percent |
|---|---|---|---|
| **Levels** | | | |
| Low | (< 1.99) | - | - |
| Moderate low | (2 – 2.49) | 2 | 9 |
| Moderate high | (2.5 – 3.49) | 171 | 74.3 |
| High | (> 3.5) | 57 | 24.8 |
| **Total** | | **230** | **100.0** |

Mean = 3.24      Minimum = 1.00      Maximum = 7.00      Std. Deviation = 0.45

Table 1 presents the respondents' level of academic achievement. The data shows that most of the respondents have average academic success with a percentage of 74.3% ranging from 2.5 – 3.49, while 24.8% of respondents have high CGPA ranging from 3.50 – 4.00. The remaining 9% have moderate low academic achievement ranging from 2 – 2.49. None of the respondents are in the low level category where the CGPA is

below 1.99. This finding reported that more than half of the respondents from the American Degree Programme have moderate range of CGPA.

*5.2 Research objective 2: To examine the learning approaches used among the students' of INTEC, UiTM Shah Alam.*

Table 2:  *Learning approaches among students of INTEC*

| Students' Learning Approaches | Mean | Std. Deviation |
|---|---|---|
| Surface Approach | 4.5283 | .87388 |
| Deep Approach | 5.0848 | .71298 |
| Strategic Approach | 4.8782 | .75431 |

Table 2 shows the data on the types of learning approaches used among students of INTEC. The items were answered based on a seven-point Likert-type scale (1 = Strongly Disagree; 7 = Strongly Agree). The findings show that the majority of the respondents use *Deep Approach* (*m* = 5.0848, *sd* = 0.71298), followed by *Strategic Approach* (*m* = 4.8782, *sd* = 0.75431), and ultimately *Surface Approach* (*m* = 4.5283, *sd* = 0.87388). It can be inferred from the findings that most of the respondent have the intention to understand what they were studying (*deep approach*) and they want to achieve good grades to maximize the chances for academic success (*strategic approach*). This suggests that INTEC students need to do well academically and get good grades in their exam upon completion of their foundation studies to successfully meet sponsors' academic requirement in order for them to pursue their education at prestigious universities overseas. Other studies also appears to verify the conclusions that deep and strategic approaches to learning are likely to be associated with academic achievement (Byrne et al. 2002; Cano 2005, Duff, 2004; Watkins 2001, cited in Ballantine et al., 2008). This is also in line with Cano's (2007) research that found high usage of deep approach together with general intelligence will result in high academic success. Further descriptive analysis of students learning approaches were conducted as Table 3

Table 3: Dimensions of studnets'learning approaches

| Students' Learning Approaches | Mean | Std. Deviation |
|---|---|---|
| **Surface Approach** | | |
| Lack of purpose | 4.3475 | 1.39554 |
| Unrelated memorising | 4.3209 | 1.27495 |
| Syllabus boundness | 4.7270 | .91163 |
| Fear of failure | 4.7443 | 1.08547 |
| **Deep Approach** | | |
| Seeking meaning | 5.0438 | .85921 |
| Relating ideas | 5.0930 | .83935 |
| Use of evidence | 5.1774 | .82858 |
| Interest in ideas | 5.0000 | .87708 |
| **Strategic Approach** | | |
| Organised studying | 4.5806 | .95885 |
| Time management | 4.4558 | 1.06468 |
| Alertness to assessment demands | 5.1674 | .95616 |
| Achieving | 5.0760 | .84539 |
| Monitoring effectiveness | 5.1044 | .87447 |

Table 3,  presents the data on further descriptive analysis of the respondents' learning approaches, the finding shows that the 7 highest sub scales that the student use is in the deep approach and the strategic approach

