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Rural Collaboration for Quality Education in Sustainable Development: Teacher Mentoring and The Effects on Students

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Abstract

Today, there is a remarkable effort all over the world to provide quality education and increase qualified teachers as a part of sustainable development. One way is through teacher mentoring to strengthen the professional knowledge and skills of teachers, especially in rural areas. As a component of collaboration between experienced teachers and novice teachers, mentoring is a tool for quality education. The personal and professional development process achieved in this way continues and is monitored with its impact on students. One reason for this is that rural mentoring contributes to increasing the quality of education and providing equal opportunities for rural students. The focus of this research is to evaluate the effects of the teacher mentoring process on rural students through a sample program. The study reviews rural teachers' observations of changes in their students and offers various findings and recommendations that can be taken into account by researchers and decision-makers in the field.

The research focuses on the effect of the *Village Teachers Hand in Hand Mentoring Program* (by the *Village Schools Transformation Network Association*) on students, which provides the opportunity for newly started teachers in rural areas in Turkey to interact with their experienced colleagues and establish a professional learning dialogue during an education period. The research group consisted of 60 mentee teachers from 20 different rural areas of Turkey, who came together on the online platform. The program aimed to develop professional and personal skills by transferring knowledge, skills, and experiences to mentee teachers through 32 mentor teachers from October 2022 to January 2023. Instead of finding solutions directly, sustainable collaborative support was planned to discover the causes and solutions of the problems through exploratory questions and mutual dialogue. A total of *five main objectives* including primary and secondary goals for these teachers were determined: Recognizing the unique learning speed and needs of each child, using rhythms and routines in the lesson, strengthening classroom management, entering the lesson in a planned and emotionally ready mode, increasing communication with parents and the environment. Throughout the semester, teachers had the opportunity to apply both the new knowledge and methods they learned and the solutions they created in many areas thanks to the program. Thus, they achieved changes in their students and classes and conveyed these gains by observing and experiencing them one-on-one. Concerning this, the research aims to examine *the changes observed by the teachers in their students* during the process as a result of their professional and personal changes, thanks to their knowledge and awareness.

The data of the study, which was designed according to the single case study research design with a qualitative approach, were collected through *Learning Diaries*, which were filled after

every five mentor-mentee meetings except the first one. Thanks to these diaries containing answers to open-ended questions, it was tried to understand in depth what kind of changes were observed in the students during the process. Qualitative data were analyzed in the MAXQDA analysis program. The findings prove that mentoring includes a multidimensional understanding involving students, parents, and the environment as well as its personal and professional dimensions. Strong relationships and overlapping elements are noticed between program objectives for teachers and changes in students. The effects of expected change, knowledge, and awareness in teachers on students show that more quality education is provided in rural areas. The study shows that when rural mentoring practices are embedded in the school's established professional learning culture, there is an opportunity to positively affect teaching, learning, and relationship with the environment. Supporting the process with the parent and the environment has the potential to implement an innovative educational approach that will eventually spread to the whole community, starting with the child in the countryside, and supporting quality education. Considering the importance of quality education in sustainable development, the diversity and practical implications of qualitative data, as well as the permanence of such programs and their effects on students and education can be improved by longitudinal studies.

Keywords: sustainable development, rural education, collaboration for quality education, teacher mentoring, students in rural.

ESG as the Driver to Unified Reporting Standards and Sustainable Business – Obstacles, and Opportunities

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The last decade has been an important business transformation period, initiated by United Nations, by defining Sustainable Development Goals, followed by the European Union level by the Circular Economy action plan and the Green Deal. The businesses see the necessity to transform, realize that “business as usual” will not lead to business sustainability in the nearest future, and experience higher demand in disclosures and transparency from financial institutions as well as from stakeholders in general. This is why the well-known corporate social responsibility (CSR) term has now developed into environmental, social, and governance (ESG). With the introduction of new definitions and concepts, businesses also struggle to understand the best approach to integrate ESG into daily operations and often do it on a stand-alone basis, not integrating ESG into general business models and strategy. Moreover, businesses are willing to disclose information on all three pillars, but, of course, in a beneficial way to the latter. The main problem here is the lack of benchmark possibilities for the data, different reporting standards, and the fact that, followed by the data quality. The Author assesses the major deficiencies in current reporting on sustainability or ESG and researches the European Sustainability Reporting Standards, their impact on report quality, and data benchmark for different industries.

Keywords: benchmark, ESG, reporting, sustainability.

A Study of Barriers to E-Commerce Adoption among Small Businesses in Sri Lanka

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Abstract

Small businesses play a vital role in the Sri Lankan economy, and the adoption of e-commerce presents significant opportunities for their growth. However, there is evidence suggesting that small businesses in Sri Lanka are not fully capitalizing on the potential benefits of e-commerce. This research aims to identify and analyze the barriers that hinder the adoption of e-commerce among small businesses in Sri Lanka. The study employed a descriptive quantitative research approach, proportionate stratified random sampling procedures were used to select a sample of 453 firms in Hambantota district, Sri Lanka. Primary data were collected using a pre-designed and tested questionnaire. For analyzing the data derived from multiple regression, analysis of variance and t-test. The findings indicate that several barriers hinder the adoption of e-commerce by small businesses, including a lack of knowledge and awareness of e-commerce, fear, and reluctance to change, lack of qualified personnel to develop and support ecommerce, lack of popularity for online shopping, inadequate delivery networks. This study also examined the perspectives of male and female small business owners or managers regarding e-commerce barriers, showing that female owners or managers expressed greater concerns. Furthermore, factors such as age, gender, education level, and marital status significantly influenced the adoption of e-commerce. The research findings will aid in developing more effective government policies and planning decisions to foster a more vibrant small business ecosystem in developing countries.

