Students' Perceptions of Their Engagement in Statistics Class Activities

This study investigates how students perceive their participation in statistics class activities. Effective pedagogical practices depend on knowing how students interact with data-related tasks. To gauge the self-reported levels of engagement, interest, and perceived relevance of Statistics activities, the study polls 433 students in grade 12. To fully understand the perspectives of students, the study uses a quantitative strategy that includes quantitative surveys. The implications of this study add to the conversation about statistics education. The results guide the development of curricula, instructional strategies, and educational policies to encourage meaningful participation and enhance student outcomes in statistics. A generation that is data literate and capable of using data for informed decision-making is created by adapting teaching strategies to students' needs and interests. The needs and goals of the students can be used to improve statistics programs.

Introduction

In today's information-driven era, the ability to make effective decisions is crucial for organizational performance and competition (Elgendy, Elragal & Päivärinta, 2022). Applied statisticians play a vital role in advising stakeholders across various fields, including medicine, finance, and education, with the objective of improving decision-making under conditions of uncertainty (Longford, 2021). Recognizing the growing importance of statistics skills, educational institutions have integrated statistics activities into their curricula. However, the success of these initiatives hinges upon the students' perceptions of their involvement. By gaining insights into how students perceive their engagement in statistics activities, valuable guidance can be obtained to enhance pedagogical approaches in this domain. This study aims to investigate students' perceptions of their engagement in Statistics Class activities, focusing on their levels of engagement, influencing factors, challenges faced, and suggestions for improvement.

Problem Statement

While statistics education has received much attention in recent years, there has been little study on high school students' perceptions of their participation in Statistics class activities. Understanding how students view their participation in these activities is critical for enhancing teaching tactics and the efficacy of statistics programs. There is a void in the research covering the elements that impact students' perspectives, the obstacles they face, and their ideas for improving their statistics learning experiences.

Purpose and Research Questions

Investigating students' perceptions of their participation in class activities in statistics is the purpose of this study, which aims to close the gap that currently exists. The study's research questions included the following:

- How do students perceive their level of engagement in Statistics Class activities?
- What factors influence students' perceptions of their engagement in statistics activities?
- What challenges do students encounter while engaging in Statistics Class activities?
- What suggestions do students have for improving their learning experiences in Statistics?

The solutions to these issues can help teachers, curriculum developers, and policymakers enhance the teaching of statistics.

Literature Review

To build the groundwork for future study, academics must synthesize previously published work (Watson & Webster, 2020). A literature review is research that synthesizes and analyses previously published material to advance ideas (Post, Sarala, Gatrell, and Prescott, 2020). All research initiatives and disciplines must take into account past, pertinent literature (Snyder, 2019). Here are the key components addressed in the literature review of this study:

Statistics at High School

At its core, statistics is the study of mathematics, in which students work on collecting, processing, analysing, and drawing conclusions from data. Statistical science deals with data (Bina, 2020). Kalobo (2016) believes that the use of constructivist approaches and the application of inductive approaches in statistics education, the emphasis on statistical literacy, statistical reasoning, and thinking in statistics education can all improve statistics teaching and learning. According to delMas (2017), using statistical literacy, reasoning, and thinking to identify desired learning outcomes in statistics can be very helpful both when considering teaching objectives and when developing assessment tasks.

Students' Perceptions of Statistics

According to Bond et al. (2012), perception is the result of an interplay between cognitive and non-cognitive elements. According to Gregory (1970), this idea is a productive process that draws on prior knowledge and experience and is also in charge of organizing, interpreting, looking for meaning, or trying to make

sense of a situation. According to Chiesi and Primi (2010), students start beginning classes at varying degrees of proficiency, particularly in mathematics. In every statistics lesson, students' verbal statistical reasoning and numeracy abilities are frequently put to the test and pushed. In his 1991 study, Zeidner examined students of social science who were anxious about statistics and mathematics. The results revealed a negative correlation between students' final grade in mathematics for grade 12 and their impression of themselves as mathematicians, which in turn affected their performance. Provide an overview of the research area, highlighting its relevance to educational practice and the increasing demand for data literacy skills in various domains. Define key terms and concepts related to student's perceptions of their engagement in Statistics Class activities. Clarify the scope of the review, specifying the educational levels (e.g., primary, secondary, tertiary) and the specific aspects of statistics activities (e.g., data collection, analysis, interpretation, application) that are under investigation.

