Bibliometric Analysis of Self-Determination Theory Research in a Decade (2014 - 2024) and Future Research Directions

Crossita Nabila Shofiefany[1], Aisyah Kamila[2], Unika Prihatsanti[3]

{crossitanabila@students.undip.ac.id[1], aisyahkamila@students.undip.ac.id[2], unikaprihatsanti@lecturer.undip.ac.id[3]}

Faculty of Psychology, Diponegoro University, Semarang, Indonesia

Abstract. Self-Determination Theory (SDT) serves as a theoretical foundation emphasizing the functions of intrinsic and extrinsic motivation. This theory provides a deep understanding of the processes involved in the acquisition and maintenance of individual motivation towards behavior, highlighting the role of environmental support in facilitating fundamental psychological needs. This study aims to identify and analyze the research trends in self-determination theory over the past decade using a bibliometric literature review approach. The SCOPUS database was utilized, with the self-determination theory as the primary keyword. Analysis was conducted using VOSviewer. The bibliometric analysis includes type of document, authorship, institutions, fields of study, growth trends, and future research directions. Six clusters were identified, illustrating that SDT is discussed across various fields such as psychological needs, personal autonomy, motivation, achievement goal theory, self-regulation, and autonomy. Future research is encouraged to explore self-determination theory in relation to the topics mentioned in the discussion section.

Keywords: Bibliometric, Research Trend, Self-Determination Theory.

1 Introduction

The Self-Determination Theory (SDT) is a motivational theory developed by Edward L. Deci and Richard M. Ryan in the 1980's, serving as a comprehensive framework to understand human motivation. This theory emphasizes the importance of intrinsic and extrinsic motivation, highlighting how various types of motivation influence individual well-being and performance [1]. SDT emphasizes the fulfillment of three basic needs: autonomy, competence, and relatedness [2]. When these needs are met, individuals tend to experience intrinsic motivation that supports personal development, creativity, and psychological well-being [3]. SDT highlights the crucial role of social-contextual factors in molding human motivation and behavior, emphasizing interpersonal settings that nurture autonomy as a critical element for

maintaining enduring motivation [4]. Grounded in the premise that humans naturally strive for psychological growth, internalization, and well-being, SDT asserts that these aspirations are significantly shaped by their surroundings [3]. Environments that cater to these fundamental needs enhance willingness, vitality, and optimal functioning, thereby fostering robust motivation and engagement across diverse domains of life [5][6].

As a macro theory in the study of human motivation, SDT is widely discussed across diverse domains including education, parenting, healthcare, sports, psychotherapy, digital environments, as well as motivation and work management [4]. SDT focuses on a profound analysis of how social-contextual factors influence motivation, behavior, and human personality development, with a particular emphasis on the importance of interpersonal contexts that support individual autonomy to achieve optimal motivation [4]. The theoretical framework of SDT integrates various perspectives including organismic, phenomenological, ego-psychological, and humanistic perspectives, providing a deep understanding of how social environments can be structured to facilitate optimal growth [4].

The limited exploration of bibliometric research related to SDT has prompted researchers to conduct further studies to identify and analyze research trends on this topic over the past decade, as well as providing recommendations for future research topics. Through the analysis of publications, citations, and collaborations, bibliometrics allows researchers to identify trends in academic literature. This approach can reveal how interest and focus on SDT research have evolved over time, including the identification of new fields applying this theory and specific aspects of SDT that require further investigation. This study addresses several key research questions: 1) What types of documents related to self-determination theory have been published in the last decade? 2) Who are the leading researchers in this field? 3) Which institutions are the most active in publishing research on this topic? 4) What are the most frequently explored themes within self-determination theory? 5) How has research on self-determination theory developed over the past ten years? 6) What are the recommended future directions for research on self-determination theory?