Keywords: Adoption, Barriers, Developing Countries, Electronic Commerce, Small Businesses

Impact of Two Approaches in Microfinance on Raising Household Income – Evidence from a Government-Owned Microfinance Institution in Sri Lanka

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Abstract

This research analyses the significance of providing microfinance with non-financial services (Credit-Plus Approach) and alone (Minimalist Approach) on raising household income. This empirical analysis tests the Household Income Growth Rate of a randomly selected original sample of household data consists of 493 beneficiaries from eight Samurdhi Banks (government-owned microfinance institutions) in Badulla district, Sri Lanka. The expected outcome of this paper was to find out the more statistically significant microfinance approach on raising household income. Findings indicated that having a loan in either method statistically significantly increases the Household Income Growth Rate of the participants by 19.63% than the control group. Furthermore, it was more significant among the most impoverished participants. In conclusion, disbursing a loan in both microfinance approaches positively impacts raising the household income of this sample. However, it needs more evidence to infer the significance of the Credit-Plus Approach on increasing household income more than the Minimalist Approach.

Keywords: microfinance, credit-plus approach, government-owned microfinance institutions, Samurdhi bank, Sri Lanka.

JEL codes: G21, G28, H81, I38

Microcredit Component Analysis for Women’s Empowerment: Evidence from “Samurdhi” Microcredit Program, Sri Lanka

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Abstract

Microcredit has the potential to empower women, and several factors contribute to this empowerment. One example is the Department of Samurdhi Development in Sri Lanka, which offers microcredit programs specifically designed to enhance the business environment for unemployed women. These programs, such as the Samurdhu microcredit program, provide training facilities, market access, and loan cycles to support women in their entrepreneurial endeavors. To explore the impact of microcredit on women's empowerment, a questionnaire survey was conducted in the Madampe divisional secretariat of the Puttalam District in Sri Lanka, gathering cross-sectional data from 241 participants using a simple random sampling method. The analysis of this data, using ordinary least square multiple regression, identified training facilities and market access as the two most significant factors facilitating women's empowerment in rural areas. Additionally, the study found that women's monthly income has a positive influence on their degree of empowerment, as revealed through logistic regression analysis. The findings of this study shed light on the factors that play a crucial role in empowering women through microcredit in rural areas. It emphasizes the importance of providing training opportunities and facilitating market access for women entrepreneurs. Moreover, the study highlights the positive correlation between women's monthly income and their empowerment. Based on these insights, the study proposes policy recommendations for policymakers to enhance microcredit policies, suggesting the inclusion of various components to better support women's empowerment. In summary, this study contributes valuable knowledge regarding the factors that significantly contribute to women's empowerment through microcredit in rural areas.

Keywords – empowerment; microcredit; Samurdhi program; Sri Lanka; women

JEL codes - D9, D130, J120

Analysis of Internet of Things Systems

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Abstract

The digital era continues to enhance our use of the internet. Internet connectivity has transformed into a powerful tool for providing improved solutions for developing people's living standards. Connected devices can perceive and interact with the surrounding processes through various technologies, creating individual responses. This collective process is known as the "Internet of Things (IoT)". The availability of affordable infrastructure, and resources, and the accessibility of devices from any distance have contributed to the significant development of IoT technologies in the 21st century.

The global "COVID-19" pandemic in 2020 highlighted the importance of the Internet of Things in various sectors. During the pandemic, individuals were able to connect with people and objects, regardless of their location, at any time, emphasizing the significance of IoT technology.

This abstract provides an overview of the Internet of Things taxonomy and its importance in understanding and managing this complex network. It emphasizes the most important features of IoT classification, such as its benefits, problems, and new trends.

IoT system categorization entails categorizing devices and applications based on characteristics such as functionality, connectivity, architecture, operating system, and industry domain. Researchers, developers, and stakeholders can get useful insights into the features and capabilities of various IoT deployments by categorizing them, allowing for more efficient design, development, and deployment processes.

Keywords: Internet of Things, IoT, classification of IoT systems

Impact of Open Innovation on the Development of SMEs in Georgia, the Creation of Innovative Products and Financial Sustainability

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Abstract

The article is based on the analysis of open innovation practices in small and medium businesses in Georgia. As part of the conducted research, it will be analyzed to what extent open innovations influence the innovative activities of SMEs compared to large companies, what are the benefits and hindrances, how it influences on the creation of innovative products and financial stability of SMEs, what skills and knowledge should employees have to take responsibility for introducing and/or implementing open innovation in small and medium-sized companies, the role of R&D departments in SMEs and How should companies prepare for the introduction of open innovation. It is important to analyze the experience of introducing open innovation in Georgian companies and the stimulating factors of introducing open innovation. The article presents the results of the research and some recommendations for SMEs.

Keywords: Open Innovation; SMEs; R&D; Georgia

The Influence of Top Influencers and Renowned Brands in Promoting Tourism in Morocco: Opportunities and Challenges

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Abstract

This study examines the role of top influencers and renowned brands in promoting tourism in Morocco. By harnessing the power of their social media platforms and reputation, these stakeholders can play a crucial role in attracting visitors to the country. However, several challenges need to be addressed to maximize the impact of these collaborations. This research aims to analyze the opportunities and challenges associated with using top influencers and renowned brands to promote Morocco as a tourist destination, focusing on digital marketing strategies, economic benefits, and cultural implications.

Keywords:

Destination Marketing – Tourism promotion – Visitor attraction – Strategic collaboration - Morocco

The Nexus of Corruption, Insurgency, Banditry and Sustainable Development in Nigeria

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Abstract

The Nigerian state is currently bedeviled with a high rate of corruption both in private and public institutions after the military handed over power affairs to civilians. With the upsurge of corruption in the country, there have been high increase in insurgency and banditry operation in the country. Therefore, this paper will examine the nexus of corruption, insurgency, banditry and sustainable development in Nigeria. Using the qualitative research design, this paper will interrogate or fashion out issues from journals, articles, government publications, international materials, and internet sources. The increase in inflation and socio-economic degradation in Nigeria has reflected the pandemic ravaging the country, creating a high debt rate and low development. The paper identified that the pandemic of corruption started from the household and community at large as a result of the inequality in the distribution of resources among the citizens. Strong institutions and full implementation of policy to improve the livelihood and development of the nation must be a top agenda of the government. The paper concluded that corruption must be dealt with, and sustainable development must be the government's order without leaving any sector of the country behind.

