# Student-centered learning (SCL) in Georgia and its effect on the career success

by

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*A Dissertation Submitted to the Faculty of the **Education Sciences** in Partial Fulfillment of the Requirements for the Degree of Doctor of Education Science*

***at East European University***

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**Tbilisi, 0159, Georgia**

**2025**

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ნათია გეგელაშვილი

*სადისერტაციო ნაშრომი წარდგენილია აღმოსავლეთ ევროპის უნივერსიტეტის განათლების მეცნიერებების ფაკულტეტზე განათლების მეცნიერების დოქტორის აკადემიური ხარისხის მოსაპოვებლად*

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### Signature page

We confirm that we have reviewed the doctoral dissertation prepared by Natia Gegelashvili entitled **"Student-Centered Learning (SCL) in Georgia and Its Effect on the Career Success"** and recommend that it be submitted for consideration to the Dissertation Council of the Faculty of Education Sciences at East European University for the awarding of the academic degree of Doctor of Education Science''

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## ACKNOWLEDGEMENTS

First and foremost, I would like to express my deepest gratitude to my supervisor, Prof. Davit Sikharulidze, for his continuous guidance, encouragement, and support throughout the course of my doctoral research. His valuable insights, patience, and constructive feedback were crucial for the successful completion of this thesis.

I also wish to extend my sincere appreciation to the Dean of the Faculty of Education Sciences, Assoc. Prof. Ketevan Aptarashvili, and to all the faculty members, whose academic advice, motivation, and inspiring lectures have contributed greatly to my academic and professional development.

Finally, I would like to acknowledge my family for their constant love, encouragement, and belief in me throughout this journey. Without their support, this achievement would not have been possible.

Natia Gegelashvili

## DEDICATION

I dedicate this work to my beloved niece and nephew, Nutsa and Sandro, whose bright smiles, pure hearts, and endless love have been my greatest inspiration. Their joy and curiosity remind me every day why perseverance and hope matter. This journey is for them, with all my love.

## Abstract

Twenty years after Georgia's accession to the Bologna Process in 2005, it remains an open empirical question whether and to what extent Georgian higher education institutions have succeeded in implementing genuine SCL practices and whether these practices actually translate into measurable career advantages for graduates.

Georgia represents a particularly interesting case. As a post-Soviet transition country pursuing intensive European integration, it formally committed itself early to the Bologna principles, including the paradigmatic shift from teacher-centred to student-centred instruction. Structural reforms – the introduction of the three-cycle system, ECTS credits, quality assurance mechanisms, and learning-outcomes orientation – have been largely accomplished on paper. However, numerous studies and reports indicate that deep cultural and pedagogical transformation has lagged behind formal compliance. Persistent teacher-dominated practices, limited institutional support for innovative teaching, and a continuing focus on knowledge reproduction rather than competence development are repeatedly documented. At the same time, Georgian graduates frequently report significant gaps between the competencies acquired at university and the actual demands of the labour market. These contradictory signals raise the central question of the present dissertation: two decades after joining the Bologna Process, to what extent has Student-Centred Learning (SCL) become an effective reality in Georgian higher education, and does it actually contribute to graduates' career success?

The overarching aim of the study is to examine the nature, extent, and effectiveness of SCL in Georgian higher education twenty years after Bologna accession and to determine its influence on graduates' career success through the mediating role of individual competencies. More specifically, the dissertation pursues two objectives: (Qualitative study) an in-depth exploration of how academic staff perceive and implement SCL in practice; (Quantitative study) an examination of the impact of SCL practices on the development of competencies and, ultimately, on career success.

The present dissertation, based on 12 in-depth interviews with academic staff and data from 281 employed graduates, master's and doctoral students, employs heuristic qualitative research as well as quantitative research conducted through confirmatory factor analysis and structural equation modeling. It thus constitutes a comprehensive empirical study of a key approach of the Bologna Process—student-centred learning—in the Georgian context. The findings are expected to carry significant theoretical, policy, and practical implications not only for Georgia but for all post-Soviet countries navigating the difficult transition from teacher-centred Soviet traditions toward genuine student-centred higher education within the European Higher Education Area.

The qualitative inquiry brought to light that, twenty years after Georgia's accession to the Bologna Process, SCL in higher education remains largely declarative and superficial. A stark institutional divide is evident: In public universities, particularly the large, traditional ones, SCL is predominantly cosmetic – included in syllabi and course descriptions primarily to satisfy accreditation requirements. In private universities, especially the newer, smaller, and more business-oriented institutions, SCL is considerably more authentic and integrated into everyday teaching. Lecturers employ active, interactive methods more frequently and experience clearer institutional expectations and support for innovative pedagogy. This public–private divergence emerged as one of the most consistent and pronounced themes across all interviews and represents the strongest observable predictor of the actual presence of genuine student-centred practices in contemporary Georgian higher education.

The quantitative findings revealed an unexpected pattern: SCL did not exert the anticipated direct positive effect on individual competencies. Academic Self-Efficacy proved to be the dominant predictor, explaining the largest share of competence development. Individual competencies, in turn, fully mediated the relationship with career success.

## აბსტრაქტი

2005 წელს ბოლონიის პროცესში გაწევრიანებიდან ორი ათწლეულის შემდეგ, ღია ემპირიულ კითხვად რჩება, რამდენად მოახერხეს საქართველოს უმაღლესმა საგანმანათლებლო დაწესებულებებმა სტუდენტზე ორიენტირებული სწავლების (SCL) პრაქტიკების დამკვიდრება და რამდენად აისახება ეს პრაქტიკები კურსდამთავრებულთა კარიერულ წარმატებაზე.

