The influence of parental engagement on ordinary-level public secondary school students' learning behaviour at home: An Exploratory Factor Analysis

Mary William[1] and Majiyd Hamis Suru[2]
Department of Educational Management and Policy Studies, College of Education, University of Dodoma, Tanzania
[1]*Corresponding Author:* maryhopewilliam@gmail.com)
[2]majiyd.suru@udom.ac.tz, https://orcid.org/0000-0002-0256-2600)

Abstract

This study investigated parental engagement's influence on students' learning behaviours in ordinary-level day public secondary schools. The intent is to examine key factors primarily used by parents to manage the daily learning behaviours of children enrolled in day secondary schools. The objective is to identify the factors parents employ to influence students' learning behaviours in ordinary-level day public secondary schools. An ecological systems theory by Bronfenbrenner guided this study, utilising an exploratory design within a quantitative research approach. Two ordinary-level day public secondary schools were randomly sampled, and a sample size of 273 subjects was determined using the Yamane Formula. Self-prepared questionnaires with 5-point Likert-type scales were used to collect data from the 273 subjects. Inferential data were obtained through exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of 0.953 and Bartlett's Test of Sphericity of ($\chi^2 = 1868.87, p < 0.001$) *were retrieved and deemed suitable for factor analysis. Five key factors that parents use to influence students' learning at home were identified through exploratory factor analysis. These factors include parental guidance and counselling, parent-teacher communication channels, supportive learning resources, motivation and encouragement, and time management. A strong correlation is found when parents communicate with teachers to foster appropriate learning behaviours among students in ordinary-level secondary schools. The study recommends regular communication between parents and school management through class teachers. The study encourages parents to enhance the use of these five factors to instill desired learning behaviours among day students in ordinary-level secondary schools as they navigate the challenging transition from childhood to adolescence. Further, suggestions are made for future studies to explore the influence of religion and culture on students' learning behaviour as they navigate their adolescence both in and out of school.*

Keywords: *Parental engagement, students' learning behaviour, exploratory factor analysis, ordinary-level, public secondary schools*

Introduction

The ordinary-level day public secondary school students are likely to encounter a myriad of psycho-social challenges as they are at the age of transition from childhood to adolescence. Since adolescent students are more likely to encounter these psycho-social challenges, parents at home and teachers at school have to guide them strongly to balance their learning within the school and out-of-school contexts. Many factors influence the learning of adolescent students, with parental active engagement in the home environment playing a crucial role in shaping students' attitudes, behaviours, and academic outcomes. Arguably, parental engagement in shaping the learning behaviour of students enrolled in day secondary schools, both at home and out of school, can be influenced by physical and psycho-social factors entangled within the home and school contexts surrounding adolescent children.

The physical and psychological contexts surrounding a child at home significantly impact their overall development in school (Ozturk & Hill, 2020; Sharma & Shakir, 2019). Numerous studies examining the influence of parental engagement on students' learning behaviour at home (Entwistle & Peterson, 2004; Gijbels et al., 2008; Granich et al., 2010; Jamal et al., 2013; Järvenoja & Järvelä, 2005; Maitland et al., 2014; Parpala et al., 2010; Tucker et al., 2011; Uiboleht et al., 2019) have predominantly employed a qualitative approach and drawn subjective conclusions, with limited use of exploratory factor analysis. This complicates the development of a comprehensive and objective conclusion.

Despite the ongoing debate regarding the influence of the home environment on students' learning behaviour and academic achievement (Castro et al., 2015; Fan & Chen, 2001; Kraft & Rogers, 2015; Lazarides et al., 2016), a gap persists in understanding the influence of parental engagement on learning behaviour among adolescent students enrolled in ordinary-level day public secondary schools through exploratory factor analysis. Therefore, the current study employed exploratory factor analysis (EFA) to investigate the influence of parental engagement on students' learning behaviours in ordinary-level day public secondary schools. The study had two specific objectives guiding the investigation of the influence of parental engagement on students' learning behaviours in ordinary-level secondary schools:

i) Examine the underlying factors through which parents manage children's learning behaviour in ordinary-level day public secondary schools.
ii) Investigate the most impactful factors parents use to enhance children's learning behaviour in ordinary-level day public secondary schools.

Literature Review

A home environment is a more crucial factor for adolescent student learning than any other factor, and parents are pivotal in setting proper conditions and essential factors to foster learning among students enrolled in ordinary-level day public secondary schools. The home learning environment significantly influences the level of students' learning (Keser-Aschenberger et al., 2023). Students excel in their studies when they have a positive learning atmosphere at home, including access to various books and other educational materials and support, encouragement, and motivation from their parents or caregivers. Encouragement from home fosters learning and enhances students' capabilities, while discouragement from the home environment only hinders their abilities. Kiilu, Läänemets, and Kalamees-Ruubel (2020) argued that a supportive home environment enhances a child's confidence and social skills. Possibly, this confidence enables students to adapt to different environments, positively impacting their learning behaviour, including ability to focus, stay motivated, self-regulate, and adopt good study habits such as attending classes, seeking clarification, being punctual, taking notes, completing homework, and preparing for exams. Students who lack supportive home learning environments may face challenges in various aspects of their lives, including sustained learning (Keser-Aschenberger et al., 2023).

A well-organized and supportive home learning environment arguably enhances student's learning behaviours by promoting study habits and positive engagement in academic activities (Dini, 2021). Khan, Begum, and Imad (2019) argue that students from homes with high levels of support are more likely to exhibit positive learning behaviours, such as participating in classroom discussions, completing homework and assignments on time, paying attention to teachers, taking notes, actively listening to lectures, and collaborating with classmates in groups. Nevertheless, a supportive home environment with actively engaging parents and positive peer dynamics tends to foster better learning behaviours among students, contributing to their academic success and

overall development. Conversely, a hostile home learning environment leads to poor learning outcomes and negative behaviours (Kimaro, 2021).

A chaotic home environment makes it challenging for students to concentrate and focus on learning, often resulting in poor learning behaviours such as low-class attendance and a lack of focus during discussions and attentiveness in class sessions (Jain & Mohta, 2019). Arguably, students' learning behaviour at school cannot be separated from the home environment in which they spend much of their out-of-school learning. A positive and significant relationship exists between parental engagement and academic achievement (Khan et al., 2019), suggesting that environmental factors within the home greatly influence students' learning behaviours, including parental engagement and peer groups (Castro et al., 2015; Kraft & Rogers, 2015; Lazarides et al., 2016). The assumption is that when parents actively participate in their students' learning by providing support, encouragement, and a nurturing learning environment, students are more likely to exhibit positive learning behaviours. This involvement includes assisting with homework, discussing educational goals, and fostering a passion for learning (Mapigano, 2018).

Students' learning activities out-of-schools are strongly influenced by parents' engagement who dictate the home environment's psycho-social factors and physical conditions. Parents' settings of the home learning environment can either enable or restrict students from engaging actively in learning. Class preparation and practice at home are fundamental because students spend only eight to nine hours at school, with the remaining time spent at home needing to be utilised properly (Keser-Aschenberger et al., 2023). Proper utilisation of home time involves providing an educational environment, which is crucial in improving students' learning behaviour.