Keywords: Corruption, Insurgency, Banditry, Sustainable Development, Nigeria

Foreign Culture Influences in the Hittite Relief Art and Some Interaction Ways

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Abstract

The Hittites are a civilization lived in Anatolia from the middle of the 2nd millennium BC. They established the first central kingdom of Anatolia. Their capital was Hattušaš (modern Çorum Boğazkale in Türkiye). The Hittites were influenced by the surrounding cultures, especially the cultures of Mesopotamia, Syria and Egypt thanks to its geographical location. They reflected this interaction to their works.

The various civilizations lived in Anatolia at the Hittite era. Hatti civilization lived in Çorum region, which was the core region of the Hittites, Hurrians in Southeastern Anatolia, Luwians in South and Southwest Anatolia, and Arzawalis lived in Western Anatolia. Assyrians lived in Northern Mesopotamia, Babylonians in Southern Mesopotamia, Ahhiyawas (Akhas?) in Western Anatolia, and Egyptians in Egypt in this period. The Hittites interacted with these societies in various ways.

The Hittites has Fasillar monument, lion gate, sphinx gate, Eflatunpınar sacred pool, Hanyeri, Sirkeli, Ivriz, Kurunta, and other reliefs. It can be seen influences of other cultures in these artistic works.

How did the Hittites communicate with the outside world in ancient times? Wars, migrations, trade relations, political marriages and the adaptation of writing systems, as well as artistic and cultural influences, made contacts possible.

In this paper proposal, the works of the Hittites in the form of sculptures, reliefs and drawings will be examined and the effects that do not belong to the Hittite culture in these works will be examined. In addition to this, information about the ways of interaction of ancient societies will be given and how the Hittites communicated with other societies will also be discussed.

Keywords: Hittite, Hittite art, Hittite reliefs, Cultural interaction, Artistic interactions

A Study on Adapting (Turkishization) the Songs Present in the Colourstrings Violin a Method to Turkish Within the Framework of Peter Low's Pentathlon Principles

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Abstract

Children's songs are the most fundamental materials that facilitate the transfer of target behavior aimed to be taught to the students within the music education process. It is also possible for the children's songs to be utilized at different phases of music education. Nevertheless, the use of songs in instrument training is noticeably significant. Similarly, the use of songs in instrument education is equally crucial since they proceed from the familiar melodies to the unfamiliar ones. The activities such as singing, playing, storytelling etc. included in the Violin A book, which has been developed for the initial stage together with the Colourstrings approach for violin education aim to help the students to enjoy the violin education. As far as this point of view is concerned, it is anticipated that identification of the songs of the Colourstrings approach in the instrument training methods and writing Turkish lyrics for these songs will improve the utility of this approach in music education in Turkey. The present study was implemented in an attempt to adapt the songs present in the Violin A method, which was used at the beginning level of violin education within the Colourstrings Approach, one of the new approaches in our country's music education, into Turkish within the framework of Peter Low's pentathlon principles. As far as this study is concerned, the songs in the Violin A book arranged in line with the Colourstrings approach were identified, the contents of these songs were tabulated, and Turkish lyrics were written in line with the rules of prosody as well as within the framework of Peter Low's pentathlon principles.

Keywords: Colourstrings, adapting songs, Peter Low, Pentathlon Principles, Turkishization.

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Comparative Evaluation of Carabo-cone and Kodaly Methods in Terms of Teaching Methods and Techniques

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Abstract

Contemporary music teaching methods play a crucial role in conducting effective and efficient music education activities in the field of music education. Within this scope, contemporary music teaching approaches are frequently used in the educational process to achieve targeted outcomes. It is known that contemporary music teaching methods include Kodaly, Suzuki, Dalcroze, Orff methods, as well as different music teaching methods such as Caraco-cone. This study aims to identify the similarities and differences in teaching methods and techniques between Kodaly and Caraco-cone methods, which are primarily focused on developing music literacy. The document analysis method, which is a qualitative research method, was used in this study. The results of the research indicate that both methods can be used in early childhood music education and aim to achieve fundamental music knowledge. Additionally, it was determined that the Kodaly method adopts a native language approach, starting music education with the child's own folk songs and using a pentatonic scale, while the Caraco-cone method emphasizes tonal understanding.

Keywords: Music education, Contemporary music teaching methods, Carabo-cone method, Kodaly method

Metabolic Reprogramming of Cancer

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Abstract

Cancer cells reprogram their metabolic pathways to grow and proliferate rapidly, and endure the tough conditions with a process called metabolic reprogramming. In this reprogramming, glucose and glutamine uptake is increased. As a result, upregulation in glycolysis, lipid synthesis, pentose-phosphate pathway, mitochondrial biogenesis and glutaminolysis is seen. Upregulation of cell metabolic pathways provide tumorigenesis of cancer cells.

Cancer cells are proliferating cells; therefore, they show anabolic metabolism by increasing glucose and glutamine uptake. As a result of increasing of anabolic metabolism functioning, complex molecules are produced. Thus, production of nucleotides, proteins, and lipids lead to biomass increase of cancer cells and proliferation.

Comprehension of cancer proliferation will lead us to find new treatment options for many cancer types. Since metabolic reprogramming of cancer is a key concept for cancer proliferation, it should be understood completely. Purpose of this review is elucidating the metabolic reprogramming of cancer cells by explaining the changes in anabolic pathways.

