Issue VII, November 2024
e-ISSN 2707-9481 Institute of Metallurgy and Ore Beneficiation JSC, Satbayev University, Almaty, Kazakhstan
ISBN 978-601-80473-3-6 https://doi.org/10.31643/2024.05

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Evaluating Student Self-Management, Interpersonal Skills, and Academic Behaviors

Abstract: This study examines the relationships between student self-management, interpersonal skills, and academic behavior through detailed statistical analysis of survey data. The survey used a Likert scale ranging from "strongly disagree" to "strongly agree" to assess respondents' perceptions of these three areas. To analyze the data, we used the JASP Frequencies: Binomial Test function, which was specifically designed to calculate confidence intervals for the proportions of responses at each level of agreement. The analysis involved calculating 95% confidence intervals for the proportion of respondents who selected each Likert scale category for each survey item. These intervals provide a range within which the true proportion of responses may fall, offering insights into general trends and the distribution of respondents' views. In addition, we used the Vovk-Sellke maximum p-ratio to further interpret the significance of the results to help understand the strength of the evidence against the null hypothesis. This exploratory analysis not only demonstrates the variability and reliability of respondents' responses, but also provides a deeper understanding of how students' self-management, interpersonal skills, and academic behaviors are perceived at different levels of agreement. Using these statistical methods, research aims to uncover patterns and relationships in the data, thereby contributing to a deeper understanding of the factors that influence student achievement.

Keywords: self-management, interpersonal skills, academic behaviours, students, education.

Introduction

The multifaceted nature of student academic success in modern educational institutions goes beyond academic performance. Educators and researchers increasingly recognize that self-management, interpersonal skills and academic behavior play an important role in shaping students' overall educational experiences and outcomes. Understanding these factors is critical to developing effective support systems and interventions that enhance student empowerment and performance. Self-management, which includes skills such as time management, goal setting, and self-regulation, is fundamental to academic success (Sholikah et al., 2021). Self-management is an important factor in academic success, with evidence that self-directed growth goals have a significant impact on academic performance. Katz et al. (2019) found that approximately 20% of students' self-reported growth goals were directly related to their academic

performance, indicating a strong impact on achievement during reflective programs. This highlights the importance of self-management in academic settings and suggests that developing such skills can lead to improved educational outcomes. Students who manage their time and resources effectively are better equipped to meet academic demands and achieve educational goals.

In addition, Ghiasvand et al. (2017) studied a correlation between time management skills and academic motivation, indicating that students with good time management skills have lower anxiety levels and higher motivation. This finding is consistent with the notion that self-efficacy may alleviate negative emotional states such as test anxiety, which a significant percentage of students reported experiencing at moderate to severe levels. Similarly, interpersonal skills, including communication, teamwork, and conflict resolution, are critical to navigating collaborative learning environments and building positive relationships with peers and educators. Academic behaviour, which includes study habits, attendance, and engagement with course materials, directly affects student learning and outcomes. By examining how self-management and interpersonal skills intersect with academic behavior, we can better understand the factors that contribute to student achievement and well-being.

This study aims to assess these three important dimensions — self-management, interpersonal skills, and academic behaviors — through detailed statistical analysis of survey data. By classifying the survey questions into these three domains and analyzing the responses using JASP computer software, the study attempts to uncover patterns and relationships among these variables.

Research hypothesis: Students with high self-management skills will demonstrate positive academic behaviour and strong interpersonal skills. Specifically, students also report higher levels of agreement with statements related to effective academic behavior and positive interpersonal interactions. This hypothesis provides a basis for examining self-management and academic behavior and interpersonal skills and whether these dimensions of student behavior are related.

Research Methodology

The research design consists of several stages such as literature review, questionnaire development and categorization of the survey questions into three parts - self-management, interpersonal skills and academic behaviors of students. Respondents were asked to choose one of the Likert Scale multiple answers from strongly disagree, disagree, neutral, agree and strongly agree to the presented statement. Consequently, based on the obtained research results, a statistical analysis was performed. Calculations were carried out by JASP computer software (Version 0.18.3) and presented in the form of tables.