Factors Influencing Students' Perceptions

Identify and discuss the factors that have been found to influence students' perceptions of statistics activities. These factors may include instructional strategies, teacher support, curriculum design, technological tools, and individual characteristics. analyse how these factors have been addressed in previous studies and identify any gaps or inconsistencies in the findings. Perception is defined by Bond et al. (2012) as an interaction between cognitive and non-cognitive factors. Gregory (1970) defines this concept as a constructive process that relies on prior knowledge and experience, also responsible for ordering, interpreting, searching for meaning or making sense out of a situation. Students enter introductory classes with different levels of competence, especially mathematical competence (Chiesi & Primi, 2010). Their verbal statistical reasoning and numeracy skills are constantly tested and challenged in any statistics class. Zeidner's (1991) study looked at statistics and mathematics anxiety in Social Science students. The findings showed that students' mathematics self-perception and their final grade 12 mathematics grades were negatively correlated with students' statistics anxiety, and consequently their performance.

The Theoretical Framework

The theoretical framework for the study is based on Fredricks, Blumenfeld, and Paris (2004) Model of Engagement. This model of engagement focuses on the cognitive, emotional, and behavioral aspects of students' active participation in their learning experiences (Fredricks, Blumenfeld, and Paris (2004). Engagement is a complex term that emphasises students' various patterns in motivation, cognition, and behavior (Appleton et al., 2008; Baron & Corbin, 2012; Fredricks et al., 2004; Phan & Ngu, 2014a; Sharma & Bhaumik, 2013). "Engaged learning involves students participating in class and thinking about what they are doing' (GAISE College Report ASA Revision Committee 2016, 18). This theory suggests

that students' perceptions of their engagement in statistics class activities are influenced by three dimensions of engagement: behavioral engagement, emotional engagement, and cognitive engagement (Fredricks, Blumenfeld, and Paris (2004).

Behavioral Engagement

According to Fredricks et al. (2004), behavioral engagement refers to students' observable actions and participation in statistics activities. These statistics activities, include attending classes, contributing to discussions, completing assignments, and collaborating with peers. Behavioral engagement flourishes with routines, assignments, activities, and cues that help students know not only what is expected of them but is also conducive to learning overall. Students who are engaged in a learning process, are usually actively listening, and paying attention.

Emotional Engagement

The emotional engagement domain concerns questions regarding students' feelings of belonging or value to their teacher, their classroom, or their school (e.g., interest, boredom, happiness, sadness, anxiety) (Fredricks et al., 2004; Renninger & Bachrach, 2015). Furthermore, emotional engagement relates to students' affective experiences, such as interest, enjoyment, and motivation, which influence their attitudes toward statistics and intrinsic motivation to learn.

Cognitive Engagement

Cognitive engagement encompasses students' investment in learning, motivation, goal setting, relevance perception, effort, and self-regulated learning strategies (Pohl, 2020). In statistics, it involves mental investment, critical thinking, problem-solving, and metacognitive strategies. Promoting behavioral, emotional, and cognitive engagement is crucial for fostering active involvement, positive attitudes, and meaningful learning experiences in statistics education. Effective instructional strategies can optimize student engagement and achievement. Further research should continue refining approaches to maximize student engagement in statistics education.

Research Methodology

This study will use a quantitative survey research design to investigate students' perceptions of their engagement in statistics class activities based on the Model of Engagement (Fredricks, Blumenfeld, & Paris, 2004).

Sample Selection

A diverse sample of 433 grade 12 students was selected to ensure representation across educational districts.

Survey Development

A survey questionnaire (See appendix A) is being conducted to measure grade 12 students' engagement in statistics class activities, including self-reported levels of engagement, interest, and relevance.

Data Collection

A survey was administered to grade 12 students to ensure anonymity and confidentiality.

Data Analysis

This study uses quantitative methods to gain a comprehensive understanding of student perceptions of engagement in statistics class activities. Descriptive statistics were computed to summarize quantitative survey data, including measures of central tendency and variability. The categories and core of the question of students' engagement in Statistics activities are presented in Table 1.