საქართველომ, როგორც პოსტსაბჭოთა ქვეყანამ, რომელიც ინტენსიურ ევროპულ ინტეგრაციას ახორციელებს, ადრეულ ეტაპზე აიღო ბოლონიის პრინციპების შესრულების ვალდებულება, მათ შორის მასწავლებელზე ორიენტირებული მოდელიდან სტუდენტზე ორიენტირებულ მოდელზე გადასვლა. სტრუქტურული რეფორმები – სამსაფეხურიანი უმაღლესი განათლების სისტემა, ECTS კრედიტები, ხარისხის უზრუნველყოფის მექანიზმები და სწავლის შედეგებზე ორიენტაცია – ფორმალურ დონეზე უმეტესწილად განხორციელდა. თუმცა, მრავალმა კვლევამ და ანგარიშმა აჩვენა, რომ ღრმა კულტურულ-პედაგოგიური ტრანსფორმაცია ჩამორჩა ფორმალურ შესაბამისობას. მასწავლებელზე ორიენტირებული პრაქტიკები, ინოვაციური სწავლებისადმი ინსტიტუციური მხარდაჭერის უკმარისობა თუ ცოდნის რეპროდუქციაზე ორიენტაცია კომპეტენციების განვითარების ნაცვლად კვლავ დომინანტურია. ამავდროულად, ქართველი კურსდამთავრებულები ხშირად აღნიშნავენ უნივერსიტეტში მიღებულ კომპეტენციებსა და შრომის ბაზრის მოთხოვნებს შორის არსებულ მნიშვნელოვან ხარვეზებს. ეს წინააღმდეგობრივი სიგნალები აყალიბებს წინამდებარე დისერტაციის ცენტრალურ კითხვას: ბოლონიის პროცესში გაწევრიანებიდან ორი ათწლეულის შემდეგ, რამდენად გახდა სტუდენტზე ორიენტირებული სწავლება ეფექტური რეალობა საქართველოს უმაღლეს განათლებაში და რამდენად უწყობს ხელს ის კურსდამთავრებულთა კარიერულ წარმატებას?

კვლევის ზოგადი მიზანია გამოიკვლიოს სტუდენტზე ორიენტირებული სწავლების ბუნება, გავრცელება და ეფექტიანობა საქართველოს უმაღლეს განათლებაში ბოლონიის პროცესში გაწევრიანებიდან ორი ათწლეულის შემდეგ და დაადგინოს მისი გავლენა კურსდამთავრებულთა კარიერულ წარმატებაზე ინდივიდუალური კომპეტენციების მედიატორული როლის გზით. უფრო კონკრეტულად, დისერტაცია მიჰყვება ორ ძირითად მიზანს: (თვისებრივი კვლევა) აკადემიური პერსონალის მიერ SCL-ის გააზრებისა და პრაქტიკაში განხორციელების სიღრმისეული კვლევა; (რაოდენობრივი კვლევა) გაგება, თუ რა გავლენას ახდენს SCL-პრაქტიკები კომპეტენციების განვითარებასა და საბოლოოდ კარიერულ წარმატებაზე.

აკადემიური პერსონალის 12 სიღრმისეული ინტერვიუსა და 281 დასაქმებული კურსდამთავრებულის/მაგისტრანტ-დოქტორანტის მონაცემებზე დაფუძნებული ევრისტიკური თვისებრივი კვლევით და კონფირმატორული ფაქტორული ანალიზისა და სტრუქტურული განტოლებების მოდელირებით განხორციელებული რაოდენობრივი კვლევით, წინამდებარე ნაშრომი წარმოადგენს ყოვლისმომცველ ემპირიულ ნაშრომს ბოლონიის პროცესის მნიშვნელოვანი მიდგომის – სტუდენტზე ორიენტირებული სწავლების – შესახებ საქართველოს კონტექსტში. შედეგები მნიშვნელოვან თეორიულ, პოლიტიკურ და პრაქტიკულ იმპლიკაციებს შეიცავს არა მხოლოდ საქართველოსთვის, არამედ ყველა პოსტსაბჭოთა ქვეყნისთვის, რომლებიც საბჭოთა მასწავლებელზე ორიენტირებული ტრადიციებიდან ევროპული სტუდენტზე ორიენტირებული უმაღლესი განათლებისაკენ რთულ გზას გადიან.

თვისებრივი კვლევის შედეგებმა წარმოაჩინა ის, რომ ბოლონიის პროცესში გაწევრიანებიდან ორი ათწლეულის შემდეგაც სტუდენტზე ორიენტირებული სწავლება საქართველოს უმაღლეს განათლებაში ძირითადად დეკლარატიული

და ზედაპირული ხასიათისაა. გამოკვეთილია მკვეთრი ინსტიტუციური განსხვავება: საჯარო უნივერსიტეტებში, SCL ძირითადად შაბლონური ხასიათისაა – სილაბუსებში ხშირ შემთხვევაში აკრედიტაციის მოთხოვნების დასაკმაყოფილებლად ფიგურირებს. კერძო უნივერსიტეტებში, განსაკუთრებით ახალგაზრდა, მცირე და ბიზნესზე ორიენტირებულ დაწესებულებებში, SCL გაცილებით ავთენტური და ყოველდღიური სასწავლო პრაქტიკაა. საჯარო–კერძო უნივერსიტეტებს შორის განსხვავება ყველა ინტერვიუში ერთ-ერთი ყველაზე თანმიმდევრული და გამოკვეთილი თემა აღმოჩნდა და დღეს საქართველოში ნამდვილი სტუდენტზე ორიენტირებული პრაქტიკების არსებობის ყველაზე ძლიერ ხილულ პრედიქტორად რჩება.

რაოდენობრივი კვლევის შედეგებმა მოულოდნელი შედეგი აჩვენეს: სტუდენტზე ორიენტირებულმა სწავლებამ ინდივიდუალურ კომპეტენციებზე მოსალოდნელი პირდაპირი დადებითი გავლენა არ გამოავლინა. აკადემიური თვითეფექტურობა აღმოჩნდა დომინანტური პრედიქტორი, რომელიც კომპეტენციების განვითარების უდიდეს წილს ხსნის. რაც შეეხება ინდივიდუალურ კომპეტენციებს, ისინი სრულად ასრულებენ მედიატორის როლს და მნიშვნელოვნად განაპირობებენ კარიერულ წარმატებას.