which is the *Use of Evidence* (*m* = 5.1774, *sd* = 0.82858), followed by two sub-scales in strategic approach which are *Alertness to Assessment Demands* (*m* = 5.1674, *sd* = 0.95616), *Monitoring Effectiveness* (*m* = 5.1044, *sd* = 0.87447), *Relating Ideas* (*m* = 5.0930, *sd* = 0.83935)*, Achieving* (*m* = 5.0760, *sd* = 0.84539)*, Seeking Meaning* (*m* = 5.0438, *sd* = 0. 85921)*,* and *Interest in Ideas* (*m* = 5.0000, *sd* = 0. 87708)*.* As shown above, the respondent seems to focus their interest towards the assessment system such as being alert to the demands of the assessment, monitoring their effectiveness and achieving, and also towards the academic content as they score higher on the deep approach subscales. This is similar to Entwistle's (2000) statement that deep approach students show interest in the content, while strategic approach user show the alertness to assessment demands. In essence, this finding shows that INTEC students truly aim at maximizing their performance to excel, and at the same time they also use various strategies to help them understand their studies. As a matter of fact, research also recommends combining deep and strategic approaches together as it is more academically rewarding (Lindblom-Ylanne and Lonka, 1999; Mattick et al., 2004; McManus et al., 1998, cited in Papinczak et al., 2008). While the 6 lowest sub scales that the student use is in the surface approach and two sub-scales from the strategic approach which is *Unrelated Memorising* (*m* = 4.3209, *sd* = 1.27495), *Lack of Purpose* (*m* = 4.3475, *sd* = 1.39554), *Time Management* (*m* = 4.4558, *sd* = 1.06468), *Organised Studying* (*m* = 4.5806, *sd* = 0.95885), *Syllabus Boundness* (*m* = 4.7270, *sd* = 0.91163), and *Fear of Failure* (*m* = 4.7443, *sd* = 1.08547).

*5.3 Research Objective 3: To examine the relationship between students' learning approach and their academic achievement among the INTEC students.*

Table 4: *Correlation Matrix between Students' Learning Approaches on Academic Achievement*

|                    | 1       | 2       | 3     | 4    |
|--------------------|---------|---------|-------|------|
| **CGPA**           | 1.00    |         |       |      |
| **Surface Approach** | -0.213** | 1.00  |       |      |
| **Deep Approach**  | -0.052  | 0.388** | 1.00  |      |
| **Strategic Approach** | 0.014 | 0.293** | 0.628 | 1.00 |

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

Table 4 presents correlation between students' learning approaches on academic achievement, whereas Table 4.6 shows the correlation strength according to Guilford's Rule of Thumb (Guilford, 1956). By using Pearson Correlation to determine the strength of the relationship between the independent variables and academic achievement, it was found that only *Surface Approach* shows correlation with academic achievement. As can be seen, *Surface Approach* shows an inverse relationship with their *r* and *p* values (r= -0.213, p= 0.000) respectively. This proposes that the more the students use *Surface Approach* in their studies, the lower their academic achievement would be. This is parallel with Watkins (2001) who found that surface approaches to learning was significantly negatively correlated with students' grades in his cross-cultural meta-analysis study investigating the relationship between students' approaches to learning and their academic achievement. In the field of mathematics, Crawford and colleagues (1998) cited in Gijbels et al. (2005), found relatively high scores on the surface approach subscale of 300 first-year students that were related to low marks in the final exam in their first year mathematics course. On another note, in the biology field, Hazel, Prosser, and Trigwell (1996) cited in Gijbels et al. (2005), also analyse the relationship between students' approaches to learning and academic achievement. They divided 272 students that were involved in the study into two clusters and found that there was a relationship between low outcome measures, low scores on deep approaches and high scores on surface approaches in the first cluster. In contrast, the second cluster showed high outcome scores related to low surface approach scores and high deep approach scores. On the other hand, based on Guilford's Rule of Thumb (Guilford, 1956), *deep approach* and *strategic approach* illustrate almost negligible relationship. This is in line with Trigwell & Prosser, (1991) and Minbashian et al. (2004) who reported that deep approach to learning did not result in higher grades on the evaluation even though this approach was related to high quality learning outcomes.

## 6. Conclusions and implications

This study intends to examine the relationship between academic achievement and learning approaches**.** Findings from this study indicated that most American Programme students of INTEC, UiTM are prone to use *Deep Approach* and followed by *Strategic Approach*. In addition to that, further descriptive analysis of the students learning approach show the 7 highest sub scales that the student use is in the deep approach and the strategic approach and the 6 lowest subscales are in surface approach. Students who utilize deep approach in their studies aim to understand the meaning in the materials they were learning. They are intrinsically motivated, able to enjoy the learning task, and able to think critically (Biggs 2003; Rodríguez & Cano, 2006). On the other hand, respondents deploying strategic approach work hard to achieve good grades to maximize the opportunity for academic excellence. They give special attention to the requirement of the assessment and by monitoring the effectiveness of their study. Taken together, these results suggest that INTEC students have the intention to excel academically by understanding the content of the tasks to qualify themselves in universities abroad.

