



## Does Optimism, Epistemic Beliefs and Problem-Solving Skills Influence Learners' Attainment in Accounting Concepts?

Olugbenga A IGE\*

University of the Free State, Republic of South Africa

Email: [IgeOA@ufs.ac.za](mailto:IgeOA@ufs.ac.za)

Olowogboyega Olorunwa

Postgraduate Student, University of Lagos, Nigeria

Email: [olorunwaolowogboyega@gmail.com](mailto:olorunwaolowogboyega@gmail.com)

### Abstract

This study investigated the influence of optimism, epistemic beliefs, and problem-solving skills on learners' attainment in Accounting concepts. The survey design of a descriptive type was adopted to elicit responses from 300 senior secondary school students in selected five secondary schools in a university town. Research instruments such as optimism and problem-solving skills questionnaires were adapted from Batool (2009), while Schraw, Bendixen and Dunkle's (2002) 'Epistemic Beliefs Inventory' and the Financial Accounting Multiple Choice Questions (FAMCQ) were used to collect data from the selected senior secondary school students. The data were subjected to simple regression analysis. The results show that there is a combined influence of optimism, epistemic beliefs, problem solving on senior students' academic achievement ( $R = 0.364$ ). The research recommended that Accounting teachers should infuse optimism, epistemic beliefs, and problem-solving concepts in the Accounting curriculum of their schools.

**Key words:** optimism, epistemic beliefs, problem-solving skills, accounting concept, learners' achievement

### Introduction

Individuals' beliefs about knowledge and knowing are called '*epistemic beliefs*'. *Epistemic Beliefs* function as a lens through which a person interprets materials and learning demands, and influence learning and instruction processes (Rebmann et al., 2015). Scholars have reported the influence of epistemic beliefs on inspiration, achievement, learning strategies, teaching conceptions, and additional constructs (Deng, Chai, Tsai, & Lee 2014). Epistemic beliefs are individuals' beliefs about knowledge and knowing. Muis and Gierus (2014) and Schraw (2013) posited that many scholars possess differentiated beliefs on knowledge/knowing from beliefs on learning which are considered as authentic epistemological beliefs and the latter as non-epistemological dimensions. Furthermore, optimism becomes a veritable variable to include in this research consequent on Yates's (2002) assertion of its formation during childhood. The three-year study initiated by Yates (2002) confirmed that as students reach adolescence, their optimistic explanations for common life events decreased. Yates (2002) further discovered that as the respondents reached adolescence, the achievement levels in mathematics increased with time, consequent on the instructions they received, their set goals and earlier years constructive work habits. Optimism was investigated in this research to enable the researchers confirm

the applicability of these findings to Accounting Education. In the global society, problem-solvers hold the ace to solving societal problems. An earlier study by Wolks and Cates (2002) discovered that students in other business-related disciplines have a better style of solving problems than accounting students, despite their predominant adaptation in problem-solving style. It was this observation that led Wolks and Cates (2002) to demand that changes be made to the accounting curriculum. In this article, the focus is on how optimism, epistemic beliefs, and problem-solving skills influence learners' attainment in accounting concepts.

## Literature Review

### *Optimism*

Optimism brings about positive outcomes in interpersonal relationships by promoting favourable expectancies, which in turn cause individuals to pursue their relationship goals with more compliance and determination. However, previous studies that investigated the effects of optimism on adolescents' academic achievement did not find any association between these constructs (Rand, Martin, & Shea, 2011; Tetzner & Becker, 2015). Optimism has potentials to assist students to enhance their academic achievement despite these challenges. Carver, Scheier, and Segerstrom (2010) stated that optimistic adolescents may show higher academic engagement and greater persistence in reaching their academic goals. Tetzner and Becker (2017) opined that learners that are optimistic seemed to perform better than their less optimistic colleagues in different spheres of life. With the assertion of Tetzner and Becker (2019) on the benefits inherent in teaching optimism to learners, the present study sought to investigate whether optimism would have an effect on learners' achievement in accounting concepts, thereby attempting to expand on research trends concerning the relationship between optimism and learners' outcomes in accounting concepts.