2 Method

This study uses a literature review method with a bibliometric approach. Bibliometric analysis is a method utilized to investigate the development of research keywords or variables, encompassing topics, authors, and the social, intellectual, and conceptual framework of a field [7]. Furthermore, Bibliometrics involves applying a quantitative approach to identify patterns in the distribution of articles related to a specific research topic or variable [8]. The steps in bibliometric analysis include: 1) Identifying search keywords; 2) Conducting an initial search; 3) Refining search results; 4) Compiling statistics from the initial data; 5) Analyzing the data. In brief, the steps begin with determining the search keywords. The next step is conducting an initial search regarding the desired topic, variable, or keywords. After refining or simplifying the initial search results using certain filtering features, information from the database is downloaded or saved for statistical compilation. The final stage involves analyzing the obtained

data, both quantitatively and descriptively. The data sources for this study were obtained from searches in the SCOPUS database, covering research from 2014 to 2024. This data was then processed using VOSviewer. The analysis using VOSviewer was conducted through co-authorship and co-occurrence analysis. The data sources for this study were obtained from searches in the SCOPUS database, covering research from 2014 to 2024, and were subsequently processed using Microsoft tools.

3 Result
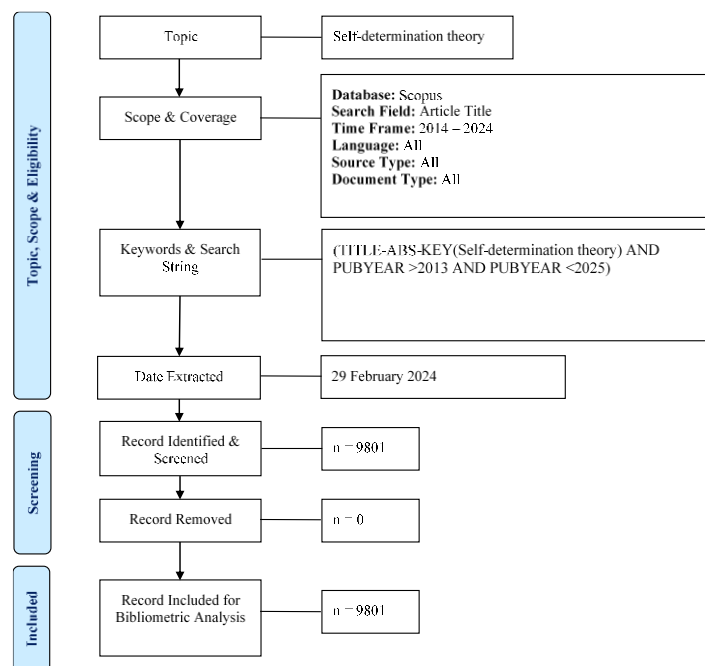
Fig 1. Flow diagram of the research strategy

Table 1. Results of the most popular categories

|	Total Publications (TP)	Percentages
Article	8.239	84,1%
Vansteenkiste, M.	133	1,36%
Universitetit Geint	244	2,5%
Social Science	4.323	44,1%

The research results show that there are 13 types of documents found, with journal articles being the most prevalent (84.1%), followed by conference papers (6.1%), book chapters (4.71%), reviews (3.19%), books (0.81%), notes (0.36%), errata (0.18%), editorials (0.16%), conference reviews (0.16%), and other document types such as letters, short surveys, and data papers (0.08%). The author who has published the most on self-determination theory research trends over the past ten years is Vansteenkiste, M., with 19 links, dominating with 133 publications (1.36%). Other prominent authors include Ryan, R.M. (TP=86), Soenens, B. (TP=84), Ntoumanis, N. (TP=70), Haerens, L. (TP=64), Hagger, M.S. (TP=51), Weinstein, N. (TP=39), Monteiro, D. (TP=39), Burgueño, R. (TP=38), Aelterman, N. (TP=38), Deci, E.L. (TP=36), Williams, G.C. (TP=35), Koestner, R. (TP=35), and other researchers with fewer than 35 publications.
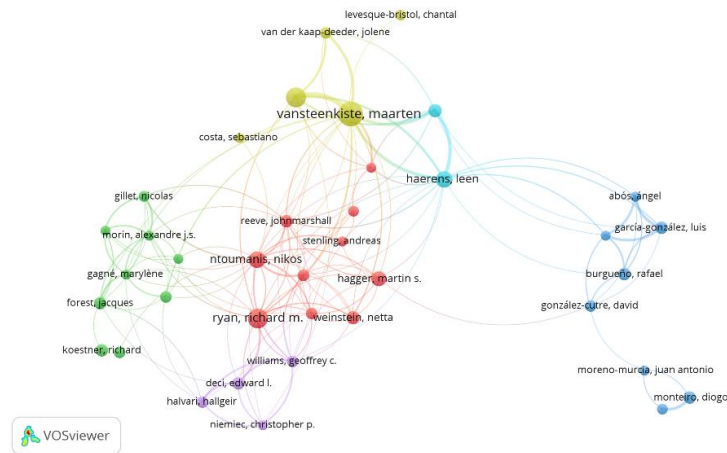

