

A Review on Development of Constructivism Learning Model as Attributors of High-Level Thinking Skills on Accounting Skills.



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ABSTRACT: The value of individual employability can be enhanced through the provision of quality aspects of Education. Therefore, the development of constructivism learning models is one of the main drivers to the attributes of students' high-level thinking skills. The focus of this study is to study and present ideas to improve students' high-level thinking skills through the building elements of the constructivism learning model in accounting skills. It is concluded that Constructivism Learning Model as Attributors of High-Level Thinking Skills on Accounting Skills. Previous researchers' findings were also included to support the arguments used in the study.

KEYWORDS: Constructivism Learning Model; high-level thinking skills; Accounting Skills

I. INTRODUCTION

Recognizing the importance of thinking skills among undergraduates as a platform to prepare themselves with high marketability values to achieve competitiveness and continuous continuity, a lot of general research on thinking skills has been conducted (Jamaluddin et al., 2019). However, the attribution of high-level thinking skills in accounting skills is a concern from the inability of students who will color the market to solve a problem well and lack the ability to come up with creative and critical ideas in the face of existing problems. Thus, the high-level thinking skills attribute in this study contributed to the government in making a leap for the purpose of transforming the education system at the Higher Learning Institution (IPT) level as targeted through the Malaysian Education Development Plan (2015-2025) Higher Education (PT). Therefore, in order to realize the country's aspiration in Malaysian Education Development Blue Print (MEDB) Higher Institution (HI), the focus on learning aspects at the IPT level should be emphasized.

Thus, the objective of this study is i) to elaborate the teaching practices of IPTA lecturers in Malaysia in High-Level Thinking Skills on accounting skills; ii) analyze the driving factors of High-Level Thinking Skills on accounting skills; iii) develop a constructivism learning model that is the driving force for High-Level Thinking Skills on accounting. The study used a combined research technique (mixed method). To achieve the first objective, qualitative research techniques will be used (interviewing IPTA lecturers and verbatim data analysis). Meanwhile, the second objective will be achieved by using a combined research technique based on a review of literature and questionnaire instruments for the purpose of producing two (2) questionnaire instruments based on the Fuzzy Delphi method for construct verification and the next element of producing a prototype model as a base model. Finally, for verification of the constructed model will be confirmed through quantitative techniques (questionnaire and analysis of Structural Equation Modelling data).

II. LITERATURE REVIEW

The Hashim et al. study, (2016) on the issue of employability of graduates in Malaysia found that it is a necessity for the management of IPT to provide students with a diversity of activities involving a diversity of critical skills especially for the purpose of encouraging them to use cognitive thinking that involves the process of reasoning, concept building, evaluation and problem solving. This is because, the lack of mastery in High-Level Thinking Skills among IPT students is a factor in the increase in the unemployment rate among graduates in Malaysia (Mokhtar, 2012). Generally, students with excellent High-Level Thinking Skills level have great potential to be more successful in all areas of engagement (Jamaluddin et al., 2020; Tanujaya et al., 2017). This is evidenced by Holden, Jameson and Larson's (2002) through their research on the determining factors of success in the business sector, which found that graduates who are proactive and able to apply High-Level Thinking Skills such as skills in analyzing, criticizing, synthesis, and communication towards various levels of society are graduates who are up for grabs by employers. This is because, employers are confident and believe that graduates with High-Level Thinking Skills can become more innovative and catalyze the transformation that will be carried out in their organization (Mokhtar, 2012; Holden et al., 2002).

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Vygotsky's theory of social constructivism (1978) explains that the learning environment has an impact on individual learning outcomes especially from the aspect of knowledge acquisition, knowledge generation and knowledge transformation. Bakry and Bakar (2015) explained that the factors that cause the inaccessibility of High-Level Thinking Skills in individuals are due to the learning environment that focuses on educator-centered teaching techniques solely and prohibits the active involvement of students during lectures. While the active involvement of students during the teaching and learning session in the classroom contributed to the improvement of the mind transformation as well as improving the ability of High-Level Thinking Skills in the person (Wilkin, 2017). Thus, the researchers further expanded the study by making students at IPT as the focus subjects to see the teaching and learning practices practiced in mastering the accounting and application skills of High-Level Thinking Skills. The individual's inability to choose the right learning strategy for a learning also contributes to the inaccessibility of excellent High-Level Thinking Skills mastery.