Younas et al. (2021) argued that a positive home environment is indicative of students' academic success. They further noted that the teaching and learning process at school is incomplete without the active engagement of parents in the home environment. Additionally, parents' awareness of their role in their student's learning is fundamental, as it fosters a positive relationship between the home environment and students' academic achievement at the secondary school level. Studies show that parents who take responsibility for their student's learning help increase their student's interest in studies (Khan et al., 2019). The

previous studies primarily utilised a qualitative approach to subjectively explore the efficacy of the home environment on students' achievement. The current study employed a quantitative and objective investigation based on exploratory factor analysis to examine the home-related factors likely to influence the learning behaviour of students enrolled in day ordinary-level public secondary schools.

A positive and structured home environment fosters discipline, time management, and self-motivation, encouraging students to take responsibility for their learning. Conversely, distractions, a lack of academic support, or a stressful home environment can negatively impact students' ability to concentrate, stay organised, and perform well academically. The home environment probably serves as the first school for students to enter and learn after birth, with parents having a critical role as teachers. The home environment and parents contribute significantly to shaping the out-of-school learning behaviour of ordinary-level public day secondary school students. Soto-Ramirez et al. (2022) argued that the home environment significantly impacts nurturing human nature, loving and caring behaviours, and sharing habits, which influence most individuals. A combination of physical and psychological environments at home has been reported to affect overall individual development from childhood to adulthood. Study rooms, water, shelter, clothing, food, and learning facilities constitute the student's physical environment at home. In contrast, student's interactions with parents, peers, neighbours, and home-related chores shape their psychological environment.

Home environment and family background are crucial elements of social composition that can positively or negatively influence learning among secondary students (Lehrl et al., 2020). Consequently, parents represent the most powerful force in achieving their student's academic success. A nurturing home learning environment can significantly enhance a child's academic performance and social-emotional well-being. In contrast, a detrimental home environment can result in poor educational outcomes, behavioural issues, and diminished self-esteem (Kiilu et al., 2020).

It has been argued that quality education does not happen by chance, it is the outcome of an effective teaching and learning process, requiring concerted efforts from teachers, schools, students, and parents within their respective home environments (Suru, 2022). Therefore, parents must collaborate with teachers by sharing their beliefs regarding their

responsibilities at home and understanding the requirements for their child's success. Parents can provide essential educational support by fostering a conducive learning environment and discussing school matters with their students. Regular communication with the students about their studies and school activities has a positive impact on learning behaviour (Kraft & Rogers, 2015). Moreover, parents who actively encourage their children (students) to complete homework and engage in regular interaction during study sessions contribute significantly to their student's comprehension of lessons and, consequently, their academic achievement (Shir et al., 2021).

Home environments vary considerably among students, as reflected by different levels of parental engagement, household facilities, parental attention, and motivational behaviour. Students from different environments experience varying impacts on their academic achievements (Cheema & Bhardwaj, 2021). Despite many parents desiring success for their children (students) in school, their lack of awareness about effective educational practices may hinder them from adopting active engagement to create a more favourable learning environment at home (Mavuso & Malahlela, 2022). Unfortunately, some parents adopt a passive attitude towards their children's (students') learning process, assuming their responsibility ends once they have entrusted students to the care of teachers, whom they believe they have paid sufficiently for their services. This attitude reflects a disconnect between parental engagement and its crucial role in supporting students' learning behaviour at home. It is arguably true that parents have the responsibility to help their children (students) learn positively, as reflected by their student's interest in their studies (Erdem & Kaya, 2020). Therefore, the current study's focus is to investigate parental engagement's influence on students' learning behaviours in ordinary-level day public secondary schools using exploratory factor analysis (EFA).

Theoretical Framework

This study is guided by the Ecological Systems Theory (EST) developed by Urie Bronfenbrenner in 1979 (Crawford, 2020; Darling, 2007). This theory suggests that students' development, including the development of learning behaviour, can likely occur over time as fragments of a complex process linking a system of interactions within the individual and between the individual and the environmental contexts (Duerden & Witt, 2010), where biological, psychological and social systems assemble (Crawford, 2020). The theory underscores the four zones of interactive systems

which can shape a child's development. Bronfenbrenner conceptualised four layers made up of microsystem, mesosystem, exosystem and macrosystem, all of which shape individual development in society (Darling, 2007; Mary & Antony, 2022).

The microsystem and mesosystem comprise two inner cycles where a child interacts with the proximal environment (parents, family members and peers) while the exosystem and macrosystem comprise two outer cycles where a child interacts with the distal environment (school environment and society where the school is territorially located). The learning behaviour of ordinary-level secondary school students intertwined in the transition stage from childhood to the adolescent stage is presumably influenced by both proximal and distal environments (Entwistle & Peterson, 2004; Granich et al., 2010; Maitland et al., 2014; Tucker et al., 2011). For day secondary school students, the home environment and school contexts both impinge their influence on their learning behaviour. As day students are likely to spend more time at home compared to school contexts, much of the learning behaviours are also obtained within the microsystem and mesosystem, where parents, family members and peers strongly influence.

This study assumes that parents are pivotal for students learning in the home environment and strongly influence adolescent students' learning process in ordinary-level day public secondary schools. This assumption is based on the fact that students enrolled in day public secondary schools spend much of their precious time in cycles of parents and family members compared to their colleagues enrolled in boarding schools. This study's premise is that ordinary-level secondary school students develop their learning behaviour organised within the school system and out-of-school activities such as homework and assignments at home. This discourse assumes that learning occurs in school contexts and broadly in the home environment. As such, the learner is situated between the two forces of the mesosystem and exosystem of the ecological systems, and the learner has to balance the academic fulcrum through organised out-of-school learning. Therefore, this study intended to examine the influence of parental engagement on students' learning behaviours in ordinary-level day public secondary schools using exploratory factor analysis (EFA).

Methodology

The study utilised a quantitative approach within an exploratory study design, employing inferential data derived from the dataset through Principal Component Analysis (PCA). Different dimensions with factor

loading indices of 0.5 or higher were deemed satisfactory for quantifying factors primarily used by parents to influence the learning behaviour among students of ordinary-level day public secondary schools. Quantitative data were collected from students in two randomly selected ordinary-level day public secondary schools out of twelve in the Nanyumbu District Council, Mtwara Region. The Nanyumbu District was chosen based on several factors critical to ordinary secondary school students' time learning at home and in school environments. In Nanyumbu district, day students from ordinary-level public secondary schools often walk long distances to reach school due to the absence of school dormitories and hostels. This lengthy commute consumes a significant amount of time and energy, leaving students exhausted when they arrive at school and when they return home. Consequently, day students from the selected ordinary-level secondary schools will likely have little time or energy left to study and complete homework, which can impact their learning behaviour.