Fig 2. Output of co-authorship analysis

Ghent University is identified as the most active institution in self-determination theory research, with a total of 244 publications (2.5%). This is followed by Curtin University (166 publications), Australian Catholic University (160), University of Rochester (140), KU Leuven (139), University of Ottawa (103), Faculty of Health Sciences (103), McGill University (99), University of Toronto (84), Université du Québec à Montréal (83), Purdue University (82),

Utrecht University (81), and Universidad de Extremadura (81). The social sciences field has produced the most research on self-determination theory, with 4,323 publications, representing 44.1% of the total findings from the database. Other significant fields include psychology (3,310 publications), health (1,955), business management and accounting (1,432), and computer science (1,061). Fields with fewer than 1,000 publications include arts and humanities (910), health professions (650), engineering (450), environmental science (423), nursing (357), economics, econometrics, and finance (267), decision sciences (200), neuroscience (162), energy (142), mathematics (141), among others.
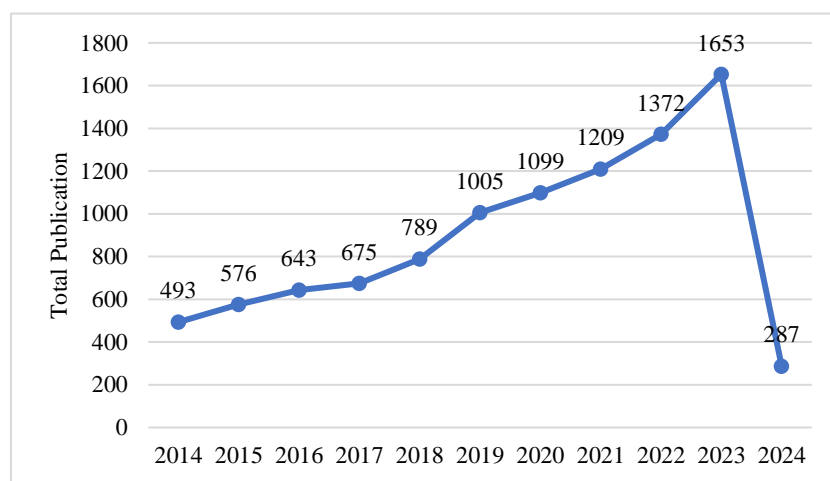
Fig 3. Growth of self-determination theory research

The total growth of publications related to self-determination theory is illustrated in Figure 3. From 2014 to 2024, the number of publications increased significantly, from 493 in 2014 to 1,940 in 2023-2024 (first trimester). From the results of the co-occurrence analysis using VOSviewer, six distinct clusters were identified, each represented by a unique color. The details of these clusters are discussed below
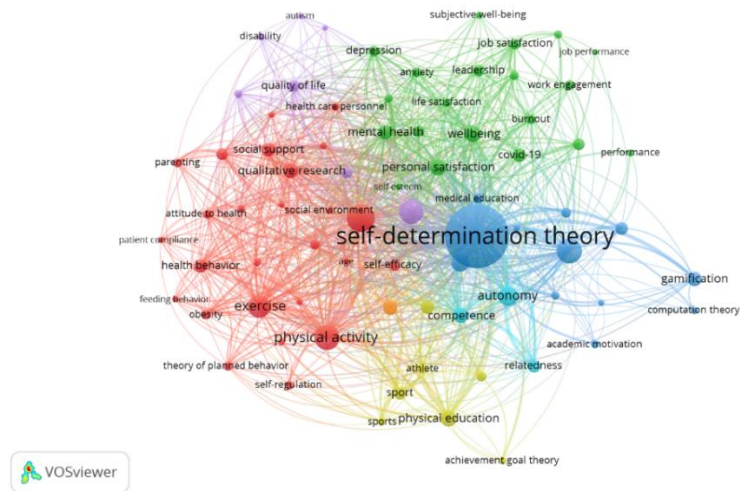
Fig 4. Output of co-occurence analysis