### *Epistemic Beliefs*

Epistemic beliefs have different conceptions, and interdependent levels (Muis, Trevors, Duffy, Ranellucci, & Foy, 2016). In a general sense, epistemic belief presents individuals' beliefs about knowledge whereas on a domain specific level, it is conceptualised on a specific domain or discipline (Rosman et al., 2016). Greene Sandoval, & Bråten (2016) stated that beliefs about knowledge have potential influence on individuals' beliefs on learning. Research on epistemic beliefs have attracted interest in the last sixty years for their predictive power on positive learning outcomes. The interest in research on epistemic beliefs was evident in the works of Madjar et al. (2019) and Lee and Chan (2018). Madjar et al. (2019) researched on epistemic beliefs and achievement goal orientation, which was described as integral in the explanation of cognitive engagements and strategies of learning. Madjar et al. (2019) affirmed that notwithstanding the weak relationships between definite epistemic positions and achievement goal orientations, the distribution of the relationships these constructs were distinct and orthogonal. Evidences from Lee and Chan's (2018) research affirmed the relationships among epistemic beliefs, perception of learning environments and academic performance of freshmen majoring in social sciences. Lee and Chan (2018) concluded that the components of epistemic beliefs such as presage and process factors at different times were significant, moderately high, and of varying magnitudes to suggest their model's strength. Lee and Chan (2018) cautioned that a moderate range of Cronbach alphas were noticeable in some of the dimensions on epistemic beliefs.

There are scholarly evidences that suggested that epistemic beliefs pertaining to a constructivist and situated view (knowledge is uncertain, evolving and can be constructed actively by oneself) are associated with better learning outcomes (Sinatra et al., 2014). Despite these evidences, many researchers have differentiated beliefs about knowledge/knowing from beliefs about learning, with the former considered as genuine epistemological beliefs and the latter as only reflecting non-epistemological dimensions (Muis & Gierus, 2014).

### *Problem Solving*

Problem-solving is the completion of tasks by learners that solve problems using integrative cognitive, metacognitive, and self-regulatory mechanisms (Cleary & Chen 2009; Montague et al. 2011) to

accurately regulate and monitor their learning processes. Freire (2008) defined this process as a transition from banking education concept to problem-based education model. In problem-solving, instructors give responsibilities to students to improve their problem-solving skills which included solutions to problematic concepts, trying to apply what they learnt in school daily, showing determination, and reading literature (Yildiz, 2016). Yildiz (2016) further stated that instructors should motivate learners to achieve these responsibilities, draw their attention to the course, give them opportunities to apply what they learned, and offer them encouragement. The position of Yildiz (2016) presents one of the appropriate approaches by teachers to problem-solving.

From the literature reviewed for this research, there are divergent opinions from educational researchers on the impact of optimism, epistemic beliefs and problem-solving skills on Learners' attainment in the social science disciplines. Furthermore, the dynamics of the business world across the world require accounting graduates that have the knack to solve accounting problems, and optimistic that such problems are not beyond their disciplinary boundaries. It is in the light of the foregoing that this research evaluated the influence of the independent variables on learners' academic attainment in accounting concepts.

### **Research Questions**

1. Does optimism, epistemic beliefs, problem-solving have influence on students' academic achievement in Accounting concepts?
2. Does optimism, epistemic beliefs, problem-solving have relative influence on students' academic achievement in Accounting concepts?

### **Theoretical Framework**

#### ***Optimism and Pessimism***

This research is anchored on optimism and pessimism theoretical assumptions. A unique feature of the variables i.e. optimism, epistemic beliefs, and problem-solving skills is the primary relationships epistemic beliefs and problem-solving skills have to optimism. Parashar (2009) affirms that optimism is correlated with diverse life outcomes such as increased life expectancy, general and mental health, increased success in sports and work, greater recovery rates from surgical operations, and evolution of coping strategies in adversity related situations.