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# ABBREVIATIONS AND ACRONYMS

CFA – Confirmatory Factor Analysis

ECTS – European Credit Transfer and Accumulation System

EFA – Exploratory Factor Analysis

EHEA – European Higher Education Area

EQE – National Center for Educational Quality Enhancement (Georgia)

EU – European Union

HEI – Higher Education Institution

LMS – Learning Management System

PBL – Problem-Based Learning

$R^2$ – Coefficient of Determination (R-squared)

SCL – Student-Centered Learning

SEM – Structural Equation Modelling

STEM – Science, Technology, Engineering and Mathematics

$\beta$ – Standardized Regression Coefficient (Beta)

p – Probability Value (p-value)

# CHAPTER 1 INTRODUCTION

## *1.1 Background of the study*

In today's globalized world, introducing reforms aimed at harmonizing educational systems and improving their efficiency becomes essential (Javakhishvili, Gelashvili, & Bakradze, 2025). One prominent example of such reform in Europe is the Bologna Process, which aims to enhance inclusivity, accessibility, and competitiveness in higher education by promoting cooperation and reducing barriers among countries (European Education Area, 2022).

In line with these European initiatives, Georgia, pursuing European integration, shares Europe's cultural heritage and actively aligns with its educational model (Malazonia, Maglakelidze, Chiabrishvili, & Gakheladze, 2017). This alignment is reflected in Georgia's strong cooperation with the EU since the Partnership and Cooperation Agreement in 1999, which deepened further with the European Neighborhood Policy in 2004 (Darchashvili, 2021).

The Bologna Declaration of 1999, building on the 1998 Sorbonne Declaration, marked the beginning of a process that has transformed higher education across Europe. Today, this process includes 48 countries, including Belarus (2015) (Bologna Process Implementation Report, 2018), and was designed to boost the competitiveness of European universities, particularly in response to the growing influence of U.S. institutions in education and research (Joseph & Val, 2016).

In 2005, Georgia, along with four other Eastern Partnership (EaP) countries—Armenia, Azerbaijan, Moldova, and Ukraine—formally joined the Bologna Process at the Bergen Summit. This step aimed to align Georgia's higher education system with European educational standards, enhancing its credibility and recognition both across Europe and internationally (Ministry of Education and Science of Georgia (MES), 2012). As a result, this milestone marked the beginning of a new era in the higher education sector, significantly influencing both internal and external stakeholders (Sikorska, 2023).

Following the Bologna Declaration guidelines, key reforms in Georgia included restructuring tertiary education into three cycles, implementing the European Credit

Transfer and Accumulation System (ECTS), establishing internal quality assurance mechanisms at the institutional level, and promoting academic mobility. Together, these changes were designed to increase international recognition of university diplomas, enhance competitiveness, and facilitate integration into the European Higher Education Area (EHEA) (Sikorska, 2023).

Over time, the Bologna reforms have profoundly transformed Georgia's higher education landscape, affecting not only the number of institutions but also their structural and institutional organization, operational objectives, and strategic development plans (Lejava, Amashukeli, & Chitashvili, 2022).

One of the main objectives of these reforms was the integration of Student-Centered Learning (SCL) into the country's higher education system (Gogsadze, 2015, S. 4). SCL has been shown to enhance students' critical thinking skills, problem-solving abilities, and learning attitudes, while also contributing to increased overall attendance (Overby, 2011). Consequently, higher education is broadly recognized as a key driver of life success by providing greater employment prospects, financial security, and an enhanced quality of life. In response, universities continuously evolve to meet changing social, economic, and labor market demands (Fülöp, et al., 2022).

Reflecting the consensus expressed in the European Higher Education Ministerial Communiqué (Bologna Process, 2009): **"Student-centred learning (…) will help students develop the competences they need in a changing labour market and will empower them to become active and responsible citizens"** it can be concluded that SCL plays a crucial role in fostering competencies that enhance career success**.** In the document, these abilities are termed *transversal competences*, which higher education institutions are expected to cultivate in their students in order to enhance their prospects for career success (Bologna Process, 2009).

In the context of fostering career success, Pârvu and Ipate emphasize that higher education institutions (HEIs) should align their structures and practices with workforce demands. This includes cooperating with the labor market, addressing employers' real needs to enhance employability, diversifying teaching methods to develop practical and transferable skills, supporting problem-solving, adaptability, resilience, and social competencies, and fostering

a strong motivation for lifelong learning to ensure long-term career success (Pârvu & Ipate, 2010).

Career success at the individual level involves material resources, influence, and personal fulfillment (Gattiker & Larwood, 1990). Understanding this concept enables individuals to plan and advance their professional development (Ellis & Heneman, 1990). Moreover, individual success within organizations significantly contributes to achieving managerial objectives and the broader goals of business development (Aryee, Chay, & Chew, 1994). At educational institutions, the career success of graduates serves as a valuable indicator for evaluating the relevance and effectiveness of teaching and training programs. While career success is a critical aspect across various disciplines, there is still a limited number of studies worldwide examining the factors that influence employees' career success (Binh & Nguyen, 2020).

### *1.2 Statement of the problem*

Higher education is increasingly recognized worldwide as a key driver of individual success, economic growth, and social mobility (Billingham, 2018; Fülöp, et al., 2022). Over the past three decades, enrollment in higher education has grown significantly across the globe (Calderon, 2018), reflecting the expanding role of universities in preparing students for the workforce (OECD, 2019). In line with this trend, OECD data indicate that the primary goal of higher education is to equip students with the skills necessary to thrive in the labor market (OECD, 2019). Consequently, higher education institutions must design academic and educational programs that provide both theoretical knowledge and practical skills, enabling students to become engaged members of society and competitive professionals in the future (Fülöp, et al., 2022; Fernández, Ryan, & Begeny, 2023; Wood & Olivier, 2004).

Within this context, career success has emerged as a central focus in research on higher education outcomes (Kuh, Kinzie, & Buckley, 2006). It holds importance not only for individuals and their organizations but also provides valuable feedback for educational institutions themselves (Schein, 1978). However, despite its significance across many fields, research on the factors influencing career success remains limited (Binh & Nguyen, 2020).

In line with these developments, recent trends in higher education emphasize learning outcomes-oriented approaches, with SCL being a key direction within the EHEA (Bologna Process, 2005) (Bologna Process, 2009). This approach encourages active student engagement and considers individual learning needs (Attard, Ioio, Geven, & Santa, 2010; Kaput, 2018). Nevertheless, Khabeishvili (2023) points out that there is still a clear lack of encouragement for the implementation of this approach within Georgia's higher education system (Khabeishvili, 2023). Similarly, Bochorishvili and Peranidze (2020) note that, despite positive reforms, the Georgian education system continues to face challenges in producing graduates who fully meet labor market requirements (Bochorishvili & Peranizde, 2020). Given these circumstances, investigating the challenges facing education and reviewing the results of reforms is key to maintaining alignment with global trends and priorities (Darchashvili, 2021).