Keywords: Metabolic reprogramming, cancer cells, anabolic metabolism, glucose uptake, glycolysis, cancer.

Optimization of Heat Treatment Process in Cold and Hot Work Tool Steels

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Abstract

Tool steels have been used by humankind from the time that iron was first discovered. In the early ages, these types of steels were heated and wrenched to make it hardened. Then, hardened steels were used to create different types of weapons and tools. Nowadays, tool steels have critical importance because these steels are used in all industrial levels. Different types of heat treatment are applied to tool steels in order to improve their mechanical properties.

Tool steels are separated into two sections as cold and hot work tool steels. They are used in high-speed applications, mold industries, cutting and screwing pens, and hand tools. Heat treatment is applied to set their hardness and removal of residual stresses inside the steels.

In this work, most common tool steels are examined, and different types of heat treatment are mentioned. Also, newest developments in the heat treatment area have been looked upon.

Keywords: Tool steels, heat treatment, process optimization, cold work tool steels, hot work tool steels.

Intrinsic and Extrinsic Motivations of Adult Learners: A Systematic Review

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Abstract

Motivation is a key factor in learning, student engagement and academic achievement. Mature students and younger students exhibit different motivations for learning. This systematic literature review critically evaluates the research findings on motivation of adult learners for learning and enrollment. It is aimed to determine whether adult learners are intrinsically or extrinsically motivated for academic work. A systematic search yielded 17 articles that met the criteria of this review. The results indicated that mature students had higher intrinsic motivation compared to traditional students. Yet, some studies showed that adult learners were both intrinsically and extrinsically motivated. Based on the results of these studies, it is concluded that both individual and social factors play role in which motivation adult learners demonstrate. Socio-demographic characteristics such as gender, education and work experience are identified as influential factors in motivation for academic work. In addition, self-esteem and social capital are shown to be related to motivation of adult learners among other factors. The results of the systematic literature review are discussed in relation to theories of motivation. Recommendations for future research and educational programs are proposed with respect to psychological and academic outcomes of different types of motivations.

Keywords: Motivation, self-determination, adult learners, higher education

Introduction

The number of adult learners enrolled in undergraduate courses continue growing rapidly in several countries (Hubble & Bolton, 2021; McFarland et al., 2019). Adult learners attending university are usually called “mature” or “non-traditional” students. Though there is not a standard definition of mature students, the major criterion to describe mature students is age (Tilley, 2014). Depending on the educational system in a certain country and social context, the cut-off age may vary from 21 to 30 (Erb & Drysdale, 2017; Wilkesmann et al., 2012). Besides age, delayed enrollment into university and having already entered the workforce are usually used to define mature students (Organization for Economic Cooperation and Development [OECD], 2019).

Mature students have unique needs and responsibilities compared to younger students. They may be married (Meehan & Negy, 2003), work full-time while studying at the university and try to cope with work or family related stressors (Giancola et al., 2009) in addition to stressors related to academic work. In this realm, their motivations for attending university and academic work might be different from those of younger students.

Academic motivation can simply be defined as the factors related to academic functioning and achievement, which influence level of the student's efforts to study, to deal with academic difficulties and to regulate academic work (Schunk et al. 2008). One of the best-known theories of motivation which have been applied in research within school context is Self-Determination Theory (SDT) (Deci & Ryan, 1985). In Self-Determination Theory two motivations, intrinsic and extrinsic motivations are defined along with amotivation. Ryan and Deci (2000) proposed a continuum of self-determination, from amotivation to intrinsic motivation and different types of extrinsic motivation in the middle.

Intrinsic motivation refers to (Ryan & Deci, 2000) performing an activity for the satisfaction or pleasure originating from the task itself rather than because of external factors. On the other hand, extrinsic motivation involves engaging in an activity to achieve a goal or reward not because of the satisfaction derived from performing the activity. Amotivation is defined as the lack of intentionality to act or do academic work.

In Self-Determination Theory extrinsic motivation is subdivided into four types of regulation; external regulation, introjected regulation, identified regulation and integrated regulation (Ryan & Deci, 2000). Extrinsic motivation-external regulation is when a person performs an activity to attain external rewards such as better grades or avoid punishment. Extrinsic motivation-introjected regulation refers to engaging in an activity to avoid guilt or shame, or because of pride, not for satisfaction derived from the activity.

Another form of extrinsic motivation is identified regulation, which is more autonomous than previous types of extrinsic motivation. In this case the person values the behavior and feels that the behavior is personally important and does not perform the behavior out of obligation. Integrated regulation is the most autonomous type of extrinsic motivation. This occurs when the person has analyzed the reasons for the action, internalized them and as a result value the behavior. Integrated regulation is very similar to intrinsic motivation in the sense that the behavior is self-initiated and autonomous. However, unlike intrinsic motivation, the activity is performed for an instrumental reason separable from the activity.

The structure of intrinsic motivation formulated in Self-Determination Theory has been modified to apply it to learning and academic work (Vallerand et al., 1992). Three subtypes of intrinsic motivation have been identified; namely intrinsic motivation to know, intrinsic motivation toward accomplishment and intrinsic motivation to experience stimulation. Intrinsic motivation to know refers to performing a behavior for the satisfaction or enjoyment derived from researching, gaining new knowledge and understanding new subjects. Intrinsic motivation toward accomplishment is when a person engages in a behavior for satisfaction of accomplishing difficult tasks, which are beyond standard requirements, for the pleasure of feeling competent. Intrinsic motivation to experience stimulation is when a performs a behavior due to the pleasure and excitement resulting from the activity.