      The results show that there was no relationship between deep approaches and academic achievement. There was also no relationship between strategic approaches and academic achievement. Hence, both the result are in line with the study done by Minbashian et al., 2004; Trigwell & Prosser, 1991). What could be found interesting in this study was that only Surface Approach shows low correlation with academic achievement and it shows an inverse relationship. This implies that the more the respondents use Surface Approach in their studies, the lower their academic achievement would be. This finding suggests that students need to minimize the use of surface approach in order for them to have high CGPA. This finding is parallel with previous research which has shown that consequently students who adopt a surface learning approach are incline to have lower achievement level (Biggs, 2003; Prosser and Trigwell, 1999; cited in Birenbaum, 2007). Beaten et al. (2008) suggested one way to discourage surface approaches to learning and to gain high academic success is for educators to use portfolio in their assessment. Although deep approaches were expected to have strong correlation towards academic achievement, present study proves otherwise. Deep approach and strategic approach shows negligible relationship towards academic achievement. This finding is similar to Gijbels et al., (2005) and Byrne et al.'s (2004) findings where there is no significant relationship between a deep approach to learning and the quantitative scores of academic accomplishment. There are also other studies that support this finding whereby they found that deep approach did not result in higher grades on the evaluation (Minbashian, Huon & Bird, 2004; Trigwell & Prosser, 1991). This indicates that our evaluation system rarely rewards deep approach to learning and some assessment only assesses knowledge sufficient for the use of a surface approach.

  This study has certain limitations that need to be taken into account when considering its contribution. Firstly, this study employed only one instrument which is a self-report survey to gather data pertaining to the topic concern and no triangulation is made for this study, since it only focuses on a quantitative aspect. The findings of this study have a number of important implications for future research based on the conclusion and discussion presented earlier. First of all, the findings of this study have contributed to a better perceptive of the relationship between students' learning approaches and academic achievement. Using the right learning approach is essential in determining the student's learning outcomes. As the findings suggest that less usage of surface approach resulting in higher level of academic achievement, students need to reduce the use of unrelated memorising and syllabus boundness. They need to have a purpose and the right intention in their studies for their professional development and lifelong learning.Therefore, to help students to employ the right approach to learning, it is suggested that management of the institution to organise workshops or seminars to teach awareness to the students on the different approaches that they can utilize in their learning. It is also important that the students are aware that when they reproduce materials or memorise facts instead of understanding them, it can have a negative affect towards their CGPA result. Furthermore, teachers or educators also need to be aware that their teaching practices and the course design as it can affect the intention of the students. Teachers need to discourage the use of surface approach and design course that require the students to think critically, seek meaning, to understand their studies material and to be able to relate ideas with prior knowledge or their own experiences. Accordingly, educators must provide a learning environment where students develop a strong personal interest

this is because Warburton (2003) argues that a first step in reaching a deep learning is a high level of student commitment with the learning subject so that students are motivated to understand. Thus, by promoting or inducing deep approach to learning, it is hope that surface approach to learning can be reduced.

## References

Aaron, S. & Skakun, E. (1999). Correlation of students' characteristics with their learning styles as they begin medical school. Academic Medicine. Vol 74, No 3.

Ali, W. G. M., & Sebai, N. A. M. E. (2010). Effect of problem-based learning on nursing students' approaches to learning and their self directed learning abilities. *International Journal of Academic Research, 2*(4), 188-195.

Allie, S., Armien, M.N., Bennie, K., Burgoyne, N., Case, J., and Craig, T., et al. (2007). *Learning as acquiring a discursive identity through participation in a community: A theoretical position on improving student learning in tertiary science and engineering programmes.* Unpublished manuscript, Centre For Research In Engineering Education, Cape Town, South Africa, http://www.cree.uct.ac.za.

Baeten, M., Kyndt, E., Struyven, K., & Dochy, F. (2010). Using student-centred learning environments to stimulate deep approaches to learning: factors encouraging or discouraging their effectiveness. *Press Educational Research Review 2010*.

Baeten, M., Dochy, F., & Struyven, K. (2008). Students' approaches to learning and assessment preferences in a portfolio-based learning environment. Instructional Science, 36, 359–374.