1. Cluster 1 (red): 26 items related to self-determination theory in general, including personal autonomy, physical activity, exercise, qualitative research, and others.
2. Cluster 2 (green): 19 items related to self-determination theory in general, including well-being, personal satisfaction, mental health, leadership, and others.
3. Cluster 3 (blue): 12 items related to self-determination theory in general, including intrinsic motivation, extrinsic motivation, education, gamification, and others.
4. Cluster 4 (purple): 7 items related to self-determination theory in general, including self-determination, quality of life, decision making, disability, and others.
5. Cluster 5 (yellow): 5 items related to self-determination theory in general, including physical education, sport, athlete, achievement, and gender.
6. Cluster 6 (light blue): 3 items related to self-determination theory in general, including autonomy, competence, and relatedness.

4 Discussion

Over the past decade, research on self-determination theory has demonstrated continuous growth. Starting with 493 publications in 2014, the number steadily increased to 1940 publications by the first trimester of 2024. These publications encompass a variety of document types, including articles (TP=8239), conference papers (TP=597), book chapters (TP=461), reviews (TP=313), books (TP=80), notes (TP=36), errata (TP=18), editorials (TP=16), conference reviews (TP=16), as well as other types like letters (TP=3), retracted documents (TP=2), short surveys (TP=2), and data papers (TP=1). Many writers in the last decade have included Vansteenkiste, M. (TP=133) and Ryan, R.M. (TP=86). Ghent University (TP=244) and Curtin University (TP=166) emerge as the most prolific institutions contributing to

publications related to self-determination theory. This research spans multiple fields, prominently Social Sciences (TP=4323) and Psychology (TP=3310).

Based on the VOSviewer analysis in Figure 4, Cluster 1 predominantly discusses self-determination theory in relation to personal autonomy, physical activity, and exercise. Personal autonomy refers to a fundamental innate tendency that drives individuals to engage in intrinsically motivating behaviors [9]. Self-determination is a crucial component for providing intrinsic motivation and competence to persevere and face new challenges [10]. However, topics such as feeding behavior, patient compliance, self-management, and self-regulation have not been extensively explored within this cluster. From early childhood, intrinsic motivation begins to be replaced by extrinsic motivation due to social influences [11]. Self-determination theory (SDT) underscores the significance of social environments, such as parents and teachers, in facilitating self-regulation through support for competence, relatedness, and autonomy. This support promotes the internalization and integration of values and behavioral regulations, making individuals feel more autonomous and voluntarily engaged [3].

Topics frequently discussed in Cluster 2 include well-being, personal satisfaction, mental health, and leadership. Well-being is conceptualized as a comprehensive construct that includes aspects such as life satisfaction, a sense of purpose, and the lack of psychological distress, including anxiety and depression [12]. Meeting fundamental psychological needs promotes more self-determined types of motivation, leading to enhanced personal well-being [13][14]. On the other hand, need satisfaction, work engagement, subjective well-being, and job performance remains an underexplored topic within this cluster. In the context of organizations and the workplace, Employee job performance is significantly influenced by the nature of their motivation towards job-related tasks [15]. Employees may experience intrinsic motivation for certain components of their roles, though not necessarily for every aspect. When driven by intrinsic motivation, individuals are likely to display high-quality performance [15].

The prominent topics discussed in cluster 3 include intrinsic motivation, extrinsic motivation, education, and gamification. Intrinsic motivation is characterized by the internal drive that emerges from the engagement between an activity and the goal of obtaining satisfaction and enjoyment for the individual, characterized by curiosity or ambition to develop knowledge and skills [16][17]. Research on SDT and academic achievement shows that consistent intrinsic motivation, related to effort and performance, is a key factor in achieving academic success, especially in fields of interest to students [18][19]. Meanwhile, in this cluster, there are several topics that have not been extensively studied, such as academic motivation, academic performance, resilience, and computation theory. Computation theory is a branch of computer science that studies the principles and limitations of computation by machines, focusing on mathematical models and classifying problems based on their complexity [20]. In the domain of human-computer interaction, SDT elements such as intrinsic motivation and the fulfillment of basic psychological needs are related to computation, such as player experience in games or the systems operated within [21].