In the Eastern Partnership (EaP) countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine), deeply rooted Soviet academic traditions made higher education reform challenging. Universities tended to resist change, and limited resources for curriculum development, faculty training, and infrastructure hindered rapid reform. Additionally, transitioning from Russian as the dominant academic language complicated research networks and international collaborations. Political instability further disrupted reform efforts. Nevertheless, EaP states have made significant strides to modernize their higher education systems, align with European standards, and reduce Soviet-era influences (Sikorska, 2023).

Regarding Student-Centered Learning (SCL), a key aspect of the Bologna Process, research in Georgia remains limited. Among recent research, the empirical study by Tvaltchrelidze & Aleksidze (2019), titled "Georgian Teachers' Awareness of the Importance of student-centered Classroom Management Tendencies ", stands out. This study focuses on assessing the tendencies of student-centered management and teaching practices in Georgian schools (Tvaltchrelidze & Aleksidze, 2019). A later study conducted in 2022 focuses on the self-assessment of competences by university graduates. More specifically, the research evaluates graduates' self-perception of their competencies and reflects the structural and content-related imbalances existing between the education received at university and the demands of the labor market. The study shows that despite high evaluations of general skills development, the deficiency in practical competencies significantly limits graduates'

career success (Amashukeli, Lezhava, & Chitashvili, 2022). It should be noted that the majority of the study participants were graduates of public universities (Amashukeli, Lezhava, & Chitashvili, 2022). Although the study provides a significant overview of the impact of higher education on graduates' competencies, it does not directly investigate SCL practices or their quality of implementation in higher education. This represents an important distinction from the current dissertation, which focuses specifically on the study of SCL approache and its influence on career success. SCL approache is at the center of Guranda Khabeishvili's (2023) research. Although the study's findings indicate attempts to apply these approaches, it clearly appears that SCL still does not represent an institutional priority for universities (Khabeishvili, 2023). This situation further accentuates the significance of the present dissertation research — its aim is not merely to assess attitudes or rhetorical dispositions, but to conduct an in-depth analysis of the functional practices, as well as the accessibility and effectiveness of SCL, specifically within the Georgian higher education context.

Furthermore, the relevance of the present study is also emphasized by the fact that The Leuven/Louvain-la-Neuve Ministerial Communiqué clearly states that SCL will assist students in developing the competencies they need in a dynamic labour market (Bologna Process, 2009). Therefore, it is relevant to understand to what extent university graduates acquire competencies from their university education that contribute to their career success. The relevance of the study is further intensified by the fact that, although career success stands out as a central aspect in higher education success research (Kuh, Kinzie, & Buckley, 2006) there is still limited international research conducted on the factors influencing it (Binh & Nguyen, 2020).

### *1.3 Conceptual framework*

Based on the literature analysis (Chapter 2) the conceptual framework for the major part of the study (quantitative phase) was developed (see Figure 3). The framework illustrates the relationship between SCL, the development of individual competencies, and career success. It highlights SCL as the central mechanism through which students acquire key competencies that are essential for their professional growth and labor market integration. The model also incorporates the role of academic self-efficacy in shaping individual competence development. Individual competencies function as a mediating variable between SCL and

career success. In other words, SCL does not influence career success directly; rather, its effect is transmitted through the competencies that students develop during their learning process.

At the core of the framework is SCL, which functions as the main driving mechanism for the development of individual competencies. The framework shows that the effectiveness of SCL depends on two key dimensions:

1. Institutional Conditions (See Chapter 2.4.1): refer to the environment and support structures provided by higher education institutions. These include Material resources; Library resources; Informational resources; Student counseling and support services. These elements contribute to the degree to which universities are able to create a supportive learning environment that enables the implementation of SCL principles.

2. Innovative Teaching (See Chapter 2.4.2): This dimension focuses on teaching practices that align with student-centered approaches. This includes: Collaboration between teachers and students; Students' involvement in educational process; Assessment; Use of technology in the teaching and learning; Teaching methods and strategies.

Taken together, the conceptual framework demonstrates that the successful implementation of SCL relies not only on pedagogical practices, but also on broader institutional support systems. When these conditions are in place, SCL contributes to the development of individual competencies, which, in turn, mediate students' ability to achieve career success. This understanding positions SCL as a transformative approach that links higher education practices to labor market outcomes. Thus, the framework provides a basis for empirically examining how effectively Georgian universities integrate SCL principles, the extent to which these practices foster essential competencies, and how these competencies ultimately influence graduates' career trajectories.

### *1.4 Research objective*

The main objective of the present dissertation is to examine, through quantitative research, the impact of SCL on the career success of graduates 20 years after Georgia's accession to the Bologna Process.

While The Leuven/Louvain-la-Neuve Ministerial Communiqué clearly states that SCL will assist students in developing the competencies they need in a dynamic labour market (Bologna Process, 2009), the question arises: to what extent do university graduates acquire the competencies from their university education that contribute to their career success?

However, before addressing the main research aim, it is essential to understand what SCL entails in the Georgian context and how it is perceived by higher education stakeholders. This is particularly important given that, as Paul Gibbs et.al notes, there appears to be a lack of consistent and unified understanding of the concept of SCL within Georgian higher education (Gibbs, et al., 2022). Consequently, it was also necessary to conduct a qualitative study. The primary objective of the qualitative study is to provide an in-depth analysis of this issue.

The study adopts a two-phase design: a qualitative phase that explores academic staff's perceptions and experiences regarding SCL, followed by a quantitative phase examining the relationship between SCL-related competencies and career success from the student/alumni perspective.

Both studies address different facets of the same overarching research problem, they were designed and executed independently, with distinct research questions, participant groups, data-collection instruments, and analytical approaches. This two-study structure deliberately capitalises on the unique strengths of qualitative depth and contextual richness on the one hand, and quantitative breadth, measurement precision, and statistical modelling on the other, thereby providing a more comprehensive and nuanced understanding of SCL in the Georgian context than either approach could achieve alone.