Several studies (Morris et al., 2003; Wolfgang & Dowling, 1981) have demonstrated that adult learners are more intrinsically motivated for academic work and to attend college than younger students. Adult learners try to learn topics, which are interesting or challenging for them (King, 1988), value personal growth and fulfillment, use deeper learning strategies (Kahu et al., 2013) and motivated by the enjoyment of academic work. On the other hand, traditional students are more extrinsically motivated than mature students (Völkening et al., 2010; Wilkesmann, et al., 2012). They are more likely to engage in academic activities due to extrinsic reasons such as

teacher approval or parental expectation. Pressure for academic motivation might undermine interest for academic work for traditional students (Flink et al., 1990), consequently that lead to higher extrinsic motivation.

It is also demonstrated that mature students endorsed both intrinsic and extrinsic motivation for learning (Bye et al., 2007) and to attend university (Taylor & House, 2010). Intrinsic motivation has been associated with positive educational outcomes such as using deep learning strategies, satisfaction with learning and school experience, academic engagement (Reeve et al., 2004), less perceived stress related to academic work (Baker, 2004), academic performance and persistence (Vansteenkiste et al., 2004). On the other hand, extrinsic motivation might lead to anxiety, unhealthy ways of coping with academic stress (Martin & Sorhaindo, 2019) and procrastination (Vansteenkiste et al., 2009).

Intrinsic and extrinsic motivations for academic work are determined by different psychological and social factors, and result in different educational outcomes such as achievement or drop out. Therefore, it is important to understand the mechanisms underlying enrollment and learning of mature or non-traditional students as well as traditional students. In this realm, this literature review aims to examine the motivations of adult learners for learning and enrollment, compare academic motivations of mature students with the motivations of younger students. In addition, it is aimed to specify socio-demographic, psychological and social factors playing role in academic motivation of adult learners.

Method

In this systematic review, the findings of studies examining the intrinsic and extrinsic motivations of mature students for academic work are combined. PRISMA (Preferred Reporting Items for Systematic reviews and Meta-Analyses) (Page et al., 2021) statement guidelines are followed in reporting the systematic review.

Search Strategy

The literature search was conducted in April 2023 using databases ERIC, PsychINFO, SCOPUS and Web of Science. The articles published after 2020 were included in the search. Articles were searched by combining the keyword “adult learners” with “intrinsic motivation” or “extrinsic motivation” and “academic”. In addition, the motivation terms were searched for the research group consisting of mature students or non-traditional students. Another search was conducted with using the terms “goal orientation” and “learning self-regulation” since the scales measuring these variables capture the motivational aspect of academic studies.

Inclusion and Exclusion Criteria

The studies included in the literature review have met the following criteria:

- (a) Studies published in peer-reviewed journals with full text or discussion paper
- (b) Studies published in English after 2020
- (c) Studies using quantitative methods
- (d) Studies conducted with a research group consisting of mature or non-traditional university students

(e) Studies reporting intrinsic and extrinsic motivations to engage in academic work

The literature reviews, qualitative studies, book reviews and dissertations, and also studies not written in English were excluded. The studies, which examined intrinsic and extrinsic motivations among just traditional university students or the students not categorized as mature students, are not included in the literature review. The studies with research groups including adult learners who are not university students as well as the studies on motivations not directly related to academic studies were also excluded.

Study Selection

The literature search yielded 6221 studies. Before screening, duplicates and the articles of which full texts could not be retrieved were removed from the search output. The remaining articles' titles were screened, leaving 427 articles. The screening of the abstracts of these articles resulted in 68 studies. Upon full-text read and based on inclusion and exclusion criteria 17 articles were identified to be eligible for inclusion in the literature review. (Page et al., 2021) in Figure 1.

Data Extraction and Analysis

The studies obtained from literature search were combined using the Mendeley reference management software. The software was used to identify duplicates and to screen the studies based on inclusion and exclusion criteria. The key characteristics of each study including country of the study, study design, sample size and characteristics (age and gender of the participants), motivation variables examined and measurement instruments used in the studies were extracted (Table 1). Data were thematically organized with regard to study aims. The main themes referred to the types of motivation to attend university and to carry out academic work. In addition, socio-demographic, psychological and social factors related to these motivations were identified.

Results

Study Characteristics

The main characteristics of the studies are summarized in Table 1. All of 17 selected studies applied cross-sectional design and used quantitative method. They were all published in peer-reviewed journals except one study (Wilkesmann et al., 2012) which was published as a discussion paper. The studies were carried out in various countries; namely United States (n=7), United Kingdom (n=3), Canada (n=2), Germany (n=2), Czech Republic (n=1), Japan (=1), and Portugal (=1). The sample size of the studies varied from 35 to 10,675. All the participants in the selected studies were university graduates.

The levels of academic motivations of mature or non-traditional university students were compared with younger students' motivations in 13 studies (e.g, Bye et al., 2007; Erb & Drysdale, 2017). Out of the remaining four studies, three (e.g., Shillingford & Karlin, 2013) focused on mature/non-traditional students and one study (Koyanagi et al., 2021) was conducted with university students including mature students but did not provide any comparison based on age. Age was the main characteristic to define mature or non-traditional

students. There was substantial variation in the age range. The cut-point of age to determine the mature students varied from 19 to 30 years.