The scholarly attention accorded 'optimism' started with the research of Carver (1966) that emphasizes the importance of behavioural responses when people confront adversity. Carver (1966) affirmation that optimists expect good outcomes, with the possibility of experiencing a more positive mix of feelings; while pessimists expect bad outcomes such as anxiety, sadness, and despair (See Scheier et al., 2001). Aspinwall et al. (2001:217) painted a clearer picture of the associations shared by optimism, mental, and physical health in the previous fifteen years. Despite the good association/relationships established by Aspinwall et al. (2001:217) between optimism and major life transitions such as relocation from home to college, from one country to another, and adjustment to life-threatening and chronic illnesses such as cancer and AIDS, optimism has weak relationships with academic attainment.

We adopted optimism and pessimism theoretical framework in this research because it accounts for good outcomes in diverse domains of life such as attainment in accounting concepts. The two other independent variables such as epistemic beliefs and problem-solving were brought into this research to strengthen the effect of optimism consequent on Aspinwall et al.'s (2001) position that this construct does not have association with intelligence, academic attainment, wealth or other factors related to advantages in life.

## Methods

### *Participants*

The survey design of a descriptive type was adopted to elicit responses from 300 senior secondary school students in the selected five secondary schools in a university town in Southern, Nigeria. The survey design of a descriptive type otherwise called the 'field-based MO' (See Ige, Jita, & Jita, 2019) was adopted for this research. 145 (48.3%) of the selected students were males, while 155 (51.7%) were females. These students were selected for the study because they were enrolled for Accounting and Book- Keeping in the selected secondary schools.

### *Research Instruments*

The Optimism and Problem-solving Skills sub-scales were adapted from Batool (2009) while Schraw, Bendixen and Dunkle's (2002) 'Epistemic Beliefs Inventory' was adapted to evaluate the influence of independent variables on students' academic achievement in Accounting concepts. Items on the optimism sub-scale adapted from Batool (2009) were 'I hope that some good solution will come-up even in case of extreme unfavourable circumstances', 'If once failed, I don't become disappointed, rather keep on trying for improvement'. The problem-solving sub-scale has statements such as 'In a complex situation I try to come out of it instead of despair', and 'In case of conflict, I can find out the solution to the problem after deep consideration/ analysis'. The students were asked to respond to the items on 'Optimism', 'Problem-solving Skills' and 'Epistemic Beliefs' on a scale that ranged from 1 to 6. The alpha co-efficient of Optimism and problem-solving skills sub-scales reported by Batool (2009) was 0.95.

The Schraw et al.'s (2002) questionnaire has thirty-two statements, but twenty-eight statements such as 'How well you do in school depends on how smart you are', and 'if you don't learn something quickly, you won't ever learn it" were selected from the questionnaire. The Schraw et al. (2002) reported the alpha coefficient of .58 to .68. The negatively worded items in the questionnaire were coded in reverse before the data were analysed.

The Financial Accounting Multiple Choice Questions (FAMCQ) was used to evaluate learners' attainment in Accounting concepts. The FAMCQ consisted of 15 multiple choice items with options from a-e. The reliability co-efficient of the test using Kr21 was 0.78.

### *Procedure and Ethical Considerations*

Authorised institutional introductory letters that explained the objectives of the study and included a consent for assistance were referred to the schools, and participants were subsequently engaged. An introduction which included 'the purpose and content of the study' was provided for the participants and after explaining, the questionnaire was administered to consenting participants in group of 40-50 students in the selected schools with the assistance of the teachers. All participants in the selected schools provided informed consent.

### *Data Analysis*

The multiple regression analysis was adopted to determine the combined and relative influence of 'Optimism', 'Problem-solving Skills' and 'Epistemic Beliefs' on students' academic attainment in Accounting Education concepts. 'Optimism', 'Problem-solving skills' and 'Epistemic Beliefs' were regressed on students' academic attainment of the selected students in Accounting Education concepts.