The dissertation thus presents the findings of the two studies sequentially: the qualitative study first establishes the contextual realities of SCL implementation, followed by the quantitative study that tests its measurable impact on graduate outcomes from the alumni perspective.

### *1.5 Research questions and hypothesis*

The objectives that can be achieved include finding answers to the following main questions:

- Qualitative study (Academic and Administrative Staff Focus): What are the lived experiences of Georgian academic staff with SCL?
- Quantitative study (Graduates, Master's and Doctoral Students Focus): What effect does SCL have on career success?

In the first phase of the study, which employs a qualitative research design and uses heuristic inquiry as its methodology, the focus is on exploring both the conceptual understanding and the practical implementation of SCL within Georgian higher education institutions. This stage seeks to uncover how academic and administrative staff perceive and interpret the principles of SCL, as well as the extent to which these principles are integrated into actual teaching and learning practices.

In the second phase of the study, which adopts a quantitative research approach, a conceptual framework has been developed to examine the potential relationship between competencies associated with SCL and graduates' career success (see Chapter 2). Based on this framework, the following hypotheses have been formulated to guide the empirical investigation:

**H1: SCL → Individual Competencies**

SCL have a positive effect on Individual Competencies.

**H2: Academic Self-efficacy → Individual Competencies**

Academic Self-efficacy positively affects Individual Competencies.

**H3: Individual Competencies → Career Success**

Individual Competencies positively affect Career Success.

### *1.6 Ethical considerations*

Ethical principles and standards must be upheld throughout all phases of the research process (Babin, Carr, Griffin, & Quinlan, 2015). These principles can be categorised into four main areas (Bell, Bryman, & Harley, 2019; Gray, 2020):

- Ensuring that respondents are not harmed;

- Securing informed consent from participants;
- Protecting the privacy of respondents; and
- Refraining from employing any form of deception.

Participation in a survey must be entirely voluntary, and no one should be forced to take part. If a respondent chooses not to participate, their decision should be fully honored. Additionally, respondents should have the right to withdraw from the survey at any point (Sekaran & Bougie, 2020).

It is the researcher's responsibility to identify any potential risks to participants and to take appropriate steps to mitigate them (Bell, Bryman, & Harley, 2019). A study may be considered harmful if it results in participants experiencing embarrassment, ridicule, belittlement, psychological discomfort, or any form of anxiety, stress, or negative emotional response (Gray, 2020).

Privacy or anonymity guarantees that respondents remain unidentifiable without their permission, while confidentiality involves maintaining the security and privacy of the information provided (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

Respondents should receive complete information regarding the objectives and procedures of the study (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017), and it is essential that informed consent is obtained from all participants (Sekaran & Bougie, 2020). Informed consent guarantees that participants receive adequate information about the study, enabling them to make an informed decision about their participation (Bell, Bryman, & Harley, 2019).The researcher is responsible for explaining the research procedures to respondents before requesting their consent in the relevant section of the questionnaire. If organisations are involved, consent must also be obtained from the organisation (Gray, 2020). Since no organizations participated, this study required solely the informed consent of the individual respondents. For online self-administered questionnaires, informed consent may be secured by providing participants with an electronic checkbox to indicate their agreement (Saunders, Lewis, & Thornhill, 2019).

Overall, the process adhered to the ethical standards established by East European University. The ethical considerations implemented in this study are discussed in detail below.

Prior to the start of the research, ethical approval was obtained from the Ethics Committee of the East European University. Data collection began only after receiving this approval.
The participants in the study were provided with a Participant Information Sheet, which included the following detailed information:

- The aim and subject of the research;
- The voluntary nature of participation and the right to withdraw at any time without any negative consequences;
- Guarantee of data confidentiality and participant anonymity;
- The possibility of audio recording (Qualitative part of the study);
- Assurance of data protection and compliance with ethical research standards;
- The potential benefits of the research, both for the participants themselves and for the broader educational system.

In addition, participants in the qualitative research signed a Consent Form, thereby indicating their agreement to take part in the study. In the case of the online survey, where participants completed the questionnaire electronically, consent was obtained through the appropriate checkbox selection.
Participants were made aware that taking part in the study was entirely voluntary. They were explicitly informed that they could discontinue their involvement at any stage, without any negative repercussions. This information was shared at the outset of the study, and participants were encouraged to ask questions about their rights throughout the research process.
Prior to the recordings, participants in the in-depth interviews had been informed that their participation would be documented. Verbal consent was secured from each participant before the recording began, ensuring that they were fully aware of and had agreed to being recorded.
To maintain participants' anonymity during the recordings, participants were assigned code numbers to ensure that their identities were not disclosed during the interviews. After transcription, all personal identifiers, including names, locations, and any other identifying information, were removed from the transcripts.
All personal data collected during the study were securely stored in accordance with the data protection requirements established by the Government of Georgia. All electronic files, including audio recordings and transcripts, were kept on a password-protected computer and backed up on an encrypted external hard drive accessible only to the researcher. Any

printed documents were stored in a locked cabinet in a secure location, accessible only to the principal investigator. Only authorized personnel involved in the research had access to the data. The data were retained only for the duration necessary to complete the research and reporting process. After the study was concluded, all personal data were permanently deleted.

Overall, all stages of the research were guided by ethical principles, ensuring the reliability of the data, the researcher's professional responsibility, and the protection of participants' dignity (Babin, Carr, Griffin, & Quinlan, 2015; Saunders, Lewis, & Thornhill, 2019).

### *1.7 Definitions of terms*

**Student-Centred Learning (SCL)**

A pedagogical approach that shifts the focus of instruction from the teacher to the student, prioritizing active student participation, individualization of learning paths, learner autonomy, and the development of competences over mere knowledge transmission (Kaput, 2018; Wulf, 2017; Schweisfurth & Elliott, 2019).

**Academic Self-Efficacy**

The individual's belief in his or her own ability to successfully organize, execute, and achieve desired academic goals and tasks (Bandura, 1993; Bandura, 1977; Salomon, 1984)

**Individual (Transversal) Competencies**

Transferable competencies – including problem-solving, communication skills, creativity, teamwork, critical thinking – that enable effective performance across diverse professional and life contexts (Whittemore, 2018; Balcar, Janickova, & Filipova, 2014).