Table 1. Categories and core of the question of students' engagement in Statistics activities

Categories	Core of question	Question
Behavioral Engagement	Students work without support; step-by-step demonstrations; make Statistics interesting; Statistics tasks can raise my confidence, attending classes, contributing to discussions, completing assignments, collaborating with peers, routines, assignments, activities, actively listening, and paying attention.	13, 16, 17, 18
Cognitive Engagement	Cognitive engagement refers to students' investment and interest in their learning, motivation to learn, goal setting, perception of the relevance of learning, effort directed toward learning, and use of self-regulated learning strategies (Pohl, 2020). It involved students asking questions; preferring to understand; the context of the problem; recognises when students fail to comprehend; the success of individual students; different ways of solving problems; marking their own work; prior knowledge; mark my classmates' work.	1, 3, 4, 7, 9, 11, 12, 15, 19

Emotional Engagement	The emotional engagement domain concerns questions regarding students' boredom, happiness, sadness, anxiety, students' interest, enjoyment, and motivation. The way students participate in discussions, what questions they ask, how they seek help, and how they express curiosity. Students take part in practical problems; involve in-class activities; practice time; understand concepts; participate during corrections (Fredricks et al., 2004).	2, 5, 6, 8, 10, 14

Students' Involvement in Statistics Class Activities

In this section, the students' questionnaire (see Appendix A) was used to test students' involvement in Statistics class activities. The questionnaire uses a five-point Likert scale to assess the students' involvement. It should be noted that the Statistics questionnaire contained 19 items. Tables 2 to 5 present the responses to the questions. Since it was not clear how the subscale scores for the various subscales should be interpreted, it was decided to calculate the 95% confidence intervals (CIs) for the mean and to interpret the mean score in the context of both the lower and upper CIs. Consideration was also given to whether the lower and upper CIs were, respectively, below or above the theoretical midpoint for the range of the scores (that midpoint, on a scale from 1 to 5, being 3).

Behavioral Engagement

Table 2 indicates the students' view of their involvement in Statistics, measured against behavioral engagement.

Table 2. Behavioral Engagement

	Minimum	*Maximum*	*Median*	*Mean*	*95% CI for mean*	*Standard deviation*
Behavioral Engagement	1.3	5	3.71	3.58	0.0756	0.79

Figure 1 provides a summary of the behavioral engagement subscales examined in the study. It visually represents the different dimensions of behavioral engagement that were investigated.

Figure 1. Behavioural Engagement Subscales

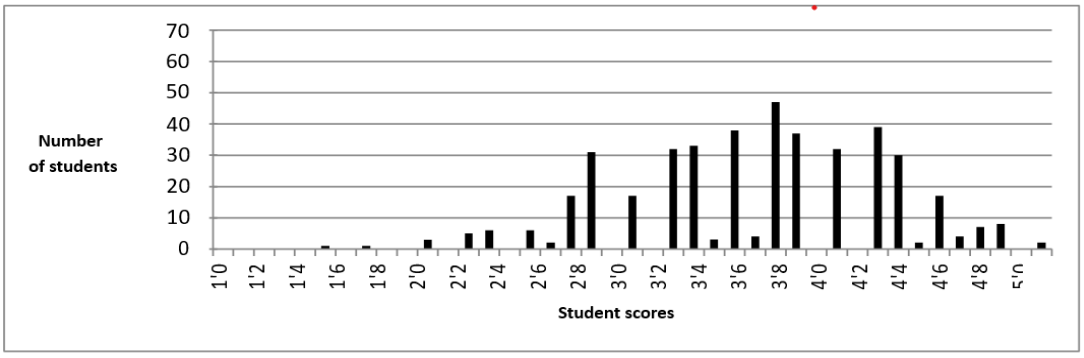


Table 2 and Figure 1 reveal a range of scores on the behavioral engagement subscale, with students scoring as low as 1.3 and as high as 5. However, the mean score, along with its confidence intervals of 3.50|3.58|3.66, indicates that students typically employed a behaviorist approach to their learning in Statistics. Specifically, in response to questions 16 (3.83|3.94|4.05), 17 (3.82|3.94|4.06), and 18 (3.47|3.59|3.71), many participants indicated that their teachers usually demonstrate step-by-step processes to make Statistics interesting and use teaching methods that enhance students' confidence. These responses align with the literature on behavioral engagement, which emphasizes student attendance, active participation in discussions, completion of assignments, and collaboration with peers.

However, it is concerning that in response to question 13(2.73|2.86|2.99), some students expressed uncertainty about working without support during class activities in Statistics. Addressing this concern is important, as it is essential for students to develop independence and self-efficacy in their learning.