Research tools. Nyaga et al. (2014) developed the Metaprop Stata command to perform a meta-analysis of binomial data to test the proportion significantly different from the specified value. This tool allows researchers to combine and analyze binomial data from multiple scientific works. It has been widely used in various fields and has attracted the attention of several scientific studies. This study analyses the research results using the Classical Binomial Test of the JASP Version 0.18.3 computer program. Proportions tested against value 0.5. The Vovk-Sellke Maximum p -Ratio was based on the p-value, the maximum possible odds in favor of H_1 over H_o equals $1/(-e\ p\ \log(p))$ for $p \leq .37$. The Vovk-Sellke Maximum p-Ratio is a fundamental statistical concept (Sellke, Bayarri, & Berger, 2001).

Research Questionnaire and Samples. The survey was conducted among 65% of local and 35% of international students to identify student activities and motivation for future action if there is a need to change the education system. During conducting the survey, the majority of respondents admitted that they had never missed their lessons at the university. This can be concluded that they were motivated and engaged with internal interest. The sample size included 47% of the first-year and 53 % of the second-year students from the Department of Pedagogy and Psychology at Abai Kazakh National Pedagogical University in the academic year 2023-2024. The samples were randomly selected among 12% of male and 88% of female students. The survey items were 20 about Self-Management (7), Interpersonal Skills (6) and Academic Behaviors (7). The survey questions were slightly modified from analogous earlier research studies and answered in English. The Likert scale (strongly disagree, disagree, neutral, agree and strongly agree) was used to gather data about students' attitudes and opinions regarding the learning process.

Research Results and Discussions

Self-Management of Students. This part of the study aims to comprehensively explain the various factors that influence students' self-management, focusing on self-directed learning, intrinsic motivation and

self-regulation. The influence of using the Internet by students has an effectiveness of self-regulation (Lavrinenko et al., 2019). Self-directed learning is critical to student development and academic achievement. Pol, Volman, and Beishuizen (2010) pointed out that people learn better when they are in control of their learning experience, which highlights the importance of self-management in educational settings. Gureckis and Markant (2012) further supported this idea by finding significant correlations of situational interest and self-regulation with various types of activities, including behavioral, emotional, and cognitive relationships. This shows that independence in learning and the ability to regulate one's own learning process have a positive effect on student activity.

In addition, teachers' autonomy support plays an important role in influencing student engagement. Bartimote-Aufflick et al. (2016) emphasized the importance of autonomy-supportive learning, which includes intrinsic motivation and autonomy-satisfying instructional behavior that supports internalization. The authors noted that such learning experiences contribute to students' self-efficacy and overall engagement in learning activities. Muenks, Wigfield, Yang, and O'Neal (2017) and Geng, Law, and Niu (2019) emphasized the importance of intrinsic motivation to students' personality traits, self-regulation, and goal achievement. This shows that building intrinsic motivation among students is important for their overall academic and personal development.

Table 1. Self-Management

Variable	Level	Counts	Total	Proportion	p	VS-MPR*	95% CI for Proportion	
							Lower	Upper
I can resist doing something when I know I should not do it.	Agree	7	16	0.438	0.804	1.000	0.198	0.701
	Disagree	2	16	0.125	0.004	16.065	0.016	0.383
	Neutral	5	16	0.313	0.210	1.122	0.110	0.587
	Strongly Agree	2	16	0.125	0.004	16.065	0.016	0.383
I can calm myself down when I am excited or upset.	Agree	8	16	0.500	1.000	1.000	0.247	0.753
	Disagree	3	16	0.188	0.021	4.492	0.040	0.456
	Neutral	3	16	0.188	0.021	4.492	0.040	0.456
	Strongly Agree	2	16	0.125	0.004	16.065	0.016	0.383
I am a hard worker.	Agree	9	16	0.563	0.804	1.000	0.299	0.802
	Neutral	6	16	0.375	0.454	1.000	0.152	0.646
	Strongly Agree	1	16	0.063	< .001	93.747	0.002	0.302
I finish whatever I begin.	Agree	8	16	0.500	1.000	1.000	0.247	0.753
	Disagree	2	16	0.125	0.004	16.065	0.016	0.383
	Neutral	5	16	0.313	0.210	1.122	0.110	0.587
	Strongly Agree	1	16	0.063	< .001	93.747	0.002	0.302
I am diligent (hard-working and careful).	Agree	12	16	0.750	0.077	1.866	0.476	0.927
	Disagree	2	16	0.125	0.004	16.065	0.016	0.383
	Neutral	1	16	0.063	< .001	93.747	0.002	0.302
	Strongly Agree	1	16	0.063	< .001	93.747	0.002	0.302
Setbacks do not discourage me.	Agree	8	16	0.500	1.000	1.000	0.247	0.753
	Disagree	2	16	0.125	0.004	16.065	0.016	0.383
	Neutral	5	16	0.313	0.210	1.122	0.110	0.587
	Strongly Agree	1	16	0.063	< .001	93.747	0.002	0.302