The population of this study was drawn from form I to form IV students enrolled in ordinary-level day public secondary schools in Nanyumbu District Council of Mtwara region, Tanzania. Probability sampling was used to select two out of twelve ordinary-level public secondary schools that enrolled day students who commute to school and back home each day. The selection of two ordinary-level public secondary schools from the Nanyumbu District Council was conducted by writing the names of each school on 12 pieces of white paper. The 12 pieces of paper with the names of the schools were neatly folded, placed into a jar, closed, and shuffled five times. The jar was then opened, the pieces of paper with school names were spread on the floor, and only two pieces were picked, opened, and identified as the two secondary schools representing the twelve. The two randomly selected day public secondary schools in the Nanyumbu District Council had a total population of 866 students (school X had 319 students, while school Y had 547 students).

The sample size for study respondents was derived using the adjusted Yamane's formula (Adam, 2020). The formula produced a sample size of approximately 273 students from 2 ordinary-level day public secondary schools whose total population is 866. The following mathematical equation represents the calculation of the sample size:

$$n = \frac{1}{\left(1 + Ne^2\right)}$$

Where:
n = desired sample size for the study
N = the population of the study, calculated as:
N = population of respondents from school X + population of respondents from school Y.
N = 319 + 547
N = 866
e = desired margin of error (5%)
A margin of error of 0.05 was selected since it is logistically difficult to manage a larger sample size (Mugenda et al., 2003).
Thus:

$$n = \frac{1}{(1+866x0.5^2)} = 273.617 \approx 273$$

$$n = 273$$

Therefore, the sample size of the study comprised 273 students from ordinary-level day public secondary schools in Nanyumbu District, Mtwara, Tanzania.

Study Instruments

Questionnaires were utilised to collect data from two hundred seventy-three students from ordinary-level day public secondary schools in the study location. The questionnaires consisted of item statements structured on a 5-point Likert-type scale. They were distributed to two hundred seventy-three (273) students in a designated classroom with the assistance of teachers during prearranged lesson sessions. Students were asked to complete consent forms with the help of the classroom teachers after voluntarily agreeing to participate in the study. Each respondent was requested to rate the item statements on a 5-point scale, where 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree. This process involved direct interaction with respondents, providing the opportunity to clarify any questions that arose during the data collection exercise. Completed questionnaires were coded and entered into the Statistical Package for Social Science (SPSS) software version 26. Exploratory factor analysis was conducted to identify underlying factors or dimensions that explain the influence of parent engagement on ordinary-level secondary school students' learning behaviour at home.

Validity and Reliability

The validity of the study instruments was ensured through master's students, instructors, and supervisors. The process typically involved distributing questionnaires to these groups. Master's students, instructors, and supervisors were asked to evaluate the suitability of the study instruments, identify potential issues, ambiguities, or errors in item statements, and provide necessary comments and recommendations. The feedback received was incorporated to align with the context of the study. In addition to validating the questionnaires, a reliability test was conducted to measure the internal consistency of the underlying factors related to the influence of parent engagement on ordinary-level secondary school students' learning behaviour at home. Cronbach Alpha indices of 0.848 for the influence of parents' engagement and 0.764 for learning behaviour were obtained. These indices were deemed appropriate and acceptable as they fall within the internal consistency range of 0.7 to 0.9, indicating that the measurement instrument is reliable, as suggested in most social science research (Youssef et al., 2023). Therefore, the internal consistency of the questionnaire for this study was considered acceptable for examining the influence of parent engagement on ordinary-level secondary school students' learning behaviour at home (see Table 1).

Table 1: Reliability statistics for item statements that explain the influence of the home environment

Cronbach's Alpha	Number of items
.848	15

Table 2: Reliability statistics for item statements students' learning behaviours

Cronbach's Alpha	Number of items
.764	12

Data Analysis

Students were instructed to rate item statements about how parents engage them in learning at home. The respondents were instructed to rate the item statements on a 5-point Likert-type scale represented by 5= strongly agree, 4= Agree, 3= neutral, 2= Disagree, and 1= strongly disagree. The loading extraction was retrieved from the SPSS dataset, as shown in Table 3. The dataset of the study sample was prepared to determine suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) test was conducted to assess the adequacy of the study sample for computing the correlation matrix of the factors (variables) and to determine the KMO value while controlling all other factors. The Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy of 0.953 was

retrieved and considered suitable for factor analysis, as a KMO rating of 0.774 is a strong candidate for factor analysis (Li et al., 2020; Salleh et al., 2023; Shrestha, 2021). In addition, Bartlett's Test of Sphericity was performed to assess the adequacy of the correlation matrix in factor analysis. The result of ($\chi^2 = 1868.87, p < 0.001$) was retrieved, indicating that the correlation matrix was appropriate for factor analysis. Furthermore, different factors were retrieved from the questionnaire item statements after an exploratory factor analysis.

The extracted item statements which had equal or above 0.5 (≥ 0.5) extraction loading indicated a strong correlation between parental engagement and students' learning behaviour at ordinary-level day public secondary schools in the selected study location. Conversely, statements with lower factor loadings, less than 0.5 (< 0.5) *extraction loadings* such as "My parents model the behaviour they expect to see in me regarding learning and education," were not considered significant contributors. Therefore, five statements were removed from the rotated factor matrix. The removal of five statements means that some statements were insignificant in understanding the influence of parental engagement on ordinary-level secondary school students' learning behaviours at home.

Table 3: Communalities after Extraction

Statements	Initial	Extraction
My parents encourage me to complete my schoolwork and assignments regularly.	1.000	.545
My parents actively communicate with me about my schoolwork and learning process.	1.000	.517
My parents provide me with educational resources such as books and other learning materials.	1.000	.511
My parents help me set priorities and break down complex tasks into manageable steps	1.000	.499
My parents encouraged me to take ownership of my learning by setting personal educational goals.	1.000	.971
My parents praise and acknowledge my efforts and academic achievements.	1.000	.973
My parents offer assistance and guidance when I face learning challenges	1.000	.986
My parents encourage me to ask questions and seek clarification when I do not understand something.	1.000	.976
My parents actively involve themselves in my educational progress by attending parent-teacher conferences and school events	1.000	.982
My parents track and limit my screen time to ensure a healthy balance between study and leisure activities.	1.000	.558
My parents support my efforts to develop critical thinking and problem-solving skills through educational activities	1.000	.444
My parents actively seek feedback from me regarding their involvement in my learning process	1.000	.497
My parents helped me develop good time management skills to balance my studies and extracurricular activities.	1.000	.618
My parents support and encourage me to pursue my interests and hobbies outside of school.	1.000	.656
My parents model the behaviour they expect to see in me regarding learning and education	1.000	.435
My parents let me collaborate and discuss my learning with peers or siblings.	1.000	.971
My parents encouraged me to embrace challenges and learn from failures.	1.000	.973
My parents provide constructive feedback to help me improve my learning and performance.	1.000	.986
My parents motivate me to study and complete my homework independently.	1.000	.976
My parents created a quiet and suitable study space for me at home.	1.000	.982
My parents discuss my long-term educational and career goals with me	1.000	.458
My parents set specific study times or routines to support my learning at home.	1.000	.619
My parents help me when I face difficulties with my studies	1.000	.598
My parents engage in discussions with me about the importance of education and learning.	1.000	.705
My parent creates a positive and supportive learning environment at home.	1.000	.629

Source: Field data (2023)

A Principal Component Analysis (PCA)

Using the Principal Component Analysis (PCA) method, an exploratory factor analysis was conducted on the 20 items to examine the influence of the parents' engagement on students' learning behaviours at ordinary-level day public secondary schools. The factor analysis revealed the underlying dimensions that explain the correlations between parents' engagement and the learning behaviour of ordinary-level day public secondary school students in the study location. Factors that elucidated the correlations between the parents' engagement and students' learning behaviour in ordinary-level day public secondary school were calculated using Varimax with Kaiser Normalization of 0.953 to understand the underlying factors (dimensions). Consequently, item statements with factor loadings less than 0.5 were deemed less significant in explaining the correlations between parents' engagement and students' learning behaviour at ordinary-level day public secondary schools.