The prominent topics discussed in cluster 4 include quality of life, self-determination, decision-making, and disability. Literature studies show that the fields of health and medicine extensively examine the quality of life in patients. Health-Related Quality of Life (HRQoL) for a patient includes aspects related to physical health, mental, and social life, is influenced by health conditions, particularly in patients with chronic diseases [22]. In patients with chronic conditions such as Chronic Obstructive Pulmonary Disease (COPD) and diabetes, the SDT approach is used to predict self-management and HRQoL, which are related to the fulfillment of psychological needs and autonomous regulation to improve quality of life and treatment adherence [23][24]. Meanwhile, less-studied topics in this cluster include very elderly, intellectual disability, and autism. Autism Spectrum Disorder (ASD) children face more challenges transitioning to school, especially in terms of social interaction [25]. Using the SDT approach, Peer mentoring initiatives can be implemented to improve social integration and community engagement for individuals with intellectual and developmental disabilities, including those with ASD, by offering opportunities for social interaction and building intrinsic motivation [26].

The topics discussed in cluster 5 include sport, physical education, athlete, achievement, and gender. Sport is considered an essential life skill, comparable to other important life domains such as education, the workplace, and personal relationships, influencing how individuals promote health and achieve success [27][28]. The field of sport is professionally pursued by athletes under the supervision of coaches in various competitive disciplines. Literature studies indicate that coaches play a crucial role in the training process by adopting autonomy-supportive behaviors, which positively impact athletes' motivation, well-being, and performance [29][30]. Meanwhile, the topic of achievement goal theory is less studied. SDT posits that intrinsic motivation and basic psychological needs influence how individuals set and achieve goals [31], whereas AGT focuses on the adopted goals, such as mastery goals (also known as autonomous motivation in SDT), performance goals, and how these tasks can affect cognitive, emotional, and behavioral engagement [32][33]. The synergy between these two theories in the educational context can provide a foundational framework for analyzing the motivational processes that drive students to engage and achieve academic goals.

In cluster 6, less-explored topics include autonomy, competence, and relatedness, which represent three fundamental psychological needs. These needs are universally recognized as critical for psychological growth, well-being, and optimal functioning across diverse social and cultural contexts [34]. Supportive social environments that foster these fundamental psychological needs also contribute to the development of a cohesive self and sustained psychological health over time [35]. Research underscores the importance of fulfilling these needs for promoting well-being and personal development, whereas their frustration can impede development and potentially lead to psychological disorders [36].

Based on bibliometric analysis, research on Self-Determination Theory (SDT) has experienced rapid growth over the past decade. However, several important points have been identified. One

of these is the dominance of literature in specific fields such as sports and organizational contexts, while other areas and topics, such as health behavior, disabilities, and technology, remain under-researched. The analysis has revealed new findings that present significant opportunities to explore broader applications of SDT in technology, human-computer interaction, and artificial intelligence, which are increasingly crucial in this digital era. The limitations of this study include the data extraction process being conducted early in the year, potentially leading to an incomplete representation of total publications for 2024. Additionally, the reliance on the SCOPUS database and the focus on data trends over the past decade further constrain the study's scope. For future research, it is recommended to utilize a broader range of databases to acquire more comprehensive data and to consider the intricate influences of social, cultural, and technological factors on individual motivation. Interdisciplinary collaboration among psychology, computer science, and social sciences is essential for integrating SDT with other theoretical frameworks. Future research should aim to significantly enhance our understanding of SDT as a theory of human motivation and its dynamic applications across various domains in the continually evolving modern era.

5 Conclusion

Research trends on self-determination theory (SDT) have evolved significantly over the past decade. Discussions on SDT have been extensively published in journal articles and are predominantly featured in the social sciences. The most prolific author in this area is Vansteenkiste, M., and the institution with the highest number of publications is Universiteit Gent. Analysis using VOSviewer identified six clusters, indicating that SDT is discussed in relation to various topics such as autonomy, physical activity, organizations, leadership, and others. The limitations of this study include: 1) the data extraction process being conducted early in the year, which may lead to an incomplete representation of the total publications for 2024; 2) the reliance solely on the SCOPUS database; and 3) the focus exclusively on data trends from the past decade. Future research should aim to use a variety of databases to obtain more diverse data and explore SDT in relation to less-discussed topics through interdisciplinary collaboration, particularly in the areas of disability, health, technology, and artificial intelligence.