Baeten, M. (2008). *The effects of contrasting learning environments on students' approaches to learning and students' learning outcomes, taking into account students' course experiences and student characteristics.* (Doctoral proposal). Faculty of psychology and educational sciences, Centre for Research on Teaching and Training. Retrieved from: ppw.kuleuven.be/cscap/doctoral%20proposal%20Baeten.doc

Ballantine, J. A., Duff, A., & McCourt Larres, P. (2008). Accounting and business students' approaches to learning: A longitudinal study. *Journal of Accounting Education, 26*(4), 188–201. Retrieved from: http://www.sciencedirect.com/science/article/pii/S0748575109000062

Biggs, J. B., Kember, D., & Leung, D. (2001). The revised two-factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology*, *71*(1), 133-149.

Birenbaum, M. (2007). Assessment and instruction preferences and their relationship with test anxiety and learning strategies. Higher Education, 53(6), 749–768. Retrieved from http://www.springerlink.com/content/v20lp5w5141r0612/

Bradford, K. (2001). Deep and Surface Approaches to Learning and the Strategic Approach to Study in Higher Education; Based on Phenomenographic Research. Retrieved on June 8, 2011 from http://www.arasite.org/guestkb.htm

Biggs, J.B. (1987). Student approaches to learning and studying. *Melbourne, Australia*: Australian Council for Educational Research

Cassidy, S. (2006). Learning style and student self-assessment skill. *Education and Training, 48* (2-3), 170-177.

Cano, J. (1999). The relationship between learning style, academic major, and academic performance of college students. *Journal of Agricultural Education, 40*(1), 30-37.

Cano, F. (2007). Approaches to learning and study orchestrations in high school students. *European Journal of Psychology of Education, 22*(2), 131 – 151.

Cano, F. (2005). Epistemological beliefs and approaches to learning: Their change through secondary school and their influence on academic performance. *British Journal of Educational Psychology, 75*, 203-221.

Chan, K. (2003) Hong Kong teacher education students' epistemological beliefs and approaches to learning, Research in Education, 69, 36–50. Retrieved from: http://www.manchesteruniversitypress.co.uk/uploads/docs/690036.pdf

Chan, K. W. (2007). Hong Kong Teacher Education, Students Epistemological Beliefs and their Relations with Conceptions of Learning and Learning Strategies. *The Asia Pacific Education Researcher.* 16, 199 – 214. Retrieved from: http://www.dlsu.edu.ph/research/journals/taper/pdf/200712/chan.pdf

Chang, Y. C. (2010). Students' perceptions of teaching styles and use of learning strategies. Masters Theses. University of Tennessee, Knoxville. Available online at http://trace.tennessee.edu/cgi/viewcontent.cgi?article=1835&context=utk_gradthes. Retrieved on 18th July 2011.

Dale, C. and McCarthy, P. (2006) I like your style: The learning approaches of leisure, tourism and hospitality students studying generic modules, Journal of Hospitality, Leisure, Sport and Tourism Education, 5 (2), 48-58. Retrieved from: http://business.heacademy.ac.uk/assets/hlst/documents/johlste/vol5no2/0116.pdf

Entwistle, N., and McCune, V. (2004). The conceptual bases of study strategy inventories. Educational Psychology Review, 16(4): 325–345. Retrieved from: http://www.springerlink.com/content/l27747602358j724/

Entwistle, N. J., & Smith, C. A. (2002). Personal understanding and target understanding: mapping influences on the outcomes of learning. British Journal of Educational Psychology, 72, 321-342.

Entwistle, N. (2000). Promoting deep learning through teaching and assessment: conceptual frameworks and educational contexts [online]. (Paper presented at TLRP Conference, Leicester, November 2000). [Accessed 8 June 2011].

Entwistle, N., Tait, H., & McCune, V. (2000). Patterns of response to an approaches to studying inventory across contrasting groups and contexts. *European Journal of Psychology of Education, 15*(1), 33-48. Retrieved from http://www.springerlink.com/content/v803p0pu07h27046/

Entwistle, N. J. (1991). Approaches to learning and perceptions of the learning environment. Higher Education 22: 201 – 204.