Previous findings explained that the problem of undergraduates in mastering KBAT is not due to their level of intelligence but stems from failure to use good cognitive, metacognitive, and affective learning strategies (Hassan, 2017; Wijnen et al., 2017; Kikas & Jogi, 2016). Previous studies on learning strategies have been widely implemented, but only focused on one learning strategy (Sanip & Che Ahmad, 2014; Che Lah, Mohd Saat, & Hassan, 2013) even only focuses on other courses such as Science (Angela & Paul, 2016; Hugerat, 2015) and Malay language (Hassan, 2017).

Therefore, studies that focus on learning strategies applied by individuals in mastering High-Level Thinking Skills on accounting skills are important to obtain comprehensive findings. Previous studies have also offered limited explanations on moderator variables in the relationship of learning environments and learning strategies with student achievement. Although there are various findings related to the factors that are the driving force of High-Level Thinking Skills on accounting skills, this study is important to continue through the development of new models through the theoretical involvement of constructivism learning. The production of this new model helps to improve the findings of previous studies so that the transformation of the individual's mind can be achieved while providing high marketability and competitive value in the individual.

HA1: There is a significant relationship between learning constructivism (Learning environment and learning strategies – exogenous constructivism, endogenous constructivism, and dialectical constructivism) with High-Level Thinking Skills on accounting skills.

III. STUDY DESIGN

This research uses a design and development study approach (Design and Development Research Approach – DDR) involving a combined research technique (Mixed Method). The DDR approach backed up to Richey and Klein (2007) emphasizes the systematic and orderly process elements in the development of models and products (Mohd Ridhuan et. al, 2018) considering the underlying theory of a study. Based on DDR, the study will go through three phases of the study using different study tools in each phase. The involvement of study participants comprising a group of experts and a group of users was able to provide comprehensive input and consider the needs of the model in the Malaysian context.

The three phases of study applied in this study include the phase of needs analysis, the phase of design and development, and the phase of testing the usability of the model. The study of the development of a constructivism learning model for High-Level Thinking Skills proficiency needs to involve the process of making a literature review to identify the constructs and the main elements required in this model. The learning models proposed by scholars such as Robert Glaser (1962), Bloom (1968), Hunter (1991), Lerner (2003), and Vygotsky (1978) are identified and analyzed first and then linked to the basic theory in this study, namely the theory of constructivism learning (Vygotsky, 1978). Preliminary analysis of the literature has produced three main constructs of the model namely exogenous constructivism, endogenous constructivism, and dialectical constructivism.

IV. CONCLUSION

This study supports the transformation of education targeted by the government through the Malaysian Education Development Plan (Higher Education) 2015 - 2025 through the focus of the study on the elements that are 10 of the government's targeted surge covering aspects of the aspirations of the system and the aspirations of students. The new model development study and High-Level Thinking Skills which focuses on accounting skills at the IPT level can support and contribute to the accessibility of the government's aspiration in Malaysian Education Development Plan (Higher Education) to achieve a marketability value of more than 80% graduates, thus making Malaysia a developed and excellent country in the aspect of education covering the aspirations of the system and the aspirations of students (Jamaluddin et al., 2019).

REFERENCES

- 1) Angela, S., & Paul A. H. (2016). Effective Learning: A Case Study of the Learning Strategies Used by a Gifted High Achiever in Learning Science. *Gifted Child Quarterly* 2016, Vol. 60 (1) 63–74.