References

[1]   Deci, E. L., & Ryan, R. M. (2008). *Self-determination theory*: A macrotheory of human motivation, development, and health. *Canadian Psychology / Psychologie canadienne, 49*(3), 182–185. https://doi.org/10.1037/a0012801

[2]   Mario, C. (2019). *Theories of Self-determination.* Global Encyclopedia of Public Administration, Public Policy, and Governance. https://doi.org/10.1007/978-3-319-31816-5_3710-1

[3]   Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.

[4]   Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual review of organizational psychology and organizational behavior, 4*(1), 19-43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

[5]   Coudray, C., Palmer, R., & Frazier, P. (2019). Moderators of the Efficacy of a Web-Based Stress Management Intervention for College Students. *Journal of Counseling Psychology, 5*5(1), 68–78. https://doi.org/10.1037/cou0000340

[6]   Ryan, R. M., & Vansteenkiste, M. (2023). *The Oxford Handbook of Self-determination theory.* Oxford Academic. https://doi.org/10.1093/oxfordhb/9780197600047.013.2

[7]   Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W.M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research, 133*, 285-296. https://doi.org/10.1016/j.jbusres.2021.04.070

[8]   Martí-Parreño, J., Méndez-Ibáñez, E., & Alonso-Arroyo, A. (2016). The use of gamification in education: a bibliometric and text mining analysis. *Journal of computer assisted learning, 32*(6), 663-676.. https://doi.org/10.1111/jcal.12161

[9]   Serdiuk, L., Danyliuk, I., & Chaika, G. (2018). *Personal autonomy* as a key factor of human self-determination. *Social Welfare: Interdisciplinary Approach, 8*(1), 85-93. https://doi.org/10.21277/sw.v1i8.357

[10]   Deci, E. L., & Ryan, R. M. (2013). *Intrinsic motivation and self-determination in human behavior*. Springer Science & Business Media. https://doi.org/10.1007/978-1-4899-2271-7

[11]   Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science, 4*, 99–104

[12]   Baxter, L., & Burnell, K. (2022). What is wellbeing and how do we measure and evaluate it?. In P. Everill, & K. Burnell (Eds.), *Archaeology, Heritage, and Wellbeing* (pp. 7-25). Routledge. https://doi.org/10.4324/9781003182184-3

[13]   Tang, M., Wang, D., & Guerrien, A. (2020). A systematic review and meta-analysis on basic psychological need satisfaction, motivation, and well-being in later life: Contributions of self-determination theory. *PsyCh journal, 9*(1), 5–33. https://doi.org/10.1002/pchj.293

[14]   Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management, 42*(5), 1195–1229. https://doi.org/10.1177/0149206316632058

[15]   Manzoor, F., Wei, L., & Asif, M. (2021). Intrinsic Rewards and Employee's Performance With the Mediating Mechanism of Employee's Motivation. *Frontiers in psychology, 12*, 563070. https://doi.org/10.3389/fpsyg.2021.563070

[16]   Fishbach, A., & Woolley, K. (2022). The structure of intrinsic motivation. *Annual Review of Organizational Psychology and Organizational Behavior, 9*(1), 339-363. https://doi.org/10.1146/annurev-orgpsych-012420-091122

[17]   Di Domenico, S. I., & Ryan, R. M. (2017). The Emerging Neuroscience of Intrinsic Motivation: A New Frontier in Self-Determination Research. *Frontiers in human neuroscience, 11*, 145. https://doi.org/10.3389/fnhum.2017.00145

[18]   Taylor, G., Jungert, T., Mageau, G. A., Schattke, K., Dedic, H., Rosenfield, S., & Koestner, R. (2014). A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation. *Contemporary Educational Psychology, 39*(4), 342–358. https://doi.org/10.1016/j.cedpsych.2014.08.002

[19]   Augustyniak, R. A., Ables, A. Z., Guilford, P., Lujan, H. L., Cortright, R. N., & DiCarlo, S. E. (2016). Intrinsic motivation: an overlooked component for student success. *Advances in Physiology Education, 40*(4), 465-466.. https://doi.org/10.1152/advan.00072.2016

[20]   Sipser, M. (2012). *Introduction to the Theory of Computation* (3rd ed.). Cengage Learning.