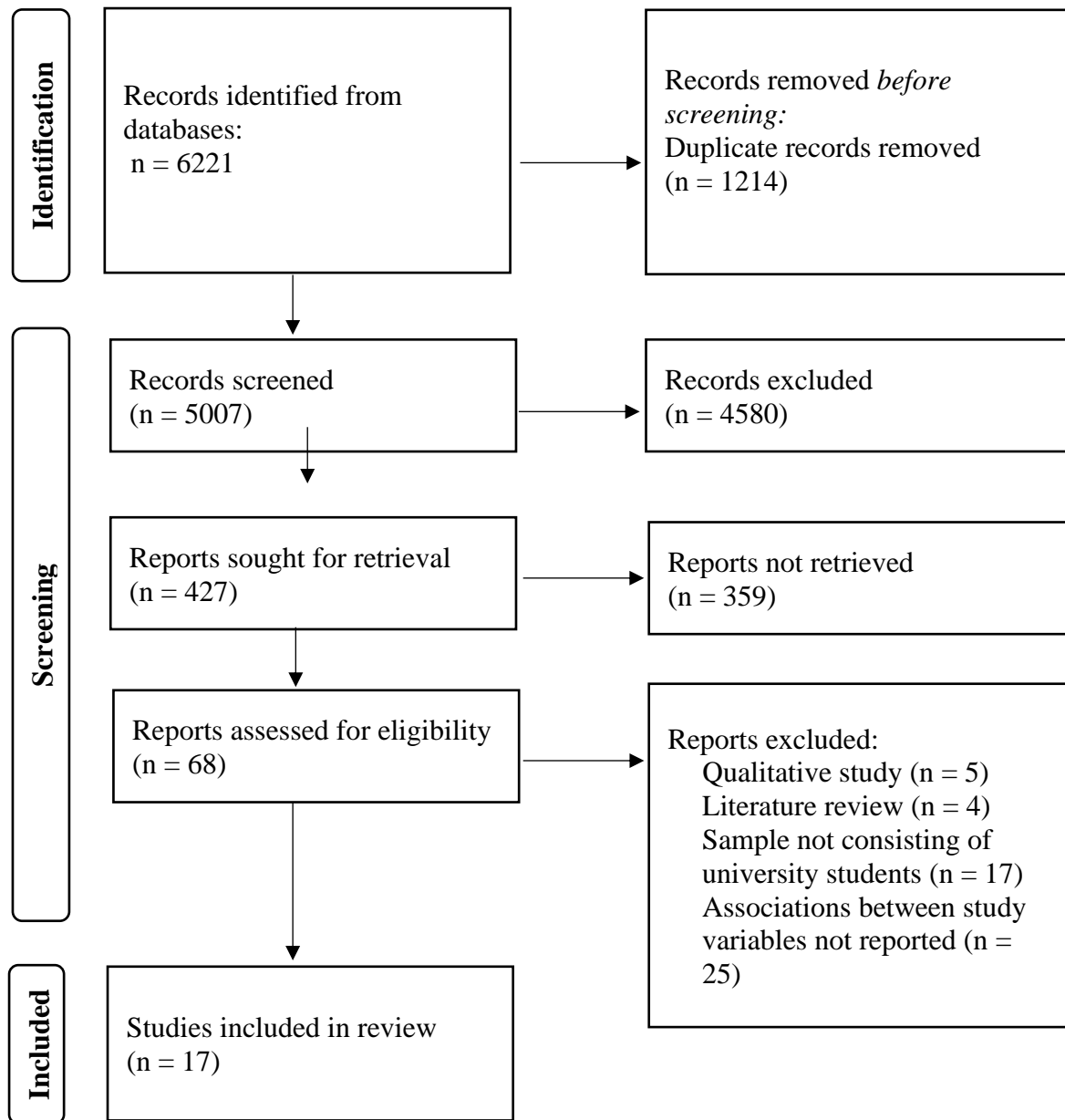


Figure 1 Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) flow diagram

In 13 studies (e.g., Fazey & Fazey, 2001; Novotný et al., 2019) both intrinsic and extrinsic motivations were examined whereas 4 studies (e.g., Justice & Dornan, 2001; Murphy & Roopchand, 2003) only focused on intrinsic motivation. In all studies self-report questionnaires were administered to collect data. Mainly Academic Motivation Scale (AMS) (n=6) (Vallerand et al., 1992) and Motivated Strategies for Learning Questionnaire (MSLQ) (n=5) (Pintrich & De Groot, 1990; Pintrich et al. 1993) were used to measure levels of motivation. Other scales used were Intrinsic Motivation Towards Learning Questionnaire (Whitehead, 1984) (n= 1) Academic Self-Regulation Questionnaire (SRQ-A) (n=1) (Ryan, & Connell, 1989), Learning

Self-Regulation Questionnaire (SRQ-L) (n=1) (Williams & Deci, 1996), Motivation Outcomes Assessment Instrument (MOAI) (Rea, 1991) (n=1). In two studies (Gardner et al., 2022, Javed et al., 2022) academic motivations were measured using the questionnaires developed by the researchers.

Comparison between Motivations of Mature Students with Younger Students

Generally, the studies (e.g., Johnson et al., 2016; Novotný et al., 2019) which made a comparison between mature or non-traditional students with younger students in terms of intrinsic and extrinsic motivations, have demonstrated that mature students were more intrinsically motivated than traditional-age students to learn and engage in academic work. In addition, it was found in most of these studies (e.g., Landrum et al., 2000; Völkening et al., 2010) that traditional students reported higher extrinsic motivation than non-traditional students.

Some studies did not support these general findings. For instance, in Erb and Drysdale’s study (2017) no significant difference was found between intrinsic motivation scores of mature students and those of younger students. When other criterion such as being married (Tilley, 2014) included, the analysis did not reveal significant difference in levels of intrinsic motivation. Besides gender was found to have an effect. It was demonstrated that only non-traditional female students significantly scored higher on intrinsic motivation scale than younger students and non-traditional male students (Justice & Dornan, 2001). In addition, it was found that introjected regulation, one of the subtypes of extrinsic motivation, scores of these two groups were not significantly different (Novotný et al., 2019).

It was also shown that mature students exhibited equal levels of intrinsic and extrinsic motivations to learn (Bye et al., 2007). In studies examining motivation among non-traditional students, no significant effect of age was found on intrinsic motivation or extrinsic motivation (Shillingford & Karlin, 2013). When the mature students were grouped as young mature and mature among themselves, comparison of these two groups based on intrinsic and extrinsic motivations did not reveal any statistically significant results (Erb & Drysdale, 2017).