After running exploratory factor analysis through PCA, only five factors with loading indices above 0.5 were retained for further analysis because extraction loadings above 0.5 are a strong candidate to explain the correlation between factors. The numbered factors comprising coded item statements and factor loadings are briefly accounted for hereunder:

Factor 1: This factor represents parental engagement in providing guidance and counselling to influence the learning behaviour of ordinary-level day public secondary school students at home. It is explained by six-item statements (Q1, Q2, Q4, Q6, Q13, Q18) with factor loadings ranging from 0.517 to 0.986.

Factor 2: This factor represents parental engagement in parent-teacher communication channels to influence the learning behaviour of ordinary-level day public secondary school students at home. It is explained by six-item statements (Q7, Q8, Q11, Q12, Q19, Q20) with factor loadings ranging from 0.629 to 0.982.

Factor 3: This factor represents parental engagement in providing supportive learning resources to influence the learning behaviour of ordinary-level day public secondary school students at home. It is explained by five-item statements (Q3, Q14, Q16, Q17, Q20) with factor loadings ranging from 0.511 to 0.986.

Factor 4: This factor represents parental engagement in motivation and engagement to influence the learning behaviour of ordinary-level day public secondary school students at home. It is

explained by seven-item statements (Q1, Q6, Q11, Q12, Q13, Q15, Q26) with factor loadings ranging from 0.545 to 0.986.

Factor 5: This factor represents parental engagement in time management to influence the learning behaviour of ordinary-level day public secondary school students at home. It is explained by four-item statements (Q1, Q9, Q10, Q17) with factor loadings ranging from 0.545 to 0.619.

Table 4 indicates the rotated factor matrix of the retrieved items from the dataset and their respective factor loadings.

Table 4: Rotated Factor Matrix

	Factor				
	1	**2**	**3**	**4**	**5**
Q1	.545			.545	**.545**
Q2	.517				
Q3			.511		
Q4	.971				
Q5					
Q6	.986			.986	
Q7		.976			
Q8		.982			
Q9					**. 558**
Q10					**.618**
Q11		.656		.656	
Q12		.971		.971	
Q13	.973			.973	
Q14			.986		
Q15				. 976	
Q16			.982	.982	
Q17			.619		**.619**
Q18	.598				
Q19		.705			
Q20		.629	.629		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization

Source: Field data analysed in 2023

Understanding the variance explained by each factor was achieved through the initial eigenvalues and the extraction and rotation summation of squared loadings. Five factors with eigenvalues greater than one

emerged from this factor analysis as appropriate indices for further analysis. The initial eigenvalue of factor 1 is 4.568, accounting for 22.842% of the variation. The extraction and rotation sums of squared loadings are 4.568 and 3.191, respectively, which explains this level of variance. After extraction and rotation, factor 2 explains a significant percentage of the variance, with extraction and rotation sums of squared loadings of 2.777 and 2.820, respectively. Factor 2's initial eigenvalue is 2.777, representing 13.885% of the variance. Following extraction and rotation, factor 3 explains 9.399% of the variation, with extraction and rotation sums of squared loadings of 1.880 and 2.340, respectively. The initial eigenvalue of factor 3 is 1.880, accounting for 9.399% of the variation. Factor 4 has an initial eigenvalue of 1.586, explaining 7.932% of the variance, with extraction and rotation sums of squared loadings of 1.586 and 1.728, respectively. Factor 5's initial eigenvalue is 1.252, accounting for 6.260% of the variation; after extraction and rotation, it still accounts for a significant percentage of the variance, with extraction and rotation sums of squared loadings of 1.252 and 1.639, respectively.

Table 5: The variance explained by exploratory factor analysis for the influence of parents' engagement on students' learning behaviours

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of variance	Cumulative %
1	4.568	22.842	22.842	4.568	22.842	22.842	3.191	15.953	15.953
2	2.777	13.885	36.727	2.777	13.885	36.727	2.820	14.101	30.054
3	1.880	9.399	46.126	1.880	9.399	46.126	2.340	11.701	41.755
4	1.586	7.932	54.058	1.586	7.932	54.058	1.728	8.641	50.396
5	1.252	6.260	60.318	1.252	6.260	60.318	1.639	8.194	58.590

Source: Data extracted from exploratory factor analysis in 2023

A scree plot derived from PCA was used to determine the optimal number of components or factors to retain in a factor analysis. For identifying factors that influence students' learning behaviour at home, the scree plot was used to decide how many of these factors were most crucial in explaining how parental engagement influences the learning behaviour of students enrolled in ordinary-level day public secondary schools. Specifically, Figure 1 indicates the scree plots representing the eigenvalues of each factor in descending order, with the x-axis representing the number of factors and the y-axis indicating the eigenvalues.

The scree plot in Figure 1 typically shows a steep decline in eigenvalues, and the "elbow", or point where the eigenvalues level off, was considered the cut-off point for retaining significant factors. The "elbow" in Figure 1 indicates a balance between capturing sufficient variance in the data (representing relevant factors parents use to influence students' learning at home) and avoiding overfitting, ensuring that the retained factors contribute to a meaningful influence of the home environment (parents' engagement) on students' learning behaviours in ordinary-level day public secondary schools. The criterion of having an eigenvalue greater than 0.5 was used in this analysis to determine how many home-related factors would be extracted, suggesting that five factors to the left of the scree plot are significant in explaining parental influence on students' learning behaviour in the home environment.