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- 2) Bakry & Bakar, M. N. (2015). The Process of Thinking among Junior High School Students in Solving HOTS Question. *International Journal of Evaluation and Research in Education (IJERE)*, 4 (3), 138–145.
- 3) Baskin, S., Iscan, A., Karagoz, B., & Birol, G. (2017). The Use of Vocabulary Learning Strategies in Teaching Turkish as a Second Language. *Journal of Education and Practice*, Volume 8, No. 9.
- 4) Bean, J. C. (2001). *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking and Active Learning in the Classroom*. San Francisco, CA: Jossey-Bass.
- 5) Biggs, J. (1999). What the Student Does: Teaching for Enhanced Learning. *Higher Education Research & Development*, 18:1, 57-75.
- 6) Che Lah, N., Mohd Saat, R., & Hassan, R. (2013). Strategi Kognitif Abstrak dalam Pembelajaran Kimia. *Jurnal Kurikulum & Pengajaran Asia Pasifik*, Bil. 1, Isu 4.
- 7) Chen, C., Fan, J., & Jury, M. (2017). Are Perceived Learning Environments Related to Subjective Well-Being? A Visit to University Students. *Learning and Individual Differences*, 54, 226–233. <https://doi.org/10.1016/j.lindif.2017.01.001>
- 8) Crowl, T. K., Kaminsky, S., & Podell, D. M. (1997). *Educational psychology: Windows on teaching*. Madison, WI: Brown and Benchmark.
- 9) Dumford, A. D., Cogswell, C. A., & Miller, A. L. (2016a). The Who, What, and Where of Learning Strategies. *The Journal of Effective Teaching*, 16 (1), 72–88.
- 10) Fraser, B. J. (1998). Classroom Environment Instruments: Development, Validity and Applications. *Learning Environments Research*, 1, 7–33.
- 11) Frey, I. G., Deutscher, M., & Renkl, A. (2018). Student Teachers' Prior Knowledge as Prerequisite to Learn How to Assess Pupils' Learning Strategies. *Teaching and Teacher Education*, 76, 227 -241.
- 12) Hamed, S., Bahari, P., & Abdullah, A. G. K. (2008). Korelasi antara Persekitaran Pembelajaran Matematik, Sikap Pelajar Terhadap Matematik dan Pencapaian Pelajar Dalam Matematik: Satu Kajian Kes. *ESTEEM Academic Journal UiTM Pulau Pinang*. Volume 4, No. 2.
- 13) Hartley, J. (1998). *Learning and Studying: A Research Perspective*. London: Routledge.
- 14) Hashim, N., Kee, C. P., & Abdul Rahman, M. F. (2016). STOPS: Mengungkap isu Kebolehpasaran Graduan di Malaysia. *Jurnal Komunikasi, Malaysian Journal of Communication*, 32 (2), 139–164.
- 15) Hassan, R. (2017). Gaya dan Strategi Pembelajaran Bahasa Melayu dalam Kalangan Pelajar Perancis. *Journal of Language Studies*, 17 (1), 125–146.
- 16) Holden, R., Jameson, S., & Parsons, D. J. (2002). *Making A Difference – The Contribution of Graduates to Small Business Success'*. Leeds: Leeds Metropolitan University
- 17) Hugerat, M. (2015). How teaching science using project-based learning strategies affects the classroom learning environment. *Learning Environment Research*. <http://doi.org/10.1007/s10984-016-9212-y>.
- 18) Jamaluddin, N. S., Kadir, S. A., Abdullah, A., & Alias, S. N. (2020). Learning Strategy and Higher Order Thinking Skills of Students in Accounting Studies: Correlation and Regression Analysis. *Universal Journal of Educational Research* 8(3C): 85-90, 2020
- 19) Jamaluddin, N. S., Kadir, S. A., Abdullah, A., & Alias, S. N. (2019). Enhancement of Higher Order Thinking Skills through Empowerment of Learning Environments. *International Journal of Academic Research in Progressive Education and Development*, 8(2), 159–167.
- 20) Jamaluddin, N. S., Kadir, S. A., Alias, S. N., & Abdullah, A. (2019). Scaffolding through Project Based Learning on the Change of Student Achievement: A Study in Accounting Principles Subject. *International Journal of Academic Research in Business and Social Sciences*, 9(9), 567–577.
- 21) Joyce, B., & Weil, M. (1996). *Models of Teaching (Fifth Edition)*. Englewood Cliffs, NJ: Prentice-Hall.
- 22) Kaplan, E. J., & Kies, D. A. (1994). Strategies to Increase Critical Thinking in The Undergraduate College Classroom. *College Student Journal*, 28 (1), 24-31.
- 23) Kikas, E., & Jogi, A. L. (2016). Assessment of Learning Strategies: Self-Report Questionnaire or Learning Task. *European Journal of Psychology of Education*, 31(4), 579–593. <https://doi.org/10.1007/s10212-015-0276-3>.
- 24) Lewis, A., & Smith, D. (1993). Defining Higher Order Thinking. *Theory Into Practice*, 32 (3), 131–137.
- 25) Loh, S. C. (2002). Effects of Combined Strategy Instruction and Attribution Retraining in Mathematics Achievement of From One Students in a Secondary School. Tesis kedoktoran yang tidak diterbitkan. Universiti Putra Malaysia, Malaysia.
- 26) Marsh, H. W., & Hau, K. T. (2015). Academic Self-Concept and Achievement. *International Encyclopedia of the Social & Behavioral Sciences*, 2nd edition, Volume 1. <http://dx.doi.org/10.1016/B978-0-08-097086-8.92153-6>.
- 27) Marzano, R. J. (1988). *Dimensions of Thinking: A Framework for Curriculum and Instruction*. Alexandria, VA: Association for Supervision and Curriculum Development.