Table 1 Characteristics of the studies included in the systematic review

| Study | Country | Study Design and Method | Sample Size | Sample Characteristics | Motivation Measures |
|-----------------------|----------------|--------------------------------|--------------------|--|---|
| Bye et al. (2007) | Canada | Cross-sectional, quantitative | 300 | Age Range: 18-60, 44% female 61 non-traditional students (≥28 years) | Motivated Strategies for Learning Questionnaire |
| Erb & Drysdale (2017) | Canada | Cross-sectional, quantitative | 99 | Age Range: 18-42, 58.6% female Young mature (21-24 years) and mature (≥25 years) students | Motivated Strategies for Learning Questionnaire |
| Fazey & Fazey (2001) | United Kingdom | Cross-sectional, quantitative | 394 | Traditional students (<21 years) 52.3% female 90 mature students (≥21 years) | Academic Motivation Scale |
| Gardner et al. (2022) | United States | Cross-sectional, quantitative | 10,675 | Age Range: 25 and older 76.4% female | Questionnaire developed by the researchers |

| | | | | | |
|------------------------------|----------------|-------------------------------|-------|---|---|
| Jacobson & Harris (2008) | United States | Cross-sectional, quantitative | 796 | Traditional students (18-22 years) 121 non-traditional students (≥ 23 years) 60.1% female | Motivated Strategies for Learning Questionnaire |
| Javed et al. (2022) | United Kingdom | Cross-sectional, quantitative | 300 | Age Range: 21-over 50 57.1% female | Questionnaire developed by researchers |
| Johnson et al. (2016) | United States | Cross-sectional, quantitative | 139 | Age Range: 18-59, 62.6% female 51 non-traditional students (19-59 years) | Academic Self-Regulation Questionnaire |
| Justice & Dornan (2001) | United States | Cross-sectional, quantitative | 95 | Age Range: 18-64, 62.1% female 37 non-traditional students (24-64 years) | Motivated Strategies for Learning Questionnaire |
| Koyanagi et al. (2021) | Japan | Cross-sectional, quantitative | 2247 | Age Range: 18-over 60, 28.76% female 1575 mature students (>20 years) | Academic Motivation Scale |
| Landrum et al. (2000) | United States | Cross-sectional, quantitative | 327 | Traditional students (17-24 years) 51.3% female 143 non-traditional students (≥ 25 years) | Motivation Outcomes Assessment Instrument |
| Murphy & Roopchand (2003) | United Kingdom | Cross-sectional, quantitative | 160 | Age Range: 18-48 years, 50% female 80 Mature students (21-40 years) | Intrinsic Motivation Towards Learning Questionnaire |
| Novotný et al. (2019) | Czech Republic | Cross-sectional, quantitative | 1,885 | 66.6% female 100 non-traditional students (>26 years) | Academic Motivation Scale |
| Rothes et al. (2022) | Portugal | Cross-sectional, quantitative | 361 | Age Range: 18-64 years, 57.3% female 223 non-traditional students (24-64 years) | Learning Self-Regulation Questionnaire |
| Shillingford & Karlin (2013) | United States | Cross-sectional, quantitative | 35 | Age Range: 25-49 years 82.9% female | Academic Motivation Scale |
| Tilley (2014) | United States | Cross-sectional, quantitative | 151 | Age Range: 18-62 years, 68.2% female 128 mature students (>25 years) | Motivated Strategies for Learning Questionnaire |
| Völkening et al. (2010) | Germany | Cross-sectional, quantitative | 300 | Age Range: 18-53 years, 77% female 190 mature students (19-53 years) | Academic Motivation Scale |
| Wilkesmann et al. (2012) | Germany | Cross-sectional, quantitative | 3687 | 101 non-traditional students (>30 years) | Academic Motivation Scale |

Factors Related to Intrinsic and Extrinsic Motivations

The factors related to academic motivation of mature university students were grouped into two broad categories. First category consisted of socio-demographic variables including gender, break in educational trajectory, type of degree, academic program, work experience and occupational status. The second group included psychological and social factors, namely self-esteem, self-efficacy, social capital and teacher support.

Socio-demographic factors

The studies included in the literature review revealed gender differences in levels of intrinsic motivation or extrinsic motivation among mature students. Male students were repeatedly found to be more extrinsically motivated than female students (Gardner et al., 2022; Wilkesmann et al., 2012) whereas female students showed more intrinsic motivation than male

students (Gardner et al. 2022, Murphy & Roopchand, 2003). Yet, in a study (Novotný et al., 2019) examining subtypes of both intrinsic and extrinsic motivations, female students scored significantly higher than males on both identified regulation and introjected regulation as well as intrinsic motivation toward accomplishment.

In addition, gender differences varied depending on the age of mature students. Male students over the age of 25 were found to be more extrinsically motivated than female students (Erb & Drysdale, 2017). However, this gender difference was reversed for young mature students between the ages of 21 and 24.

The motivation of the adult learners for academic work depends on many educational characteristics such as type of degree. In a study (Gardner et al., 2022) conducted with non-traditional students, the students pursuing 2-year degrees showed more extrinsic motivation than the students pursuing a bachelor's degree. There were also motivational differences based on break in educational trajectory. Adult learners were more intrinsically and less extrinsically motivated if they had a break of at least one year in formal education (Novotný et al., 2019).

Enrollment status and the academic program of the students were also identified as important variables related to extrinsic motivation (Gardner et al., 2022). The number of students in the groups of full-time or part-time studying students was found to be high, yet part-time studying students also exhibited extrinsic motivation. Besides, the students enrolled in medical or a technical program had higher extrinsic motivation scores than students enrolled in business education and human services programs.