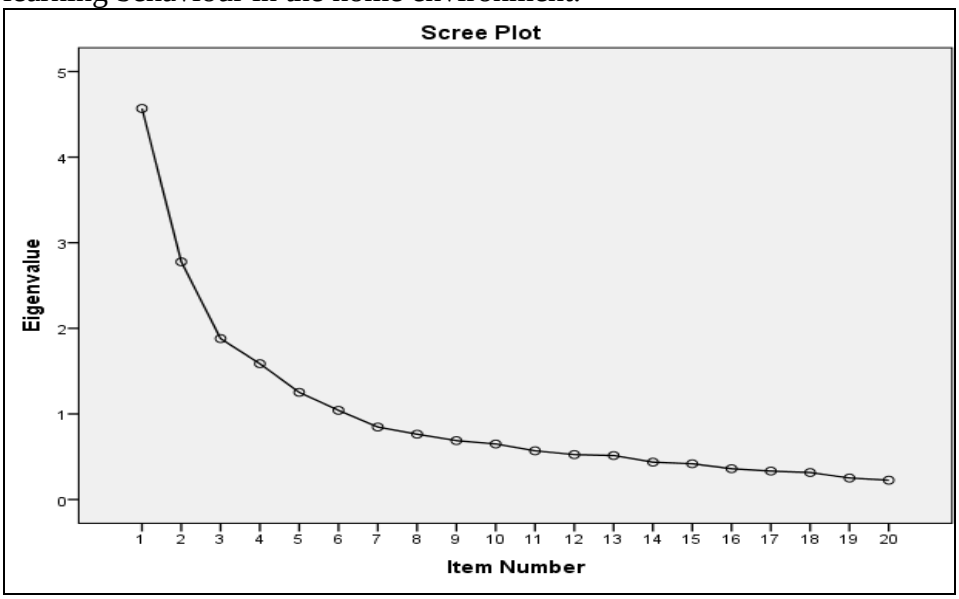

Figure 1: Scree plot graph
Source: Data extracted from Exploratory Factor Analysis

After conducting exploratory factor analysis using PCA and the Kaiser-Meyer-Olkin (KMO) test to evaluate the adequacy of the study sample, only five factors were identified that strongly explain the influence of active parental engagement on ordinary-level day public secondary school students' learning behaviour at home.

Table 6: Extracted and identified factors by Exploratory Factor Analysis (EFA)

Factor	Influencers of Student Learning Behaviours at Home	Component
1	Guidance and counselling	Q1, Q2, Q4, Q6, Q13, and Q18
2	Parent-teacher channels of communication	Q7, Q8, Q11, Q12, Q19, and Q20
3	Supportive learning resources	Q3, Q14, Q16, Q17, and Q20
4	Motivation and engagement	Q1, Q6, Q11, Q12, Q13, Q15, and Q16
5	Time management	Q1, Q9.Q10 and Q17

Source: Home-related factors derived from exploratory factor analysis

Table 6 indicates the factors retrieved by exploratory factor analysis (EFA) that likely explain parental influence on ordinary-level day public secondary school students' learning behaviour at home. The extracted factors included parental guidance and counselling, parent-teacher communication channels, provision of supportive learning resources, parental motivation and encouragement, and time management.

Findings and Discussion

Five factors emerged from an exploratory factor analysis, strongly explaining the influence of parental engagement on ordinary-level day public secondary school students' learning behaviour at home. Parental guidance and counselling, communication channels with teachers, provision of supportive resources, motivation and encouragement, and time management exhibited a strong correlation that consistently explains the influence of parents' engagement on ordinary-level day public secondary school students' learning behaviour at home. Therefore, the discussion of the findings from the current study focuses on the five factors through which parents are likely to influence the learning behaviour of their children enrolled in ordinary-level day public secondary schools. The five factors comprise guidance and counselling, communication channels with teachers, provision of supportive resources, motivation and encouragement, and time management.

Parental engagement in guidance and counselling

Parental engagement in guidance and counselling to influence children's learning behaviour at home is explained by six-item statements (Q1, Q2, Q4, Q6, Q13, Q18) with factor loadings ranging from 0.517 to 0.986. These six-item statements explain how parental guidance and counselling help children complete assignments, learn, set priorities, break down complex tasks, and balance studies and extracurricular activities. These findings align with Bronfenbrenner's ecological systems theory (Crawford, 2020; Darling, 2007; Duerden & Witt, 2010; Ferguson et al., 2013; Mary & Antony, 2022) and concur with previous research, which suggests that guidance and counselling are among the most effective forms of parental engagement for fostering suitable learning behaviours in students at home (Masek, 2017; Ozturk & Hill, 2020; Sharma & Shakir, 2019).

In addition, the parent engagement in guidance and counselling in influencing students' learning behaviour at home aligns with the findings of Bancin et al. (2019), which attributed students' unacceptable learning behaviours, such as skipping lessons, to a lack of parental engagement in guidance and counselling for their students. The study by Bancin et al. (2019) revealed that counselling provided by teachers at school and parents at home helps students become self-fulfilled, well-adjusted, and more responsive to learning.

The current study's findings support the notion that students who receive regular guidance and guidance from their parents at home and teachers during classroom instruction have a greater opportunity to excel academically and adapt to learning challenges than those who do not. Conversely, the current study's findings contradict those of Watli (2018), which indicated that an excessive focus on guidance counselling and parental involvement might unintentionally place undue pressure on students' learning behaviour, resulting in stress and anxiety. Watli (2018) suggests that an overemphasis by parents on students' learning and academic achievement can lead to burnout among students and a constant focus on guidance and counselling may exacerbate learning behaviour at home.

Parent-teacher communication channels

Parental engagement in parent-teacher communication channels to influence the learning behaviour of ordinary-level day public secondary school students at home is explained by six questionnaire items (Q7, Q8, Q11, Q12, Q19, Q20) with factor loadings ranging from 0.629 to 0.982.

These six items explain how parent-teacher communication channels influence children's learning behaviour in the following ways: 1) offering assistance to students in overcoming learning challenges, 2) providing students with the freedom to ask questions and seek clarification, 3) enhancing students' efforts to develop critical thinking and problem-solving skills, 4) allowing parents to seek feedback from school management about students' learning progress, 5) boosting students' confidence in working independently, and 6) enabling parents to provide a quiet and suitable study space at home for students. These findings strongly align with Castro et al. (2015), who argued that the parental models most associated with students' high achievement are those emphasising general supervision of children's learning activities.

Furthermore, the findings of this study align with Kraft and Rogers (2015), who emphasize the importance of educational policies that promote and facilitate teacher-to-parent communication to enhance parental involvement in students' learning. The study also supports Castro et al. (2015), who identified a strong correlation between parent-teacher communication and improved students' reading habits at home. The findings of this study regarding parent-teacher communication channels align with those of Mazikana (2023), who argued that when students are supported and motivated by both teachers and parents, they are more likely to develop self-esteem, strive for academic excellence, acquire additional competencies, and remain in school longer.

Furthermore, the findings in this study are consistent with Lv et al. (2019 research), which highlighted the significance of a strong, positive relationship between parental and teacher involvement in schools and its impact on student's education, including the cultivation of good learning behaviours. This study emphasises parental engagement, communication, volunteering, home learning, decision-making, and community collaboration to enhance the learning behaviours of students enrolled in ordinary-level day public secondary schools. However, it disagrees with Fan and Chen (2001), whose findings indicated that parental home supervision has the weakest relationship with students' academic achievement. The parent-teacher communication channels highlight the importance of parents being attentive to what occurs in school contexts.