Floyd, K. S., Harrington, S. J., & Santiago, J. (2009). The effect of student engagement and perceived course value on deep and surface learning strategies. *Informing Science: The International Journal of Emerging Transdiscipline*, *12*, 181-190. Retrieved on June 8, 2011 from http://www.arasite.org/guestkb.htm

Fraenkel, J. R., & Wallen, N. E., (2008). How to design and evaluate research in education: 7th Edition. McGraw-Hill International Edition. New York.

Garton, B. L., Spain, J. N., Lamberson, W. R., & Spiers, D. E.  (1999). Learning styles, teaching performance, and student achievement: A relationship study.  Journal of Agricultural Education, 40(3), 11-20.

Gijbels, D., & Dochy, F. (2006). Students' assessment preferences and approaches to learning: Can formative assessment make a difference? *Educational Studies*, 32(4), 399–409. Retrieved from:
https://perswww.kuleuven.be/~u0015308/Publications/CEDS_A_184968_O.pdf

Gijbels, D., van de Watering, G., Dochy, F. & van den Bossche, P. (2005). The relationship between students' approaches to learning and learning outcomes, *European Journal of Psychology of Education*, 20(4), 327–341. Retrieved from:
https://perswww.kuleuven.be/~u0015308/Publications/EJPE2005.pdf

Gordon, C. & Debus, R. (2002) Developing deep learning approaches and personal teaching efficacy within a pre-service teacher education context, *British Journal of Educational Psychology,* 22, 483-511. Retrieved from
http://www.numyspace.co.uk/~unn_evdw3/skills/2010/papers/deep1.pdf

Government of Malaysia, (1997). The Malaysian Smart School Conceptual Blueprint: An MSC Flagship Application. Retrieved from
http://www.mscmalaysia.my/codenavia/portals/msc/images/pdf/ss-blueprint.pdf

Guildford, J. 1956. *Fundamental statistics in psychology and education*. New York: McGraw Hill.

Heikkilä, A. (2011). *University students' approaches to learning, self-regulation, and cognitive and attributional strategies: connections with well-being and academic success reference.* (Doctoral dissertation). Retrieved from
https://helda.helsinki.fi/bitstream/handle/10138/25859/universi.pdf?sequence=1

Kaur, S., & Thiyagarajah, R. (1999). The English reading habit of ELLS students in University Science Malaysia. Available at:
http://ultibase.eu.rmit.edu.au/Articles/may00/thiyag1.pdf

Kyndt, E. (2011). *Investigating students' approaches to learning.* (Doctoral dissertation). Retrieved from
https://lirias.kuleuven.be/bitstream/123456789/307055/1/Doctoraat+Eva+Kyndt+(2011).pdf

Lietz, P. & Matthews, B. (2006). Are values more important than learning approaches? Factors influencing student performance at an international university. *Paper presented at the AARE 2006 Conference,* Australia: Adelaide. Available online at
http://www.aare.edu.au/06pap/lie06070.pdf. Retrieved on 20th July 2011.

Mahyuddin, R., Elias, H., Cheong, L. S., Muhamad, M. F., Noordin, N., & Abdullah, M. C. (2006). The relationship between students' self-efficacy and their English language achievement.  *Jurnal Pendidik dan Pendidikan*, 21: 61-71

March, M. L. (2010). Epistemological beliefs and approaches to learning: Influence on academic performance in higher education. (Doctoral dissertation). Capella University, Minneapolis State, MN.

Minbashian, A., Huon, G.F., & Bird, K.D. (2004). Approaches to studying and academic performance in short-essay exams. *Higher Education, 47*, 161-176.

Morgan, A. (1993) Improving Your Students' Learning.  London and Philadelphia: Kogan Page.

Naderi, H., Abdullah, R., Aizan, H. T., Sharir, J., & Kumar, V. (2009). Creativity, age and gender as predictors of academic achievement among undergraduate students. Journal of American Science 5(5): 101-112.

Offir, B., Lev, Y., & Bezalel, R. (2008). Surface and deep learning processes in distance education: Synchronous versus asynchronous systems. Computers and Education 51: 1172 – 1183. www.elsevier.com/locate/compedu

Oxford, R. (1989). The role of styles and strategies in second language learning. *ERIC Digest.* Washington, DC: ERIC/CLL.  Retrieved from:
http://www.ericdigests.org/pre-9214/styles.htm