## Results

This section presents the answers to the research questions that guided this research.

**Table 1:***Combined influence of optimism, epistemic beliefs, problem solving on academic achievement*

Model	Sum of Squares	Df	Mean Sig.	F Square
Regression	205.623	3	68.541 .000	15.037
Residual	1344.671	295	4.558	.91229584
Total	1550.294	298		

R = 0.364, R<sup>2</sup> = 0.133, Adj. R<sup>2</sup> = 0.124, P Value = 0.05

Dependent variable: Achievement\_Accounting\_Concepts

Predictors: (Contant), Optimism, Epistemic\_Beliefs, Problem\_Solving

Table 1 shows that there is a relationship among optimism, epistemic beliefs, problem -solving significantly predicted academic achievement (R = 0.36). This is consequent on the fact that these variables accounted for 12.4% of the total variance in the academic achievement. This relationship is shown to be significant (F<sub>(3, 298)</sub> = 15.0; p < 0.05). This implies that the independent variables have significant joint influence on students' academic achievement in accounting concepts.

**Table 2:***Relative influence of the Dependent Variables on Achievement*

Model	Unstandardized Coefficients		Standardized Coefficients	t
	B	Std. Error	Beta	Sig.
1 (Constant)	1.632	.404		4.040 .000
Epistemic_Beliefs	.011	.005	.179	2.086 .000
Problem Solving	.013	.031	.044	.433 .666
Optimism	.051	.030	.171	1.661 .098

a. Dependent variable: Achievement Accounting Concepts

Table 2 shows that epistemic beliefs had a significant relative influence on students' academic achievement in accounting concepts (t= 2.09; p < 0.05). However, problem-solving (t= 0.43, p > 0.05) and optimism (t= 1.66, p > 0.05) had no significant relative influence on students' academic achievement.

### Discussion

The current study investigated the influence of optimism, epistemic beliefs, and problem-solving skills on senior secondary school students' attainment in Accounting concepts. The outcomes of the study show that optimism, epistemic beliefs, and problem-solving skills accounted for 12.4% of the variance in senior secondary school students' academic achievement. This result implies that there are 87.6%

other factors that could potentially influence students' academic achievement which were not investigated in this study. The positive influence reported for optimism, epistemic beliefs, and problem-solving skills in this research supports Parashar (2009) on the association of optimism with diverse life outcomes such as increased life expectancy, general and mental health, increased success in sports and work, greater recovery rates from surgical operations, and evolution of coping strategies in adversity-related situations. The adversity related situations related to this research are students' persistence to solve difficult accounting concepts in the selected schools terminal examinations. This finding seems to negate the outcome of the research reported by Aspinwall et al. (2001) that optimism beliefs have no association with academic attainment and other factors related to advantages in life.

The result of the study shows that epistemic beliefs had a significant influence on students' academic achievement. The sole influence of epistemic beliefs on students' attainment in this study confirms the assertion of Winberg, Hofverberg, and Lindfors (2018) on the existence of a weak relationship between epistemic beliefs, cognition, and performance goals. Lee and Chan (2015) affirmed that research on epistemic beliefs had become important in the last sixty years, consequent on their predictive power over positive learning outcomes. The influence of epistemic beliefs in this study shows that teachers must teach this concept because of its effect on students' learning outcomes.

### Conclusions

The results of this study are philosophically relevant for the teaching of Accounting Education concepts in secondary schools across the world. It was evident from the literature explicated that constructs such as optimism, epistemic beliefs and problem-solving skills have influence on students' learning outcomes in Accounting Education. The results in this study seem to emphasise that epistemic beliefs should be consciously cultivated in the students taking Accounting and Book-Keeping in senior secondary school. It is recommended that researchers in different social science disciplines could evaluate the impact of optimism, epistemic beliefs, and problem-solving skills on students' learning outcomes. However, it should be noted that the effects of these independent variables were limited to three senior secondary school students in the five secondary schools selected in a developing nation.