Parental engagement in providing supportive learning resources

Parental engagement in the provision of supportive learning resources to influence the learning behaviour of ordinary-level day public secondary

school students at home is explained by five questionnaire items (Q3, Q14, Q16, Q17, Q20) with factor loadings ranging from 0.511 to 0.986. These five items explain how parents engage in their children's learning behaviour in the following ways: 1) providing textbooks and other school stationery, 2) supporting students' pursuit of interests and hobbies outside of school, 3) allowing students to collaborate and learn with peers, 4) encouraging students to embrace challenges and learn from failures, and creating a quiet and suitable study space at home for students.

These findings align with Bajar and Bajar (2019), who noted that the availability of educational resources and other supportive learning materials enhances students' commitment to self-learning at home, providing them with additional opportunities for inquiry and knowledge development to reinforce what they learn in the classroom. Impliedly, the provision of relevant learning indicates that parents are dedicated to providing learning resources through which students can benefit academically. Conversely, the findings in this study contradict those of Al-Madani (2020), who reported that the availability of learning resources (books and materials) does not consistently lead to improved student learning behaviours. Contrary to Al-Madani's (2020) findings, the results of this study indicated that the effectiveness of supportive learning resources depends on students' self-learning attitudes. In some cases, students may not fully utilise the available resources, making the correlation between resource availability and improved learning behaviours more complex. Moreover, the findings in this study concur with those of Gunaretnam (2021) and Rafi et al. (2020), who reported that parents need to inspire their children to develop learning habits and address the challenges they face in their schooling through encouragement rather than punishments as these tended to create fear of the expenses of self-confidence for the student.

Parental engagement in motivation and encouragement

Parental engagement in motivation and encouragement to influence the learning behaviour of ordinary-level day public secondary school students at home is explained by seven questionnaire items (Q1, Q6, Q11, Q12, Q13, Q15, Q26) with factor loadings ranging from 0.545 to 0.986. These seven items describe the ways parents motivate and encourage their children's learning behaviour: 1) regularly encouraging students to work on assignments, 2) praising and acknowledging students' efforts and academic achievements, 3) encouraging the development of student's critical thinking and problem-solving skills, 4) following up on feedback

about students' learning progress from school management, 5) encouraging students to balance self-learning and extracurricular activities, 6) modelling positive learning behaviours at home to motivate students, and 7) allowing students to collaborate and discuss with peers through out-of-school learning.

The findings on parental engagement in motivation and encouragement contrast with those of Muhammad-Fuad, Edi-Suyanto, and Ulul (2021), who reported that students accustomed to external rewards and motivation become less interested in learning and rely instead on external incentives. According to Muhammad-Fuad, Edi-Suyanto, and Ulul (2021), excessive external pressure and motivation, including encouragement, can negatively affect students' learning behaviours.

Additionally, Iqmaulia and Usman (2019) argue that overemphasising achievement and external praise can foster a sense of competition and performance anxiety among students, potentially hindering their intrinsic motivation and genuine love for learning. Furthermore, a study by Lazarides et al. (2016) revealed that students in the high-motivation group are significantly less likely to aim for higher academic achievement.

Based on the arguments from these previous studies, this study suggests that parents must strike a balance to allow day secondary school students to develop their interests and internal drive for learning, as an excessive focus on external motivation might unconsciously hinder the development of self-regulated and self-motivated learning.

Parental engagement in students' time management

Parental engagement in time management to influence the learning behaviour of ordinary-level day public secondary school students at home is explained by four questionnaire items (Q1, Q9, Q10, Q17) with factor loadings ranging from 0.545 to 0.619. These four items describe the ways parents manage time to influence their children's learning behaviour: 1) regularly encouraging students to finish schoolwork and assignments, 2) actively involving themselves in their children's learning progress by attending parent-teacher conferences and school events, 3) tracking students' learning and setting a schedule to ensure a healthy balance between study and leisure time, and 4) encouraging students to embrace challenges and learn from failures. These findings indicate that parents' engagement in their students' time management for learning at home

focused on emphasising the creation of timetables for school activities, homework, and assignments.

The results suggest that students with effective time management behaviours exhibit better classroom attendance, attentiveness, and participation, which are hallmarks of good learning behaviours. Conversely, these findings contradict those of Roshanisefat, Azizi, and Khatony (2021), who reported that excessive emphasis on structured time management and adherence to strict schedules might lead to increased stress and anxiety among students. According to Roshanisefat, Azizi, and Khatony (2021), the stress and anxiety created by the pressure to meet specific deadlines may not always consider individual variations in learning paces and preferences. Consequently, effective time management could inadvertently contribute to negative learning behaviours, such as procrastination and burnout (Kordzanganeh et al., 2021).

Additionally, structuring students' time may limit their exploration, creativity, and self-directed learning opportunities. The findings reveals that strict time management for students' learning may hinder the development of essential skills, such as critical thinking and problem-solving, as students may become overly reliant on following predetermined schedules. Therefore, this study opines that parents strongly influence students learning behaviour in both school and home environments. Parental engagement appears to affect students' learning behaviour directly, enabling ordinary-level students enrolled in day secondary school to manage their learning schedules (time management), set goals, and seek support when necessary. Conversely, parents' discussions about school experiences and homework foster a supportive environment encouraging students to take responsibility for their learning. These findings align with Ecological Systems Theory (EST) as articulated by Bronfenbrenner (Duerden & Witt, 2010), which posits that individual development, including the development of learning behaviour, constitutes a complex process linking systems of interactions both within the individual and between the individual and environmental contexts. For secondary school students, these complex processes shape students' learning behaviour and are situated between the home and school contexts. Nonetheless, this study's findings contrast with the concerns raised by Roshanisefat, Azizi, and Khatony (2021) regarding the potential negative impacts of excessive focus on structured time management, such as increased stress, anxiety, procrastination, and burnout. Additionally, strict time management may limit opportunities for exploration,

creativity, and self-directed learning, potentially hindering the development of critical thinking and problem-solving skills.

Conclusion

Using EFA, five factors were identified that indicate how parents engage their children enrolled in ordinary-level day public secondary schools to enhance their learning behaviour at home and in school contexts. These five factors are guidance and counselling, parents' communication with teachers, provision of supportive resources, motivation and encouragement, and time management of students' learning. These factors were found to have a strong correlation that explains parental influence on students' learning behaviour at home.

Students enrolled in ordinary-level day public secondary schools were more likely to become responsible learners when parents actively engaged them in learning through continuous conversations and communication with teachers. A strong correlation is found when parents communicate with teachers to foster appropriate learning behaviours. Parents' ongoing conversations and frequent communication with class teachers provide proper direction to students' learning behaviour. When parents' express concerns about their children's learning challenges with school management, these concerns are communicated to classroom teachers. Regular guidance and counselling sessions conducted by teachers at school and parents at home help students become self-fulfilled, well-adjusted, and more responsive to time management in their learning.

Furthermore, students enrolled in ordinary-level day public secondary schools receive regular support and guidance from their parents at home and teachers during classroom instruction. They demonstrate a greater inclination to learn at home and in school contexts, and they adapt better to learning challenges than those who do not. Therefore, parents should emphasise guidance and counselling, conversations and communication with teachers, provision of supportive resources, motivation and encouragement, and effective time management to enhance student learning behaviour in both home and school environments. Consequently, parents and school management should work together to create and enhance a supportive learning environment that would empower the learning of students enrolled in ordinary-level day public secondary schools.