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- 28) Mohamed, S. Z. (2006). Kesan Pendekatan Penyebatan Kemahiran Berfikir Kreatif dalam Pengajaran Karangan Deskriptif dan Karangan Imajinatif dalam Kalangan Pelajar Tingkatan IV. Tesis Doktor Falsafah: Universiti Sains Malaysia.
- 29) Mohd Saad, B. (1997). Korelasi Antara Persekitaran Pembelajaran dengan Pendekatan Pembelajaran dengan Pencapaian Ekonomi STPM. Tesis Sarjana Pendidikan: Universiti Kebangsaan Malaysia.
- 30) Mokhtar, S. B. (2012). Faktor Persekitaran Pembelajaran, Pendekatan Pembelajaran dan Kemahiran Generik Dalam Kalangan Pelajar Politeknik. Tesis Doktor Falsafah: Universiti Kebangsaan Malaysia.
- 31) Newmann, F. M. (1990). Higher Order Thinking in Teaching Social Studies: A rationale for the assessment of Classroom Thoughtfulness. *Journal of Curriculum Studies*, 22 (1), 41- 56.
- 32) Ohst, A., Glogger, I., Nuckles, M., & Renkl, A. (2015). Helping Pre-service Teachers with Inaccurate and Fragmentary Prior Knowledge to Acquire Conceptual Understanding of Psychological Principles. *Psychology Learning & Teaching*, 14 (1), 5-25. <https://doi.org/10.1177/1475725714564925>.
- 33) Onosko, J. J., & Newmann, F. M. (1994). Creating more thoughtful learning environments, In J.N.Mangieri & C.C. Block (Eds.). *Creating powerful thinking in teachers and students: Diverse perspectives*. Fort Worth: Harcourt Brace College Publishers.
- 34) Oxford, R. L. (1990). *Language Learning Strategies*. New York: Newbury House.
- 35) Panayiotou, M., Humphrey, N., & Wigelsworth, M. (2019). An Empirical Basis for Linking Social and Emotional Learning to Academic Performance. *Contemporary Educational Psychology*, 56, 193 – 204.
- 36) Pogrow, S. (2005). HOTS revisited: A Thinking Development Approach to Reducing the Learning Gap after Grade 3. *Phi Delta Kappan*, 87, 64-75. <https://doi.org/10.1177/003172170508700111>
- 37) Poh, S. H. (2001). KBKK: Kemahiran Berfikir Secara Kritis dan Kreatif. Kuala Lumpur: Kumpulan Budiman.
- 38) Puteh, M., Adnan, M., Ibrahim, M. H., Mohamed Noh, N., & Che Ahmad, C. N., (2014). An Analysis of Comfortable Teaching and Learning Environment: Community Response to Climate Change in School. *Procedia - Social and Behavioral Sciences*, 116, 285–290. <https://doi.org/10.1016/j.sbspro.2014.01.209>
- 39) Ramsden, P. (1991). A Performance Indicator of Teaching Quality in Higher Education: The Course Experience.
- 40) Richardson, C., & Mishra, P., (2018). Learning Environments that Support Student Creativity: Developing the SCALE. *Thinking Skills and Creativity*, 27, 45-54.
- 41) Rugutt, J. K., & Chemosit, C. C. (2009). What Motivate Students to Learn? Contribution of Student-To- Student Relations, Student-Faculty Interaction and Critical Thinking Skills. *Educational Research Quarterly*, 32 (3), 16-28.
- 42) Sangawi, H., Adams, J., & Reissland, N. (2016). The Impact of Parenting Styles on Children Developmental Outcome: The Role of Academic Self-Concept as a Mediator. *International Journal of Psychology*. DOI: 10.1002/ijop.12380.
- 43) Sanip, F. A., & Che Ahmad, C. N. (2014). Kesedaran Strategi Metakognitif dan Kemahiran Berfikir Aras Tinggi dalam Kalangan Pelajar Biologi. *Jurnal Penyelidikan Pendidikan*, 15.
- 44) Schmeck, R. R. (1988). An Introduction to Strategies and Styles of Learning. In R. R. Schmeck (Ed.), *Learning Strategies and Learning Styles* (pp. 3–19). New York, NY: Plenum Press.
- 45) Silvestre, T. G., & Landa, S. U. (2016). Women, Physical Activity, and Quality of Life: Self-concept as a Mediator. *The Spanish Journal of Psychology*, 19, 1–9.
- 46) Tajudin, N. M., & Chinnappan, M. (2016). The Link between Higher Order Thinking Skills, Representation and Concepts in Enhancing TIMSS Tasks. *International Journal of Instruction*, 9 (2), 199–214.
- 47) Tanujaya, B., Mumu, J., & Margono, G. (2017). The Relationship between Higher Order Thinking Skills and Academic Performance of Student in Mathematics Instruction. *International Education Studies*, 10 (11), 78. <https://doi.org/10.5539/ies.v10n11p78>.
- 48) Tessmer, M., & Harris, D. (1992). *Analyzing the Instructional Setting: Environmental Analysis*. London/Bristol, PA: Kogan Page/Taylor and Francis.
- 49) Underbakke, M., Borg, J. M., & Peterson, D. (1993). Researching and Developing the Knowledge Base for Teaching Higher Order Thinking. *Theory into Practice*, Vol. 32, No. 3, 138-146.
- 50) Vermetten, Y. J., Lodewijks, H. G., & Vermunt, J. D. (1999). Consistency and variability of learning strategies in different university courses. *Higher Education*, 37 (1), 1-21.
- 51) Vermunt, J. D. (1996). Metacognitive, Cognitive and Affective Aspects of Learning Styles and Strategies: A Phenomenographic Analysis. *Higher Education*, 31 (1), 25-50.
- 52) Vygotsky, L. S. (1978). *Mind in Society - The Development of Higher Psychological Processes*. Cambridge: Harvard University Press.