Work-related variables have also been examined in relation to academic motivations of mature students. A study with physiotherapy and occupational therapy students showed that employed students exhibited higher intrinsic motivation to know and preemployment students had higher external regulation scores (Völkening et al., 2010). On the other hand, previous work experience was identified as a negative predictor of intrinsic motivation (Koyanagi et al., 2021). Similarly, it is demonstrated that as the previous work experience increased, the likelihood of mature students to be intrinsically motivated decreased and they showed more extrinsic motivation for academic work (Gardner et al., 2022).

Psychological and social factors

The relationship of adult learners' academic motivations with different psychological and social factors have been examined in some of the reviewed studies. For instance, self-esteem has been shown to be positively related to intrinsic motivation in a study with a sample, half of which were mature students (Murphy & Roopchand, 2003). In addition, mature students had higher self-esteem and intrinsic motivations than younger students, and mature female students had the highest self-esteem and intrinsic motivation scores.

In a study (Johnson et al., 2016) comparing traditional students and non-traditional students in terms of motivation, it was found that non-traditional students had higher identified regulation, intrinsic regulation as well as higher self-efficacy and teacher academic support and attribution of teacher influence scores than traditional students. Self-efficacy, teacher academic support and attribution of teacher influence were shown to be positively correlated with identified regulation and intrinsic regulation.

Social capital has also been determined as an important factor related to mature students' academic motivations. Koyanagi and colleagues (2021) examined the relationship between social capital and motivations in a research group, consisting of mostly mature university students, in Japanese context. Classroom social capital was identified as the most important positive predictor of both intrinsic and extrinsic motivations. Family, on-campus and community social capital were also shown to positively influence both types of motivation.

Discussion

This study reviewed the results of 17 studies on intrinsic and extrinsic motivations of adult learners, also called mature or non-traditional students in these studies. They were all quantitative studies applying cross-sectional design and using mainly two scales; Academic Motivation Scale (AMA) and Motivated Strategies for Learning Questionnaire (MSLQ). The studies were conducted in seven different countries, which is considered to enhance the generalizability of the findings of the current review.

In all of the studies (e.g., Javed et al., 2022; Rothes et al., 2022), the main criterion to define mature students was age. However, the cut off age has varied substantially across studies, from 19 to 30 years of age. Besides, additional characteristics such as break in formal education (Novotný et al., 2019) or working more than 20 hours a week (Wilkesmann et al., 2012) are used to determine non-traditional students. These differences suggest that there is no clear definition of mature or non-traditional students. Therefore, it is important to take into account the specific criterion used to determine the research group in comparing findings of studies conducted with adult learners.

The motivations of mature students for academic work and attending university with those of younger students were compared in 13 studies. This literature review revealed that mature students were more intrinsically motivated than traditional students (Johnson et al., 2016; Landrum et al., 2000) for academic work. As Self-Determination Theory posits (Deci & Ryan, 1985; Ryan & Deci, 2000), it seems that mature students attend university and carry out academic tasks for the pleasure and satisfaction derived from academic work. They are more likely to value personal growth (Kahu et al., 2013) and they engage in academic work since they find it interesting (King, 1988).

The review also showed that traditional students had higher extrinsic motivation for academic work compared to those of mature students (Novotný et al., 2019; Völkening et al., 2010). From these studies, it appears that the motivation of younger students is more likely to rely on external factors. In line with Self-Determination Theory (Ryan & Deci, 2000), traditional students might be expected to engage in academic work to avoid punishment or gain external rewards such as better grades or parental approval.

In spite of these findings on intrinsic motivation, some studies have provided evidence that there is no significant difference in intrinsic motivation scores of non-traditional students with those of traditional students (Erb & Drysdale, 2017). Differences in characteristics of research groups, the educational system where the study conducted or the scale used might have led to these different findings. In addition, criterion used to determine the research group or socio-demographic factors might have played a role. For instance, it was found that using additional criterion besides age (Tilley, 2014) did not produce significant differences in intrinsic

motivation scores or significant results were found between these groups only when gender was added to the analyses (Justice & Dorman, 2001).

Subtypes of intrinsic and extrinsic motivations have been examined in few studies (e. g., Rothes et al., 2022) among non-traditional students. Examining these subtypes in relation to psychological and social factors as well as comparing scores of non-traditional and traditional students on subtypes of intrinsic or extrinsic motivation might lead to different results. For instance, Novotný and colleagues (2019) did not find differences in subtypes of extrinsic motivation. Therefore, focusing on subtypes of intrinsic and extrinsic motivations is considered important to fully understand learning processes of adult learners.

The results of the reviewed articles also indicate that gender, educational characteristics such as types of degree and employment, and previous work experience are important socio-demographic factors playing role in both intrinsic and extrinsic motivations. Among these factors, gender differences were examined the most in reviewed studies. Several studies demonstrated that female mature students were more intrinsically motivated than male mature students (Murphy & Roopchand, 2003) and male mature students reported higher extrinsic academic motivation than female mature students (Gardner et al., 2022).

Only few reviewed studies examined the relationship between academic motivation and various psychological and social variables among mature students. With respect to findings of the reviewed studies, it can be argued that higher self-esteem (Murphy & Roopchand, 2003), self-efficacy, teacher support and influence (Johnson et al., 2016), social capital (Koyanagi et al., 2021) are positively associated with higher intrinsic motivation. Social networks including relationships with family and friends as well as belonging to community and university seem to enhance intrinsic motivation of adult learners.

Conclusion

Findings of this literature review highlight the motivational differences between mature students and younger students. This review has demonstrated that several socio-demographic variables, psychological and social factors play role in motivations of adult learners for academic work. Yet, more research examining the effects of different psychological and social processes such as resilience or school climate on motivation is needed to better understand academic experiences of mature students. Considering that nontraditional students have different expectations, responsibilities, university and work experience than traditional students, it is important to develop educational programs that satisfy the unique educational and developmental needs of adult learners.

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