Variable	Level	Counts	Total	Proportion	p	VS-MPR*	95% CI for Proportion Lower	95% CI for Proportion Upper
I can do almost all the work in class if I do not give up.	Agree	12	16	0.750	0.077	1.866	0.476	0.927
	Disagree	1	16	0.063	< .001	93.747	0.002	0.302
	Neutral	1	16	0.063	< .001	93.747	0.002	0.302
	Strongly Agree	2	16	0.125	0.004	16.065	0.016	0.383

Table 1 is the survey results showing the proportion of respondents who agree, disagree, or are neutral with the statements regarding self-management skills and their 95% confidence intervals. In the context of survey results, 95% confidence intervals indicate the range of values within which we can be 95% confident that a true population proportion lies. For example, in the self-control section, the proportion of individuals who agree to resist doing something when they know they shouldn't do it has a 95% confidence interval of 0.198 to 0.701. This means that we can be 95% confident that the actual proportion of people who are likely to resist when they know something should not be done falls within this range. Similarly, 95% confidence intervals for other survey questions provide a range of values that may include true population proportions for a given self-management and interpersonal skill.

Interpersonal Skills of Students. Interpersonal skills are essential for students because they are essential for effective collaboration, communication, and empathy. Vogler et al. (2018) found that students who participated in service learning improved their interpersonal skills. This suggests that experiential learning opportunities such as service learning can have a positive impact on the development of interpersonal skills. However, Sadiku (2015) also emphasizes the importance of concrete skills such as reading, speaking, writing and listening in the classroom. Hobgood et al. (2010) focused on the effect of active listening on students' responses, especially on the repetition of the message. This study highlights the importance of active listening as a component of interpersonal skills. Weger et al. (2010) and Jones, et al. (2019) also found that active listening has a positive effect on empathy, which is an important aspect of interpersonal skills.

Jones et al. (2019) and Abe et al. (2018) focused on the effectiveness of targeted educational programs and the implementation of improvisation to teach communication skills and build empathy. Vogel et al. (2018) provided a new model that integrates personal and professional identities related to the intersection of multiple forms of motivation, encountering and resolving value conflicts, and developing interpersonal skills.

Table 2. Interpersonal Skills

Variable	Level	Counts	Total	Proportion	p	VS-MPR*	95% CI for Proportion Lower	95% CI for Proportion Upper
I am comfortable interacting with people from a different racial or ethnic background.	Agree	5	16	0.313	0.210	1.122	0.110	0.587
	Neutral	6	16	0.375	0.454	1.000	0.152	0.646
	Strongly Agree	5	16	0.313	0.210	1.122	0.110	0.587
I can come up with new ideas.	Agree	11	16	0.688	0.210	1.122	0.413	0.890
	Neutral	2	16	0.125	0.004	16.065	0.016	0.383
	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456
I like to imagine new ways to do things.	Agree	11	16	0.688	0.210	1.122	0.413	0.890
	Neutral	2	16	0.125	0.004	16.065	0.016	0.383