Overall, the findings suggest that while students generally exhibit a behaviorist approach and benefit from teachers' demonstrations and support, there is room for improvement in fostering students' confidence and self-reliance during class activities in Statistics. By addressing these concerns, educators can promote greater autonomy and engagement among students, leading to more effective and meaningful learning experiences.

Cognitive Engagement

Cognitively engaged students would be invested in their learning, would seek to go beyond the requirements, and would relish a challenge (Sesmiyanti, 2018). Table 3 indicates students' view of their involvement in statistics, measured against cognitive engagement.

Table 3. Cognitive Engagement

	Minimum	*Maximum*	*Median*	*Mean*	*95% CI for mean*	*Standard deviation*
Cognitive	1.8	5	3.33	3.34	0.0529	0.55

Figure 2 summarizes the cognitive engagement subscales, offering a visual overview of the dimensions explored in the study.

Figure 2. Cognitive Engagement Subscales

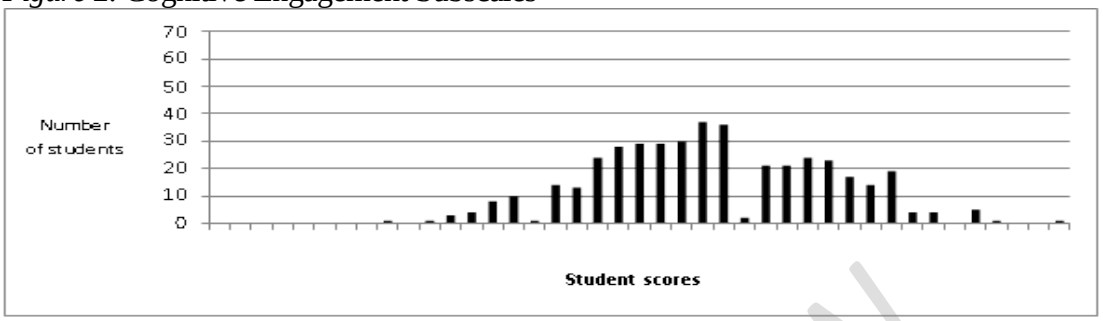


Table 3 and Figure 2 reveal varying cognitive engagement scores among students, ranging from 1.8 to 5. The mean and CIs of 3.29|3.34|3.39 indicate a level of uncertainty in their engagement. However, responses to specific questions, such as 3 (4.20|4.29|4.38), 4 (3.76|3.88|4.00), 7 (3.91|4.03|4.15), 15 (3.76|3.88|4.00) and 19 (3.39|3.54|3.65), show that many participants frequently ask questions, apply previous knowledge, collaborate with peers, and use diverse problem-solving approaches in Statistics class. These responses align with the literature on cognitive engagement, highlighting students' investment in understanding and applying statistical concepts. On the other hand, there are concerns raised by the responses to questions 1 (2.35|2.46|2.57), 9(2.54|2.69|2.84), 11 (3.18|3.31|3.44), and 12 (2.95|3.09|3.23), where students expressed uncertainty. This includes students not asking questions, teachers lacking an individualized approach, and limited use of diverse problem-solving methods in Statistics classes.

These findings emphasize the need for addressing these concerns, promoting active questioning, individualized instruction, and varied problem-solving approaches in Statistics education. By addressing these areas, educators can enhance students' cognitive engagement and improve their overall learning experience.

Emotional Engagement

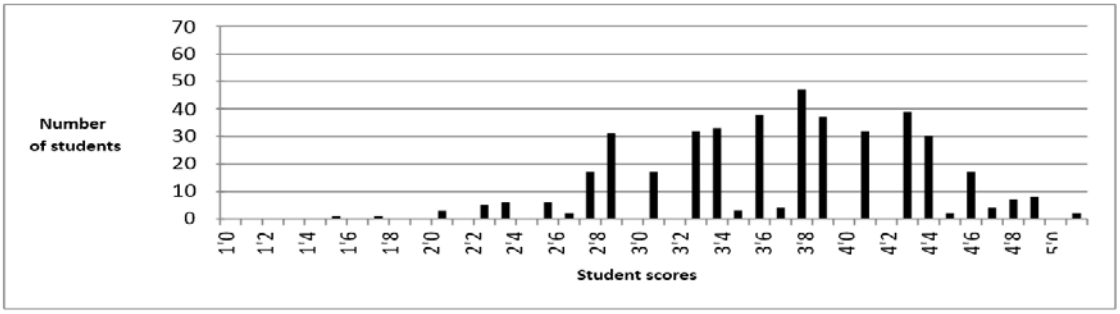
Table 4 offers insights into students' emotional engagement in Statistics classes, enhancing our understanding of their perceptions and experiences in this context.