### References

- Adu, E.O., Ige, O.A., & Adu, K.O. (2017). Internet Self: Efficacy, Computer usage and Competency Variables influencing University students' Internet Use in Southern Nigeria. [http://www.hkaect.org/hkaect-aect-2017/download/paper/P10\\_4.pdf](http://www.hkaect.org/hkaect-aect-2017/download/paper/P10_4.pdf)
- Aspinwall, L.G., Richter, L., & Hoffmann III, R.R. (2001). In Chang, E.C. Eds. *Optimism & Pessimism: Implications for Theory, Research, and Practice*. <http://dx.doi.org/10.1037/10385-010>.
- Batool, S.S. (2009). Development and validation of emotional intelligence scale and emotional intelligence as a predictor of marital quality. An unpublished PhD thesis submitted to Department of Psychology & Applied Psychology, University of The Punjab, Lahore, Pakistan. Accessed 27 April 2020 from <https://pdfs.semanticscholar.org/b5e3/e200f2b02040efa469be719154bb803afd55.pdf>
- Carver, C. S. (1966). *Optimism*. *Article in Philosophy*. DOI: 10.1017/S0031819100058848.
- Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, 30, 879-889.
- Cleary, T. J., & Chen, P. P. (2009). Self-Regulation, Motivation, and Math Achievement in Middle School: Variations across Grade Level and Math Context. *Journal of School Psychology*, 47, 291-314. <https://doi.org/10.1016/j.jsp.2009.04.002>
- Deng, F., Chai, C. S., Tsai, C.-C., & Lee, M.-H. (2014). The Relationships among Chinese Practicing Teachers' Epistemic Beliefs, Pedagogical Beliefs and Their Beliefs about the Use of ICT. *Educational Technology & Society*, 17 (2), 245-256.
- Freire, Paulo. "The "Banking" Concept of Education." *Ways of Reading*. 8<sup>th</sup> ed. Bartholomae, David and Anthony Petrosky. Boston: Bedford- St. Martin's, 2008. 242-254. Print