Variable	Level	Counts	Total	Proportion	p	VS-MPR*	95% CI for Proportion	
							Lower	Upper
I am a creative person.	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456
	Agree	7	16	0.438	0.804	1.000	0.198	0.701
	Disagree	2	16	0.125	0.004	16.065	0.016	0.383
	Neutral	4	16	0.250	0.077	1.866	0.073	0.524
When my solution to a problem is not working, I try to figure out what went wrong.	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456
	Agree	9	16	0.563	0.804	1.000	0.299	0.802
	Neutral	3	16	0.188	0.021	4.492	0.040	0.456
I try to think of many solutions when I have a problem.	Strongly Agree	4	16	0.250	0.077	1.866	0.073	0.524
	Agree	9	16	0.563	0.804	1.000	0.299	0.802
	Disagree	1	16	0.063	< .001	93.747	0.002	0.302
	Neutral	3	16	0.188	0.021	4.492	0.040	0.456
	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456

Table 2 provides a summary of the survey results for various interpersonal skills, including comfort in interacting with people of different racial or ethnic groups, generating new ideas, imagining new ways of doing things, and creativity. These results show the proportion of individuals who expressed comfort in interacting with people from different racial or ethnic backgrounds at different levels of agreement. The confidence intervals that generate new ideas are as follows:

- For the "Agree" level: 95% CI (Confidence Interval) is between 0.413 and 0.890
- For the "Neutral" level: 95% CI is between 0.016 and 0.383
- For the "Strongly Agree" level: 95% CI is between 0.040 and 0.456

The research results found that the participants showed different levels of creativity. This suggests that participants had a range of levels of creativity, with some more inclined to agree with statements about creativity than others. The research findings show the multifaceted nature of interpersonal communication skills and various factors that influence their development among students. Historically, feminism has always been interpreted closely to the idea of unequal treatment towards women (Pertiwi et al., 2019), and upcoming research should comprehensively examine the role of individual differences, such as gender and personality traits, in the development of students' interpersonal skills.

Academic Behaviors of Students. Academic behavior plays a crucial role in students' overall academic achievement and success. Nonis and Hudson's (2010) research found that effective study habits and proper allocation of study time have a positive effect on students' academic performance. This shows that developing good study habits is essential for academic success. In addition, sleep habits have an impact on academic performance. Eliasson et al. (2010) found that earlier bedtimes and wake times had a positive effect on academic performance, suggesting the importance of healthy sleep habits in improving student academic performance. Boumosleh and Jaalouk (2017) studied the relationship between depression, anxiety, smartphone addiction and academic behavior among university students. The study found the negative effects of depression, anxiety, and smartphone addiction on students' academic behavior, highlighting the need to address mental health issues to promote positive academic behavior. Furthermore, Kecojevic et al. (2020) conducted a study on the impact of the COVID-19 outbreak on the mental health of undergraduate students. The results highlighted the adverse impact of the pandemic on students' mental health, highlighting the need for interventions to support students' mental well-being, which is critical to fostering positive academic behavior.

Tabla 3. Academic Behaviors

Variable	Level	Counts	Total	Proportion	p	VS-MPR*	95% CI for Proportion	
							Lower	Upper
I can learn the things taught in university.	Agree	11	16	0.688	0.210	1.122	0.413	0.890
	Neutral	4	16	0.250	0.077	1.866	0.073	0.524
	Strongly Agree	1	16	0.063	< .001	93.747	0.002	0.302
What we do at university will help me succeed in my life.	Agree	9	16	0.563	0.804	1.000	0.299	0.802
	Neutral	5	16	0.313	0.210	1.122	0.110	0.587
	Strongly Agree	2	16	0.125	0.004	16.065	0.016	0.383
How smart I am is something that I can change.	Agree	10	16	0.625	0.454	1.000	0.354	0.848
	Neutral	3	16	0.188	0.021	4.492	0.040	0.456
	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456
I am good at figuring out the best solutions to problems that I am facing	Agree	7	16	0.438	0.804	1.000	0.198	0.701
	Disagree	1	16	0.063	< .001	93.747	0.002	0.302
	Neutral	6	16	0.375	0.454	1.000	0.152	0.646
	Strongly Agree	2	16	0.125	0.004	16.065	0.016	0.383
One of my goals in class is to learn as much as I can.	Agree	8	16	0.500	1.000	1.000	0.247	0.753
	Disagree	1	16	0.063	< .001	93.747	0.002	0.302
	Neutral	3	16	0.188	0.021	4.492	0.040	0.456
	Strongly Agree	4	16	0.250	0.077	1.866	0.073	0.524
I solve problems by first breaking them into smaller stepps.	Agree	7	16	0.438	0.804	1.000	0.198	0.701
	Neutral	5	16	0.313	0.210	1.122	0.110	0.587
	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456
	Strongly disagree	1	16	0.063	< .001	93.747	0.002	0.302
I try things even I might fail.	Agree	5	16	0.313	0.210	1.122	0.110	0.587
	Disagree	2	16	0.125	0.004	16.065	0.016	0.383
	Neutral	6	16	0.375	0.454	1.000	0.152	0.646
	Strongly Agree	3	16	0.188	0.021	4.492	0.040	0.456