Table 4. Learning Environment

	Minimum	*Maximum*	*Median*	*Mean*	*95% CI for mean*	*Standard deviation*
Learning	1.5	5	3.67	3.60	0.0609	0.64

Figure 3 visually represents students' emotional engagement in Statistics classes, presenting a comprehensive overview of their emotional experiences.

Figure 3. Emotional Engagement



It is obvious from Table 4 and Figure 3 that the learning environment scores ranged between 1.5 and 5, with a mean and CIs of 3.54|3.60|3.66, indicating that students usually benefit from a positive Statistics learning environment. In relation to the responses to questions 2 (3.58|3.69|3.80), 6 (3.96|4.07|4.18), 8 (3.25|3.38|3.51), 10 (3.47|3.58|3.69) and 14 (3.66|3.79|3.92), it is notable that participants consistently expressed a high level of active involvement in their learning experiences. Across these questions, which pertain to their emotional engagement in Statistics class activities, most participants responded with "usually" to indicate their active involvement. This consistent pattern of responses, with scores ranging from 3.58 to 3.92, suggests that the participants perceive themselves as actively engaged in their learning process. Their consistent inclination towards active involvement indicates a positive disposition and a genuine commitment to their Statistics education.

Interpretation and Discussion

The way students perceive and engage with statistics class activities is multifaceted, influenced by three distinct dimensions of engagement: behavioral, emotional, and cognitive engagement. Through a meticulous analysis of the responses collected from the questionnaire administered to the students, it becomes unmistakably clear that the majority of students who participated in this research are actively and fervently involved in statistics activities. Their active engagement stems primarily from their robust behavioral engagement, their deep cognitive engagement, and their genuine emotional engagement within the context of the statistics class.

However, it is important to recognize that within this student population, a subset of individuals displays uncertainty when it comes to fully embracing behavioral engagement during statistics class activities. This hesitance often originates from their longing for additional support and guidance throughout the learning process. These students yearn for a nurturing environment that encourages and assists them in actively participating in class activities.

Furthermore, there are still other students who grapple with uncertainty when it comes to employing cognitive engagement, particularly demonstrated by their reluctance to ask questions. These individuals, for various reasons, may feel

hesitant or apprehensive about seeking clarification or further exploring concepts. Consequently, this reticence can potentially impede their cognitive engagement within the statistics class, preventing them from fully grasping and mastering the subject matter.

It is essential for teachers to recognise and address these uncertainties, fostering an inclusive and supportive learning environment that caters to the diverse engagement needs of their students. By providing adequate support, guidance, and encouragement, teachers can help students overcome their hesitations, enabling them to actively participate, seek clarity, and fully engage in statistics class activities.

Drawing insights from the students' responses gathered through the questionnaire, it becomes evident that a significant majority of the students who participated in this research have experienced a considerable degree of emotional engagement. They have formed a meaningful connection and invested their emotions into the statistics class activities. This emotional engagement has likely played a significant role in their overall learning experience.

However, it is worth noting that amidst this majority, there remains a subset of students who harbor uncertainty when it comes to independently solving problems before their teachers demonstrate the problem-solving process. These students express a reluctance to engage in independent problem-solving, preferring to rely on their teachers' guidance and instruction. This hesitation may stem from a lack of confidence or a fear of making errors without proper guidance.

Addressing the needs of these students who exhibit uncertainty is crucial to fostering their cognitive engagement and self-efficacy. Teachers should strive to create a supportive and empowering environment that encourages students to gradually develop their problem-solving skills, providing them with the necessary scaffolding and guidance. By nurturing their confidence and gradually fostering independence, teachers can help these students overcome their uncertainties and actively engage in problem-solving activities.