Recommendations

This study's recommendations align with the learning process between home and school environments, considering the preferable policy context. At home, parents and guardians are encouraged to create essential learning conditions for their students during the secondary school period, when they transition from adolescence to young adulthood. Parents and guardians should actively engage in school-organized programs and establish communication channels with schools that promote learning both at home and in school environments. They should regularly discuss their child's learning progress and any challenges they encounter with teachers. Additionally, parents need to offer guidance and counselling, encourage time management skills, and cultivate a motivating learning environment at home.

Teachers and other school personnel should communicate effectively with parents or guardians when developing and implementing study programs. Clear and intentional communication should exist between teachers, school management, and parents or guardians through workshops, online resources, or dedicated communication platforms. School management and class teachers should provide resources and support systems to help parents understand and effectively manage their students' learning behaviour at home. In addition to parents' engagement, the study underscores the value of school culture and managerial practices that support students' active learning behaviour in ordinary-level day public secondary schools.

The study encourages parents to enhance the use of these five factors (guidance and counselling, parents' communication with teachers, provision of supportive resources, motivation and encouragement, and time management) to instil desired learning behaviours among day students in ordinary-level secondary schools as they navigate the challenging transition from childhood to adolescence. Additionally, the study strongly recommends regular communication between parents and school management through class teachers to improve students' learning at home and in the school context. Further, future studies are suggested to explore the influence of religion and culture on students' learning behaviour as they navigate their adolescence both in and out of school.

References

Adam, A. M. (2020). Sample size determination in survey research. *Journal of Scientific Research and Reports*, *26*(5), 90–97. https://doi.org/10.9734/jsrr/2020/v26i530263

Al-Madani, F. M. (2020). The impact of quality content educational resources on students' academic achievement: Survey research (on the example of Northern Border University, arar). *Образование и наука*, *22*(5), 132-149.

Bajar, J. T., & Bajar, M. A. (2019). Technology: Drop-out prevention by increasing parent involvement through text messaging. *Sulo: International Refereed Journal of Multidisciplinary Sciences*, *7*(1), 72-75.

Bancin, I. K., Mudjiran, M., & Rusdinal, R. (2019). Development of guidance and counselling module on self-regulation of students in social relations. *Journal of Counselling and Educational Technology*, *2*(1), 6-8. https://doi.org /10. 32698 /0341.

Castro, M., Expósito-Casas, E., López-Martín, E., Lizasoain, L., Navarro-Asencio, E., & Gaviria, J. L. (2015). Parental involvement on student academic achievement: A meta-analysis. *Educational Research Review*, *14*, 33-46. https://doi.org/10.1016/j.edurev.2015.01.002

Cheema, G. K., & Bhardwaj, M. (2021). Study of self-esteem and academic achievement in relation to home environment among adolescents. *European Journal of Molecular & Clinical Medicine*, *8*(1), 1978-1987.

Crawford, M. (2020). Ecological systems theory: Exploring the development of the theoretical framework as conceived by Bronfenbrenner. *Journal of Public Health Issues and Practices*, *4*(2), 2–7. https://doi.org/10.33790/jphip1100170

Darling, N. (2007). Ecological systems theory: The person in the center of the circles. *Research in Human Development*, *4*(3–4), 203–217. https://doi.org/10.1080/15427600701663023

Dini, J. P. A. U. (2021). The role of student's parent in shaping home learning environment (HLE) for early childhood. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, *5*(2), 1512-1535.

Duerden, M. D., & Witt, P. A. (2010). An ecological systems theory perspective on youth programming. *Journal of Park and Recreation Administration Summer*, *28*(2), 108–120.

Entwistle, N. J., & Peterson, E. R. (2004). Conceptions of learning and knowledge in higher education: Relationships with study behaviour and influences of learning environments. *International Journal of Educational Research*, *41*(6), 407–428. https://doi.org/10.1016/j.ijer.2005.08.009

Erdem, C., & Kaya, M. (2020). A meta-analysis of the effect of parental involvement on students' academic achievement. *Journal of*

Learning for Development, *7*(3), 367–383. https://doi.org/10.56059/jl4d.v7i3.417

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review*, *13*(1), 1–22. https://doi.org/10.1023/A:1009048817385

Ferguson, K. T., Cassells, R. C., MacAllister, J. W., & Evans, G. W. (2013). The physical environment and child development: An international review. *International Journal of Psychology*, *48*(4), 437–468. https://doi.org/10.1080/00207594.2013.804190

Gijbels, D., Segers, M., & Struyf, E. (2008). Constructivist learning environments and the (im)possibility to change students' perceptions of assessment demands and approaches to learning. *Instructional Science*, *36*(5-6), 431–443. https://doi.org/10.1007/s11251-008-9064-7

Granich, J., Rosenberg, M., Knuiman, M., & Timperio, A. (2010). Understanding student's sedentary behaviour: A qualitative study of the family home environment. *Health Education Research*, *25*(2), 199–210. https://doi.org/10.1093/her/cyn025

Gunaretnam, V. (2021). A Study on increasing positive behaviours using positive reinforcement techniques. *International Journal of Research and Innovation in Social Science*, *05*(07), 198–219. https://doi.org/10.47772/IJRI

Iqmaulia, K., & Usman, O. (2019). Needs influence, reward, interest and motivation learning environment on learning motivation in higher education. *Reward, Interest and Motivation Learning Environment on Learning Motivation in Higher Education (December 27, 2019)*.

Jain, K., & Mohta, S. (2019). The impact of home environment on academic achievement of secondary school students. *International Journal of Trend in Scientific Research and Development*, *3*(4), 808-811.

Jamal, F., Fletcher, A., Harden, A., Wells, H., Thomas, J., & Bonell, C. (2013). The school environment and student health: A systematic review and meta-ethnography of qualitative research. *BMC Public Health*, *13*(1), 1–11. https://doi.org/10.1186/1471-2458-13-798

Järvenoja, H., & Järvelä, S. (2005). How students describe the sources of their emotional and motivational experiences during the learning process: A qualitative approach. *Learning and Instruction*, *15*(5), 465–480. https://doi.org/10.1016/j.learninstruc.2005.07.012

Keser Aschenberger, F., Radinger, G., Brachtl, S., Ipser, C., & Oppl, S. (2023). Physical home learning environments for digitally-supported learning in academic continuing education during the

COVID-19 pandemic. *Learning Environments Research*, *26*(1), 97-128.

Khan, F. N., Begum, M., & Imad, M. (2019). Relationship between students' home environment and their academic achievement at secondary school level. *Pakistan Journal of Distance and Online Learning*, *5*(2), 223-234.

Kiilu, K., Läänemets, U., & Kalamees-Ruubel, K. (2020, May). Skills for creating supportive learning environments–an essential component of teachers' professional competence. In *Society. Integration. Education. Proceedings of the International Scientific Conference* (Vol. 3, pp. 302-315).