Table 3 presents frequencies and confidence intervals for academic behaviors related to learning, problem-solving, and self-concept. It demonstrates the following academic behaviors:

- believe in the ability to master what is taught at the university
- belief that activities at the university contribute to success in life
- understanding that intelligence is something that can be changed
- ability to find the best solutions to problems
- setting goals to maximize learning in class
- problem-solving by dividing problems into small steps
- willingness to try new things, even with the possibility of failure

The importance of proportions of agreement, neutrality, and strong agreement in the context of academic behavior provides insight into students' attitudes and approaches to learning and problem-solving. These ratios help identify patterns of academic behavior and can be used to evaluate the effectiveness of educational interventions or programs aimed at improving student attitudes and study habits. Over the past few years, many e-learning materials have been developed. Technology-enabled learning opportunities are widespread in the educational industry (Rohde et al., 2023), so future research should focus on identifying effective interventions to promote positive academic behavior, address the impact of technological advances on student engagement and learning behavior, and examine the role of teacher-student interpersonal relationships in shaping academic behavior

Conclusion and recommendation

The diversity of responses observed in the survey reflects the multifaceted nature of self-management, interpersonal skills, and academic behavior among students. This variability reflects the complex interplay between individual differences and educational experiences. The study highlights the crucial role of self-directed learning, autonomy support, and intrinsic motivation in enhancing student self-management capabilities. Educators are encouraged to develop strategies that promote independent learning and support independence, recognizing that students benefit from an environment that encourages independent thinking and self-regulation. In addition, fostering intrinsic motivation can increase student interest and self-motivation, ultimately contributing to academic achievement and personal growth.

However, the study also identifies several areas that require further investigation. For example, although surveys reveal the importance of self-management, there are gaps in understanding how different motivational factors and training methods affect self-management. Future research could examine how different educational strategies affect students' motivation and self-management skills in different contexts. Examining these aspects can provide a deeper understanding of how to adapt educational approaches to meet the diverse needs of students. By addressing existing gaps and exploring new dimensions, educators and researchers can collaboratively improve educational practices, ultimately leading to more effective and responsive learning environments.

Research limitations: The size of respondents is limited to 16 for this study as they were randomly responded. This means that it cannot be applied to the entire spectrum of the learning process. This study was completed within only one department of one university in Kazakhstan, and the findings may be influenced by individual characteristics and self-reports of the respondents. It is believed that self-reports might be inaccurate in responses.

CRediT author statement: **G.K. Kassymova**: Conceptualization, Validation, Writing draft preparation; **M. Nursa'ban**: Supervision, Data curation; **S.B. Suleimen**: Visualization, Investigation; **F. Rifqiyah:** Methodology, Reviewing; **J. Sultan**: Software, Editing.

Cite this article: Kassymova, G.K., Nursa'ban, M., Suleimen, S.B., Rifqiyah, F., Sultan, J. (2024). Evaluating Student Self-Management, Interpersonal Skills, and Academic Behaviors. *Challenges of Science*. Issue VII, pp. 38-45. https://doi.org/10.31643/2024.05

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