Initiatives to be implemented to Enable Students' Engagement

To enable students' engagement in statistics class activities and address the uncertainties expressed by certain individuals, the implementation of various initiatives is essential. Here are some initiatives that teachers can consider:

1. Differentiated instruction: Recognize the diverse needs and learning styles of students, and tailor instruction accordingly. Provide a range of activities and materials that cater to different levels of behavioral, emotional, and cognitive engagement.
2. Clear learning objectives: Clearly communicate the learning objectives and outcomes of the statistics class activities. This clarity helps students understand the purpose of their engagement and motivates them to actively participate.
3. Supportive learning environment: Foster a supportive and inclusive classroom atmosphere where students feel comfortable expressing their

uncertainties and seeking assistance. Encourage collaboration, peer support, and open communication among students.

4. Scaffolding techniques: Gradually guide students toward independent problem-solving by providing scaffolded support. Break down complex problems into smaller, manageable steps, and provide prompts, examples, and models to assist students in building their confidence and skills.
5. Encourage questions: Create a safe space for students to ask questions without fear of judgment or criticism. Emphasize the value of questioning as a crucial component of cognitive engagement and understanding. Respond to questions with patience and clarity, promoting an open dialogue.
6. Feedback and reflection: Provide timely and constructive feedback to students, highlighting their strengths and areas for improvement. Encourage self-reflection and self-assessment to enhance metacognitive awareness, empowering students to take ownership of their learning process.
7. Varied instructional strategies: Incorporate a variety of instructional strategies, such as hands-on activities, group discussions, real-world examples, and technology-based tools. This diversity appeals to different engagement styles and helps maintain student interest and active participation.
8. Personalised support: Identify students who require additional support and offer one-on-one assistance or targeted interventions. Provide extra resources, tutoring, or mentoring to help students overcome their uncertainties and enhance their engagement.
9. Celebrate progress and effort: Recognize and celebrate students' progress, effort, and achievements in statistics class activities. This positive reinforcement boosts motivation and encourages continued engagement and growth.
10. Ongoing reflection and adaptation: Regularly reflect on the effectiveness of the implemented initiatives and make necessary adjustments based on student feedback and observed outcomes. Flexibility and adaptability are key to continuously improving students' engagement in statistics class activities.

By implementing these initiatives, teachers can create an engaging and supportive learning environment that caters to the diverse engagement needs of students. This holistic approach will empower students to actively participate, seek clarity, develop problem-solving skills, and fully engage in statistics class activities.

Conclusion

This study examined students' perceptions of engagement in statistics class activities, providing insights for educators, curriculum developers, and

policymakers to enhance statistics education. Students' engagement is influenced by behavioral, emotional, and cognitive dimensions. Most students actively engage in statistics activities, but some have uncertainties regarding behavioral engagement and cognitive engagement, such as seeking support or asking questions. Quantitative data analysis showed positive engagement levels, with students valuing practical applications and perceiving the relevance of statistics skills in real-world contexts. The study's implications include tailoring instructional practices to enhance engagement and learning outcomes, refining data literacy programs, and informing educational policies. However, limitations in sample size and composition suggest the need for larger-scale studies with diverse samples. Future research could explore longitudinal changes in students' perceptions and evaluate the impact of specific instructional strategies.

In conclusion, understanding students' perceptions of engagement in statistics class activities is crucial for improving statistics education. By incorporating their perspectives, educators, curriculum developers, and policymakers can create a more engaging and effective learning environment, equipping students with the necessary skills for data-driven decision-making.

Reference

Aveyard, H., & Sharp, P. (2019). A beginner's guide to critical appraisal of journal articles. Nursing Standard, 34(3), 45–51.

Cooper, H. M. (2019). Research synthesis and meta-analysis: A step-by-step approach (5th ed.). Sage Publications.

Cooper, K. S. (2014). Eliciting engagement in the high school classroom is a mixed method. American Educational Journal, 51(2), 363–402.

delMas, R.C. (2017). Statistical Literacy, Reasoning, and Thinking: A Commentary. *Journal of Statistics and Data Science Education (JSDSE) 10(2).* Published online.

Elgendy, N., Elragal, A. & Päivärinta, T. (2022). DECAS: a modern data-driven decision theory for big data and analytics. *Journal of Decision Systems*, 31(4), 337–373.

Eshun, G., & Osei, P. A. (2019). Exploring the Relationship between Cognitive Engagement and Achievement in Statistics among Pre-service Mathematics Teachers. International Journal of Science and Mathematics Education, 17(6), 1151–1170.