**Career Success**

An individual's personal evaluation of his or her career progression, encompassing perceived achievement, job satisfaction, work–life balance, and overall professional fulfilment (Wigfield & Eccles, 2000; Xin, Zhou, Li, & Tang, 2020; Mirvis & Hall, 1994; Dries, Pepermans, & Carlier, 2008; Judge, Cable, Boudreau, & Bretz, 1995).

# CHAPTER 2 REVIEW OF RELATED LITERATURE

## *2.1 Student-Centered Learning (SCL)*

### *2.1.1 Student-Centered Learning: Definition*

The determination of the ideal educational philosophy is a contentious matter that frequently takes the shape of a struggle between the two most common teaching philosophies: the Teacher-Centered Approach and the Student-Centered Approach. The primary source of knowledge, according to the first strategy, is the teacher. In order to understand content, the student is expected to adhere to the teacher's directions and information (Sablonnière, Taylor, & Sadykova, 2009). In a Teacher-Centered approach, students focus exclusively on the instructor, who dominates classroom activities. Within this model, the teacher serves as the primary — and often sole — source of knowledge, while students take on a more passive role in the learning process (Kumar M. K., 2016). The second strategy contends that education should be based on the needs and skills of the student. Instead of imparting knowledge, the teacher's job is that of a facilitator in the learning process. Students can concentrate solely on their education thanks to the SCL (Sablonnière, Taylor, & Sadykova, 2009).

The Learner-Centered (or Student-Centered) Approach shifts the focus of teaching from the teacher to the students, promoting autonomy and independence. In this model, learning is active: students must engage in discussion, write, connect new knowledge to prior understanding, and apply it in daily life, integrating learning with their own experiences (Kumar M. K., 2016). Fundamentally, SCL moves away from a standardized approach toward a more individualized, student-centered model. Although there is no universal definition or rigid program for its implementation, the approach emphasizes tailoring instruction to each student’s specific needs, goals, and interests, often incorporating their input (Kaput, 2018).

In today’s knowledge-based society, where expert information rapidly becomes outdated, it is increasingly important for universities to equip students with skills for independent learning and navigating uncertainty. This shift highlights the need to prioritize the development of key competencies over the mere transmission of content. Teaching strategies that foster a SCL culture, such as inquiry-based learning, are particularly effective in cultivating essential skills like self-directed learning (Wulf, 2017).

Understanding SCL requires a fundamental understanding of the constructivist approach. According to constructivist theories of effectiveness, learning is more effective when students are actively involved and in charge of what and how they learn. (Schweisfurth & Elliott, 2019). It can be said that SCL cultures are based on constructivist findings, taking into account the activity of learners in the process of knowledge acquisition; emphasizing self-regulated and autonomous learning processes that occur in social interaction; taking into account social, emotional, and motivational aspects of the learning process in addition to cognitive factors; responsive to varying prior knowledge and experiences; and involving an active participation of students (Wulf, 2017).

The role of the instructor alters when instruction is learner-centered. Teachers that put their students first are no longer the top performers. They are educators who also create learning experiences (Weimer, 2002). In traditional teaching, educators primarily introduce new material, guide students, and monitor their progress, keeping learners in a relatively passive role. In contrast, a Student-Centered Learning environment gives students an active role, encouraging them to take responsibility for their own learning and development within a community of learners and educators, emphasizing independent and self-directed learning (Wulf, 2017).

Lea et.al (2003), in their review of research on SCL, identify several core principles that characterize this approach (Lea, Stephenson, & Troy, 2003): These include an emphasis on active rather than passive learning, a focus on in-depth knowledge and understanding, increased student accountability and responsibility, greater learner autonomy, interdependence between instructors and students, and mutual respect between students and teachers.

### *2.1.2 What impact does SCL have on learning outcomes?*

Although various SCL methods, such as goal-setting and project-based learning, have been studied, comprehensive research on the approach remains limited. Nevertheless, the existing studies have produced promising results (Kaput, 2018).

In this chapter, some studies are briefly presented whose results show that SCL strategies have a positive impact on student achievement. But first it is interesting to see what students think about this approach. University students' opinions regarding SCL were examined by Lea and colleagues (2003). The complimentary techniques of collecting and analyzing

qualitative and quantitative data were used in two investigations. Focus groups were used in the first study while an online survey was used in the second (Lea, Stephenson, & Troy, 2003).

The investigations showed that, generally speaking, pupils had a favorable opinion of SCL. Even though most students in the focus group study said they didn't understand the notion, they spoke extensively about what they thought it might represent. Students described a continuum of learning and teaching as well as essential components of the process. Students' views about the goal and efficiency of such an approach, as well as support for the definitions of SCL developed in the focus groups, were subsequently examined more broadly in the quantitative study. A student-centered strategy was proven to have advantageous effects on learning in this situation as well. Students' worries about educators striking a balance between an approach that was too teacher-driven on the one hand and unduly student-centered on the other were one of the key difficulties that emerged from the research. Students believed more student-centered methods of instruction to be more effective and motivating than traditional didactic models. However, they raised concern about a strategy that, in the name of being student-centered, lacked direction, structure, and support (Lea, Stephenson, & Troy, 2003).

In 2008, a notable study on SCL was conducted in Turkey, which illustrates the effectiveness of the approach. The goal of the study was to ascertain how student achievement was affected by student-centered training methods (Gelişli, 2009). In this research, an experimental design with a "pretest – post-test control group" was used. There were students in the test group (n=30) and control group (n=30) who were determined out of the groups randomly (Gelişli, 2009). Individual presentations, group exercises that made the students participate, discussions, and PowerPoint presentations helped to enhance the student-centered course. In the comparison group, courses involved teacher presentations. It was discovered that when student-centered strategies were used, student engagement in learning and teaching processes was much higher than it was in the teacher-centered group (Gelişli, 2009).