[21]   Tyack, A., & Mekler, E.D. (2020). Self-Determination Theory in HCI Games Research: Current Uses and Open Questions. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems.* https://doi.org/10.1145/3313831.3376723

[22]   Ibrahim, H. K., Eisay, Z. M., Jance, A., & Yousuf, A. (2022). Quality of Life in Chronic Diseases. *Eduvest-Journal of Universal Studies, 2*(9), 1756-1762. https://doi.org/10.59188/eduvest.v2i9.571

[23]   Knox, L., Norris, G., Lewis, K., & Rahman, R. (2021). Using self-determination theory to predict self-management and HRQoL in moderate-to-severe COPD. *Health psychology and behavioral medicine, 9*(1), 527–546. https://doi.org/10.1080/21642850.2021.1938073

[24]   Sarfo, J. O., Obeng, P., Kyereh, H. K., Ansah, E. W., & Attafuah, P. Y. A. (2023). Self-Determination Theory and Quality of Life of Adults with Diabetes: A Scoping Review. *Journal of diabetes research, 2023*, 5341656. https://doi.org/10.1155/2023/5341656

[25]   Marsh, A., Spagnol, V., Grove, R., & Eapen, V. (2017). Transition to school for children with autism spectrum disorder: A systematic review. *World journal of psychiatry, 7*(3), 184–196. https://doi.org/10.5498/wjp.v7.i3.184

[26]   Fisher, M. H., Athamanah, L. S., Sung, C., & Josol, C. K. (2020). Applying the self-determination theory to develop a school-to-work peer mentoring programme to promote social inclusion. *Journal of applied research in intellectual disabilities : JARID, 33*(2), 296–309. https://doi.org/10.1111/jar.12673

[27]   Kendellen, K., & Camiré, M. (2019). Applying in life the skills learned in sport: A grounded theory. *Psychology of Sport and Exercise, 40*, 23-32. https://doi.org/10.1016/j.psychsport.2018.09.002

[28]   Steptoe, A., & Wardle, J. (2017). Life skills, wealth, health, and wellbeing in later life. *Proceedings of the National Academy of Sciences of the United States of America, 114*(17), 4354–4359. https://doi.org/10.1073/pnas.1616011114

[29]   Lourenço, J., Almagro, B. J., Carmona-Márquez, J., & Sáenz-López, P. (2022). Predicting Perceived Sport Performance via Self-Determination Theory. *Perceptual and motor skills, 129*(5), 1563–1580. https://doi.org/10.1177/00315125221119121

[30]   Mossman, L. H., Slemp, G. R., Lewis, K. J., Colla, R. H., & O'Halloran, P. (2022). Autonomy support in sport and exercise settings: a systematic review and meta-analysis.

International Review of Sport and Exercise Psychology, 17(1), 540–563. https://doi.org/10.1080/1750984X.2022.2031252

[31] Rothes, A., Lemos, M. S., & Gonçalves, T. (2022). The influence of students' *self-determination* and personal achievement goals in learning and engagement: a mediation model for traditional and nontraditional students. *Education Sciences, 12*(6), 369. https://doi.org/10.3390/educsci12060369

[32] Holding, A., & Koestner, R. (2018). *A self-determination theory perspective on how to choose, use, and lose personal goals*. https://doi.org/10.1093/oxfordhb/9780199841332.013.39

[33] Jiang, A. L., & Zhang, L. J. (2021). University teachers' teaching style and their students' agentic engagement in EFL learning in China: a self-determination theory and achievement goal theory integrated perspective. *Frontiers in psychology, 12*, 704269. https://doi.org/10.3389/fpsyg.2021.704269

[34] Lynch, M. F. (2023). Self-determination theory in cross-cultural research. In Richard M. Ryan (ed.), *The Oxford Handbook of Self-Determination Theory* (pp. 1023-1050). Oxford Academic. https://doi.org/10.1093/oxfordhb/9780197600047.013.51

[35] Ryan, R. M., & Sapp, A. R. (2007). Basic psychological needs: a self-determination theory perspective on the promotion of wellness across development and cultures. In I. Gough & J. A. McGregor (Eds.), *Wellbeing in Developing Countries: From Theory to Research* (pp. 71–92). Cambridge University Press. https://doi.org/10.1017/CBO9780511488986.004

[36] van der Kaap-Deeder, J. (2023). The Transdiagnostic Role of the Basic Psychological Needs in Psychopathology. In Richard M. Ryan (ed.), *The Oxford Handbook of Self-Determination Theory* (pp. 819-832). Oxford Academic. https://doi.org/10.1093/oxfordhb/9780197600047.013.43