Kimaro, A. R. (2021). The effects of home environment on students' academic achievement in selected ward secondary schools in Longido District-Arusha Region. *Journal of Adult Education in Tanzania*, *23*(1).

Kordzanganeh, Z., Bakhtiarpour, S., Hafezi, F., & Dashtbozorgi, Z. (2021). The relationship between time management and academic burnout with the mediating role of test anxiety and self-efficacy beliefs among university students. *Journal of Medical Education*, *20*(1).

Kraft, M. A., & Rogers, T. (2015). The underutilized potential of teacher-to-parent communication: Evidence from a field experiment. *Economics of Education Review*, *47*, 49–63. https://doi.org/10.1016/j.econedurev.2015.04.001

Lazarides, R., Viljaranta, J., Aunola, K., Pesu, L., & Nurmi, J. E. (2016). The role of parental expectations and students' motivational profiles for educational aspirations. *Learning and Individual Differences*, *51*(63099), 29–36. https://doi.org/10.1016/j.lindif.2016.08.024

Lehrl, S., Evangelou, M., & Sammons, P. (2020). The home learning environment and its role in shaping student's educational development. *School Effectiveness and School Improvement*, *31*(1), 1-6.

Li N, Huang J, Feng Y (2020). Construction and confirmatory factor analysis of the core cognitive ability index system of ship C2 system operators. *PLoS ONE* *15*(8): e0237339. https://doi.org/10.1371/journal.pone.0237339.

Lv, B., Lv, L., Yan, Z., & Luo, L. (2019). The relationship between parental involvement in education and student's academic/emotion profiles: A person-centred approach. *Student and Youth Services Review*, *100*, 175-182.

Maitland, C., Stratton, G., Foster, S., Braham, R., & Rosenberg, M.

(2014). The dynamic family home: A qualitative exploration of physical environmental influences on student's sedentary behaviour and physical activity within the home space. *International Journal of Behavioral Nutrition and Physical Activity*, *11*(1), 1–12. https://doi.org/10.1186/s12966-014-0157-1

Mapigano, R. F. (2018). *The Effects of Home Learning Environment on Academic Achievements among Primary School Students in Tanzania: The Case of Mbeya City,* [Doctoral dissertation, The Open University of Tanzania].

Mary, E., & Antony, A. (2022). Framing childhood resilience through Bronfenbrenner's ecological systems theory: A discussion paper. *Cambridge Educational Research E-Journal*|, *9*(November), 2022.

Masek, A. (2017). Establishing supervisor-students' relationships through mutual expectation: A study from supervisors' point of view. *IOP Conference Series: Materials Science and Engineering*, *226*(1). https://doi.org/10.1088/1757-899X/226/1/012200

Mavuso, F. T. N., & Malahlela, T. (2022). Barriers to parents supporting student's learning in Volksrust circuit, Gert Sibande District in Mpumalanga Province. *The 7th annual international conference on public administration and development alternatives (IPADA), 14–16 September 2022*

Mazikana, A. T. (2023). *The role of parent involvement at the ECD level at your school*. https://ssrn.com/abstract=4378470 or http://dx.doi.org/10.2139 /ssrn. 4378470

Mugenda, O.M. & Mugenda A.G. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Acts Press, Nairobi

Muhammad Fuad, M. F., Edi Suyanto, E. S., & Ulul, A. M. (2021). Can 'reward and punishment' improve student motivation? *European Online Journal of Natural and Social Sciences*, *10*(1), 165-171.

Ozturk, G., & Hill, S. (2020). Mother-child interactions during shared reading with digital and print books. *Early Child Development and Care*, *190*(9), 1425–1440. https://doi.org/10.1080/03004430.2018.1538977

Parpala, A., Lindblom-Ylänne, S., Komulainen, E., Litmanen, T., & Hirsto, L. (2010). Students' approaches to learning and their experiences of the teaching-learning environment in different disciplines. *British Journal of Educational Psychology, 80*(2), 269–282. https://doi.org/10.1348/000709909X476946

Rafi, A., Ansar, A., & Sami, M. A. (2020). The implication of positive reinforcement strategy in dealing with disruptive behaviour in the classroom: A scoping review. *Journal of Rawalpindi Medical*

College, *24*(2), 173–179. https://doi.org/10.37939/jrmc.v24i2.1190.

Roshanisefat, S., Azizi, S. M., & Khatony, A. (2021). Investigating the relationship of test anxiety and time management with academic procrastination in students of health professions. *Education Research International*, *2021*, 1-6.

Salleh, M. I. M., Alias, N. A., Ariffin, S., Ibrahim, Z., Ramli, A. R., & Aliman, S. (2023). The sudden transition to remote learning in response to COVID-19: Lessons from Malaysia. *Humanities and Social Sciences Communications, 10*(1), 1-10. https://doi.org/10.1057/s41599-023-01751-6.

Sharma, S., & Shakir, M. (2019). A study of academic anxiety of senior secondary school students in relation to locale and type of school. *Research and Reflections on Education*, *17*(4), 1–9. https://doi.org/10.13140/RG.2.2.35160.03846

Shir, J. N., Nnome, C. I., & Elujekwute, L. A. (2021). Influence of home and school environments on students' academic performance in secondary schools in Nigeria. *Sapientia Foundation Journal of Education, Sciences and Gender Studies*, *3*(3).

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, *9*(1), 4-11.

Soto-Ramírez, P., Jiang, H., Strasser, K., Chaparro-Moreno, L. J., & Justice, L. M. (2022). Early home learning environment profiles and their contribution to child development in Chile. *Journal of Applied Developmental Psychology*, *82*, 101452.

Suru, M. H. (2022). Teacher management of pre-primary school student learning: Reading arithmetic skills through visual media. In *Modern Reading Practices and Collaboration between Schools, Family, and Community* (pp. 53-80). IGI Global.

Tucker, P., Van Zandvoort, M. M., Burke, S. M., & Irwin, J. D. (2011). The influence of parents and the home environment on preschoolers' physical activity behaviours: A qualitative investigation of childcare providers' perspectives. *BMC Public Health*, *11*. https://doi.org/10.1186/1471-2458-11-168

Uiboleht, K., Karm, M., & Postareff, L. (2019). Relations between students' perceptions of the teaching-learning environment and teachers' approaches to teaching: A qualitative study. *Journal of Further and Higher Education*, *43*(10), 1456–1475. https://doi.org/10.1080/0309877X.2018.1491958

Watli, E. (2018). *Factors contributing to truancy among students in public secondary Schools in Hanang district council in Tanzania*,

[Unpublished master dissertation, St. Augustine University of Tanzania].

Younas, M., Liu, C., Khalid, S., & Bakar, A. (2021). Effect of home environment on students' academic achievements at a higher level. *Ilkogretim online*, *20*(5).

Youssef, N., Saleeb, M., Gebreal, A., & Ghazy, R. M. (2023). The internal reliability and construct validity of the evidence-based practice questionnaire (EBPQ): Evidence from healthcare professionals in the Eastern Mediterranean Region. *Healthcare*, 11(15), 2168.