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- 53) Wang, J. (2015). The impact of learning strategies and styles on the sense of success or failure in foreign language learning, *Research and teaching practices in specialty languages*. [Online], Vol. XXXIV N° 2 | 2015, diakses pada 30 Mei 2016 dari URL: <http://apliut.revues.org/5223>
- 54) Weinstein, C. E., & Mayer, R. E. (1986). *The Teaching of Learning Strategies*. Dlm Wittrock, M. C. *Handbook of research on teaching*, 315-327. Edisi Ke-3. New York: MacMillan Publishing Company.
- 55) Weinstein, C. E., & Palmer, D. R. (1990). *User's Manual of Learning and Study Strategies Inventory - High School Version*. Florida: H&H Publishing Company Inc.
- 56) Weinstein, C. E., Husman, J., & Dierking, D. R. (2000). *Handbook of Self-Regulation; Self-Regulation Interventions with a Focus on Learning Strategies*. Texas: Academic Press.
- 57) Wijnen, M., Loyens, S. M. M., Smeets, G., Kroeze, M., & Van, D. M. H. (2017). Comparing Problem-Based Learning Students to Students in A Lecture-Based Curriculum: Learning Strategies and The Relation with Self-Study Time. *European Journal of Psychology of Education*, 32 (3), 431–447.
- 58) Wilkin, C. L. (2017). Enhancing Critical Thinking: Accounting Students' Perceptions. *Education + Training*, 59 (1), 15–30. <https://doi.org/10.1108/ET-01-2015-0007>.
- 59) Yee, M. H., Md Yunus, J., Othman, W., Hassan, R., Tee, T. K., & Mohamad, M. M. (2015). Disparity of Learning Styles and Higher Order Thinking Skills among Technical Students. *Procedia - Social and Behavioral Sciences*, 204, 143 – 152.



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