Also, the results of recent studies indicate the effectiveness of SCL. For example, Kassem (2019) demonstrated the impact of student-centered instruction on students’ knowledge levels. According to the researcher, switching to student-centered instruction can boost

performance. Shaqra University's two English classrooms took part in the study. Over the course of a school year, the treatment class was instructed using student-centered methods. The identical courses were given to the control group using traditional teacher-centered methods. In all affective variables, the treated class outperformed the control class, according to analysis of the independent sample t-test (Kassem, 2019). According to Kassem, student-centered instruction improved students' integrative motivation, attitudes, self-efficacy, autonomy, and beliefs about (language) learning, according to the study's findings. Additionally, it eased pupils' anxiousness. It makes sense that independent learners would exhibit greater motivation, better attitudes, and higher levels of self-efficacy than those who rely solely on their teachers. When they actively participate in various learning activity formats, such as in pairs, small groups, and individually, students with debilitating anxiety can eventually overcome their fear and increase their self-efficacy. Students who succeed in their academic endeavors feel less anxious and have better self-efficacious beliefs in their talents (Kassem, 2019).

Also, the results of the study by Gordon et.al clearly showed how active learning methods increase student engagement (Gordon, Bolwell, Raney, & Zepke, 2022). The 103 fourth-year veterinary students at Massey University were divided into two groups at random, each consisting of 51 and 52 individuals. During a one-hour lecture period, the group of 51 students received a conventional didactic teacher-centered lecture. Using the student-centered active learning method, the teacher presented the same subject to the group of 52 students for a second hour of lectures (Gordon, Bolwell, Raney, & Zepke, 2022). The problem-solving and communication skills of the students in the active learning class were said to have improved as a result of the learning activity. They contributed actively to the learning process (Gordon, Bolwell, Raney, & Zepke, 2022). The students that participated in the active learning episode seemed to value the group work since they noted that their peers frequently assisted them in understanding complex ideas through group discussion. These students claimed that there would not have been as much chance for student-to-student interaction if they had merely been passive listeners in the regular lecture (Gordon, Bolwell, Raney, & Zepke, 2022). However, it was heartening to see that many students felt more confident after the active learning session and that they found the group exercise to be less daunting than having to respond to questions in front of the entire class (Gordon, Bolwell, Raney, & Zepke, 2022).

### *2.1.3 Challenges of a Student-Centered Learning culture*

In his study, Kumar (2016) focused on the challenges of implementing student-centered strategies in classrooms. Lack of interest and confidence, lack of instructor and student interest, class size, and pupils' unease when working with others were the problems. Additionally, it was discovered from the analysis of teachers' interviews that pupils struggle with discipline while using different student-centered teaching strategies and lack the ability to convey their ideas clearly in English (Kumar M. K., 2016).

In conclusion, he claims that school administrators should encourage student-centered management and give their teachers training and skills so that both teachers and their pupils can achieve better results. Teachers must utilize tailored, student-centered classroom management strategies since classrooms are diverse and contain students with a wide range of learning needs and learning styles. The needs of individual students cannot be met by teacher-centered classroom management techniques like deploying classroom-wide behavior management systems or adhering to programmed teachings (Kumar M. K., 2016).

Learner-centered education has generally been criticized as a "Western" pedagogy unsuited for cultural contexts where cultural relationships norms and epistemological beliefs about what should be learned and how do not line up with its democratic foundations and constructivist understandings of the nature of knowledge (Schweisfurth & Elliott, 2019).. Teachers and students in Western nations have been exposed to both the teacher-centered and student-centered approaches through public discussions as well as practical classroom experiences. For instance, the United States, Canada, and the European Union invest a sizable amount of money in promoting a student-centered approach at all educational levels. The term student-centered approach refers to a broad range of methodologies that have been created. cooperative learning, student-centered instruction, and hands-on learning are some of these (Sablonnière, Taylor, & Sadykova, 2009).

In Central Asia, the discussion about whether education should be teacher-centered or student-centered differs significantly from that in Western contexts. This is largely because the student-centered model is relatively new to the region, and teachers and students have only recently begun to engage with the contrast between the two approaches (Sablonnière, Taylor, & Sadykova, 2009). These debates are occurring against a backdrop of rapid political, economic, and social transformation that has profoundly affected educational

systems in the region. As a result, questions concerning what should be taught and how it should be taught become particularly significant. In societies undergoing such rapid change, the choice between teacher-centered and student-centered approaches is not merely a pedagogical matter, but one that carries broader implications for long-term cultural and societal development (Sablonnière, Taylor, & Sadykova, 2009).

During the Soviet era, Central Asia adopted an educational model that was predominantly teacher-centered. Today, this traditional Soviet-based system is being challenged due to increased exposure to Western educational ideas and the growing promotion of student-centered approaches. The expansion of non-governmental organizations (NGOs), along with the involvement of foreign educators and institutions in the region, has prompted discussions about the potential benefits of shifting from a teacher-centered to a more student-centered model (Sablonnière, Taylor, & Sadykova, 2009).

Numerous research point to a good impact in terms of fostering in-depth learning strategies, self-motivation, and student diversity. However, in recent years, SCL strategies have come under scrutiny because it appears that not all students would benefit equally from them, they place heavy demands on teachers and structural elements, and the research on the expected benefits is inconsistent (Wulf, 2017).

Clearly defining the goals of autonomy and self-directed learning is essential in supporting students' roles within a student-centered model. Because SCL formats are often perceived as more complex, the aims and didactic structure of this shift must be communicated transparently in order to avoid negative attitudes that may hinder deep learning (Wulf, 2017). To address differences in prior knowledge, optional supplementary courses linked to specific modules and learning outcomes may still be required. Furthermore, expectations for independent study should be explained at the beginning of the course; otherwise, students may engage in only minimal self-study, which limits deeper understanding and encourages surface-level learning strategies (Wulf, 2017). Regarding educators, fostering a shift in learning culture demands strong engagement in teaching, a consistent student-centered approach, and advanced pedagogical and technical skills. Student-centered learning requires significantly more preparation and supervision, while involving less direct classroom time, and this must be considered when determining teaching workloads. Current workload calculation models, which are based on the number of courses taught,

reflect a teacher-centered paradigm and do not account for the varying levels of effort required by different learning formats or by an SCL culture more broadly (Wulf, 2017).