Fredricks, J. A., Blumenfeld, P. C., & Paris, A. H. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research, 74*(1), 59–109.

GAISE College Report ASA Revision Committee (2016), "Guidelines for Assessment and Instruction in Statistics Education College Report," available at http://www.amstat.org/education/gaise.

Gao, J., Shen, J., & Wu, L. (2020). Investigating the Relationship between Engagement and Learning Outcomes in College Statistics Education: The Role of Emotional Engagement. Journal of Statistics Education, 28(3), 144–156.

Lawton, S. & Taylor, L.(2020). Student Perceptions of Engagement in an Introductory Statistics Course. *Journal of Statistics Education*, 28(1), 45–55.

Li, S., & Ma, X. (2021). Student Engagement in Statistics Education: A Meta-Analysis. Journal of Educational Psychology, 113(2), 325–343.

Longford, N.T., & Boca Raton, F.L. (2021). *Statistics for Making Decisions*. *The American Statistician*, 76(1), 87–88.

Machin, A., & Campbell, M. J. (2021). Literature reviews and systematic reviews in clinical medicine. In Essential Medical Statistics (pp. 139–153). John Wiley & Sons.

Pohl, A.J. (2020). Strategies and Interventions for Promoting Cognitive Engagement. In: Reschly, A.L., Pohl, A.J., Christenson, S.L. (eds) Student Engagement. Springer, Cham.

Post C, Sarala R, Gatrell C, Prescott JE (2020) Advancing theory with review articles. Journal Management Study 57(2):351–376.

Reschly, A. L., Pohl, A.J. & Christenson, S. L. (2020). Student Engagement: Effective Academic, Behavioral, Cognitive, and Affective Interventions at School. Springer, Switzerland.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. Journal of Business Research. 104, 333–339.

Tranfield, D., Denyer, D., & Smart, P. (2020). Towards a methodology for developing evidence-informed management knowledge by means of the systematic review. British Journal of Management, 31(2), 212 – 231.

Wang, H., & Wu, L. (2021). An Exploration of Students' Engagement and Learning Outcomes in Statistics Education: Evidence from China. Journal of Statistics Education, 29(2), 74 – 88.

Webster, J., & Watson, R. T. (2020). Analysing the past to prepare for the future: Writing a literature review. MIS Quarterly, 44(3), 829 – 853.

Wilcox, A. J., & Wilcox, J. R. (2020). Maximizing Engagement and Achievement in Undergraduate Statistics Education. Journal of Statistics Education, 28(4), 201–214.

Appendix A. Student Questionnaire

No	Question	*Rarely*	*Sometimes*	*Uncertain*	*Usually*	*Almost always*
1	*I ask questions during Statistics lessons*	1	2	3	4	5
2	*I take part in discussions during Statistics lessons*	1	2	3	4	5
3	*I prefer to understand what I am doing in Statistics*	1	2	3	4	5
4	*My teacher exposes us to the context of the problem in Statistics tasks*	1	2	3	4	5
5	*I can think of solutions to practical problems before my teacher can show us how the problems are solved*	1	2	3	4	5
6	*I learn a great deal when I am involved in class activities during Statistics*	1	2	3	4	5
7	*My teacher recognises when students fail to comprehend during Statistics lessons*	1	2	3	4	5
8	*I need sufficient practice time during Statistics classes*	1	2	3	4	5
9	*My teacher focuses on the success of individual students rather than of the group in Statistics lessons*	1	2	3	4	5
10	*I have a basic understanding of concepts in Statistics*	1	2	3	4	5
11	*I use different ways of solving problems in Statistics*	1	2	3	4	5
12	*I do mark my own work in Statistics class*	1	2	3	4	5
13	*I work without support during classwork activities in Statistics*	1	2	3	4	5
14	*I participate in corrections in Statistics activities*	1	2	3	4	5
15	*I use the Mathematics knowledge obtained in Grades 8, 9, 10, and 11 in Statistics activities*	1	2	3	4	5
16	*I follow my Mathematics teacher's step-by-step demonstrations of how tasks are supposed to be done in Statistics*	1	2	3	4	5
17	*My teacher makes Statistics interesting*	1	2	3	4	5
18	*I am provided with statistics tasks that can raise my confidence*	1	2	3	4	5
19	*I do mark my classmates' work in Statistics class*	1	2	3	4	5