- Greene, J. A., Sandoval, W. A., & Bråten, I. (2016). An introduction to epistemic cognition. In J. A. Greene, W. A. Sandoval, & I. Bråten (Eds.), *Handbook of epistemic cognition* (pp. 1-15). New York: Routledge.
- Ige, O.A., Jita, L.C., & Jita, T. (2019). Major personality traits influencing environmental knowledge: a case of urban learning ecologies. *Problems of Education in 21<sup>st</sup> century*, 77(1), 39-54. [http://www.scientiasocialis.lt/pec/node/files/pdf/vol77/39-54.ige\\_vol.77-1\\_pec.pdf](http://www.scientiasocialis.lt/pec/node/files/pdf/vol77/39-54.ige_vol.77-1_pec.pdf)
- Lee, W. W. S., & Chan, C. K. K. (2015). Identifying and examining epistemic beliefs among college students in Hong Kong. *Asia-Pacific Education Researcher*, 24(4), 603-612.
- Lee, W.W.S., & Chan, C.K.K. (2018). Relationships Among Epistemic Beliefs, Perception of Learning Environment, Study Approaches and Academic Performance: A Longitudinal Exploration with 3P Model. *Asia-Pacific Edu Res*, 27, 267–276. <https://doi.org/10.1007/s40299-018-0384-3>.
- Madjar, N., Weinstock, M., & Kaplan, A. (2017). Epistemic beliefs and achievement goal orientations: Relations between constructs versus personal profiles. *The Journal of Educational Research*, 110(1), 32-49, <https://doi.org/10.1080/00220671.2015.1034353>.
- Montague, M., Krawec, J., Enders, C., & Dietz, S. (2014). The effects of cognitive strategy instruction on math problem solving of middle-school students of varying ability. *Journal of Educational Psychology*, 106(2), 469-481.
- Muis, K. & Geirus, B. (2014). Beliefs about knowledge, knowing and learning: Differences across knowledge types in physics. *The Journal of Experimental Education*, 82(3), 408-430. <https://doi.org/10.1080/00220973.2013.813371>
- Muis, K. R., Trevors, G., Duffy, M., Ranellucci, J., & Foy, M. J. (2016). Testing the TIDE: Examining the nature of students' epistemic beliefs using a multiple methods approach. *Journal of Experimental Education*, 84(2), 264-288. <https://doi.org/10.1080/00220973.2015.1048843>
- Parashar, F. (2009). *The psychology of optimism and pessimism: Theories and Research findings*. Accessed 15 November 2021 at <http://positivepsychology.org.uk/optimism-pessimism-theory/>
- Peter, J., Rosman, T., Mayer, A.-K., Leichner, N., & Krampen, G. (2016). Assessing epistemic sophistication by considering domain-specific absolute and multiplicistic beliefs separately. *British Journal of Educational Psychology*, 86(2), 204-221. <https://doi.org/10.1111/bjep.12098>
- Rand, K.L., Martin, A.D., & Shea, A.M. (2011). Hope, but not optimism, predicts academic performance of law students beyond previous academic achievement. *Journal of Research in Personality*, 45, 683-686.
- Rebmann, K., Schloemer, T., Berding, F., Luttenberger, S., & Paechter, M. (2015). Pre-service teachers' personal epistemic beliefs and the beliefs they assume their pupils to have. *European Journal of Teacher Education*, 38(3), 284-299, DOI: 10.1080/02619768.2014.994059.
- Schraw, G. (2013). Conceptual integration and measurement of epistemological and ontological beliefs in educational research. *International Scholarly Research Notices*, 2013, 1-20. <https://doi.org/10.1155/2013/327680>.
- Schraw, G., Bendixen, L. D., & Dunkle, M. E. (2002). Development and validation of the Epistemic Belief Inventory (EBI). In B. K. Hofer & P. R. Pintrich (Eds.), *Personal epistemology: The psychology of beliefs about knowledge and knowing* (p. 261-275). Lawrence Erlbaum Associates Publishers.
- Sinatra, G., Kienhues, D., & Hofer, B. (2014). Addressing challenges to public understanding of science: Epistemic cognition, motivated reasoning, and conceptual change. *Educational Psychologist*, 49(2), 1-16.
- Tetzner, J., & Becker, M. (2015). How being an optimist makes a difference: The protective role of optimism in adolescents' adjustment to parental separation. *Social Psychological and Personality Science*, 6, 325-333.
- Tetzner, J., & Becker, M. (2019). Why are you so optimistic? Effects of sociodemographic factors,

- individual experiences, and peer characteristics on optimism in early adolescents. *Journal of Personality*, 87(3):661-675. <https://doi.org/10.1111/jopy.12424>
- Winberg, T.M., Hofverberg, A. & Lindfors, M. (2019). Relationships between epistemic beliefs and achievement goals: developmental trends over grades 5–11. *Eur J Psychol Educ* 34, 295-315 <https://doi.org/10.1007/s10212-018-0391-z>
- Wolks, C.M. & Cates, T.A. (2002). Problem-solving styles of accounting students: Are expectations of innovations reasonable? *Journal of Accounting Education*, 12(4), 269-281. [https://doi.org/10.1016/0748-5751\(94\)90022-1](https://doi.org/10.1016/0748-5751(94)90022-1)
- Yates, S.M. (2002). The influence of optimism and pessimism on student achievement in mathematics. *Mathematics Education Research Journal*, 14(1), 4-15. <https://link.springer.com/article/10.1007/BF03217113>.
- Yildiz, C. (2016). Investigation of mathematics teachers' view about improving problem solving skills. *The Eurasia Proceedings of Educational & Social Sciences (EPESS)*, 4, 471-481.