### *2.1.4 Conclusion*

In this chapter, a more comprehensive examination of the SCL approach has been presented. SCL represents a significant shift in educational philosophy, moving away from traditional teacher-centered methods toward approaches that prioritize learner autonomy, engagement, and active participation. The research reviewed in this chapter demonstrates that SCL can positively influence academic achievement, motivation, self-efficacy, and critical thinking skills, particularly when students are actively involved in collaborative and reflective learning activities. Empirical studies from various contexts indicate that SCL enhances student engagement, fosters deeper learning, and supports the development of essential 21st-century competencies.

Despite its benefits, the implementation of SCL is not without challenges. Cultural and institutional contexts—such as those in Central Asia—can influence how effectively SCL strategies are adopted. This highlights the importance of tailoring SCL approaches to local conditions.

While not universally applicable, SCL provides an effective framework for promoting meaningful, student-centered learning. Its successful implementation requires careful planning, clear communication of learning goals, and ongoing support for both students and educators. When applied thoughtfully, SCL has the potential to enhance learning outcomes, promote independent and self-directed learning, and prepare students to navigate the complexities of knowledge-based societies.

## ***2.2. Theoretical framework***

### *2.2.1 Constructivism approach*

One significant limitation of education is that students must actively develop knowledge in their own brains, professors cannot simply transmit knowledge to them. In other words, they gather and modify information, compare new and old data, and update rules when they are no longer applicable. The learner is viewed as an active agent in the process of acquiring knowledge in the constructivist perspective on education (Bada & Olusegun, 2015). As a result, understanding SCL requires a fundamental knowledge of the constructivist approach. As mentioned above, Constructivist theories suggest that learning becomes more

effective when students take an active role in the process and have control over both the content and the methods of their learning (Schweisfurth & Elliott, 2019).

Education in mathematics and science is dominated by constructivism, which has been variously described as a philosophy, an epistemology, a cognitive perspective, or a pedagogical approach. Its fundamental tenet is that all knowledge is created/ constructed; it does not come from passive reception. This foundational idea is shared by all constructivist schools and forms, as well as by cognitive psychology. Today, few academics would disagree that people actively create their own knowledge (Noddings, 1998 ). Constructivism is one of the key concepts in education. It has huge effects on how educators educate students and train new instructors. Constructivism, as already mentioned, is a learning theory that can also be found in psychology, that describes how individuals may learn and acquire knowledge. As a result, it directly relates to education. According to the thesis, people derive knowledge and meaning from their experiences (Bada & Olusegun, 2015).

The straightforward concept of produced knowledge is surrounded by two significant ideas. The first is that students build new understandings on top of what they currently comprehend. There is no blank slate upon which new information can be inscribed. Instead, prior information influences the new or modified knowledge that learners will generate from new learning experiences (Phillips, 1995). The second idea is that learning is not passive but active. The new learning environment forces learners to challenge their understanding in light of what they find there. If what students experience conflicts with what they already know, their understanding may adapt to take into account the new information. Students remain engaged throughout this process by applying their current understandings, noting pertinent details in new learning situations, evaluating the consistency of prior knowledge and newly acquired knowledge, and making modifications to their knowledge depending on their evaluation (Phillips, 1995).

Bada and Olusegun (2015) describe benefits of Constructivism (Bada & Olusegun, 2015):

Bada and Olusegun (2015) describe benefits of Constructivism (Bada & Olusegun, 2015):

Constructivist learning encourages students to actively participate in the learning process rather than passively receive information. It promotes critical thinking and deeper understanding instead of simple memorization, allowing knowledge to be applied across different contexts. Students gain ownership over their learning through questioning, exploration, and involvement in assessment, which fosters motivation, creativity, and

stronger retention. Additionally, constructivism supports the development of communication and collaboration skills, as learners work together, share ideas, and negotiate meaning—preparing them to engage effectively in real-world situations (Bada & Olusegun, 2015).

A significant portion of the literature on the definitions of "constructivist teachers" is summarized by Brooks and Brooks (1993). A constructivist teacher, in their minds, is someone who will support and accept student initiative and autonomy, encourage students to communicate with one another and the teacher, allow pupils to build relationships and develop metaphors (Brooks & Brooks, 1993).

In conclusion, it can be claimed that the constructivist framework for learning theory encompasses a variety of viewpoints. Each of these viewpoints is based on the idea that people actively create knowledge from their experiences. As a result, information cannot simply be transferred from one learner to another; rather, it must be created by each learner on their own. Reflective practice, self-directed learning, and experiential learning are a few examples of constructivist learning. These instructional techniques clearly demonstrate that the emphasis is entirely on the student's development of knowledge within a social environment (McLeod, 2003).

### *2.2.2 Historical roots of Constructivism*

**John Dewey**

Constructivism learning theory is grounded in both philosophy and psychology and offers a new way of understanding education. Some trace its roots back to Socrates, whose questioning method exemplifies constructivist teaching. Later, Kant’s work also reflected constructivist ideas, arguing that individuals do not access the external world directly; instead, they interpret and construct knowledge through internal cognitive structures (Jia, 2010). In perspective of psychology, the first who contribute a lot to the development of constructivism thought and apply it to education and students' growth and learning are John Dewey, Jean Piaget, and Lev Vygotsky (Jia, 2010).

John Dewey had a profound and lasting impact on American education, particularly on progressive education. He also influenced later developmental theorists such as Jean Piaget and Lev Vygotsky. Although each of them had different perspectives, they shared Dewey’s core belief that education should nurture children’s natural development and potential, rather than impose knowledge passively (Matthew, 2003).

Constructivism and Dewey's view of knowing share many similarities (Noddings, 1998 ). His models in this area contributed to the pedagogical revolution of the previous century. Students are characterized as active learners by John Dewey. His view of students as engaged champions of their own objectives is still relevant today and widely acknowledged (Noddings, 1998 ). Dewey criticized authoritarian organizations and, as a result, conventional teaching strategies in schools because of his steadfast commitment to democracy and his confidence in the power of civil societies and education. Most importantly, Dewey thought that the kid was at the center of all of academia and that his educational philosophy and reforms were largely focused on the child. He believed in progressive education and campaigned for changes in pedagogical components of teaching and school curricula (Sikandar, 2015).

There are three areas where this excellent educator's educational thought has contributed (Sikandar, 2015):

- Education philosophies of Dewey
- Dewey's view of learning and experience
- The student's and teacher's roles

Dewey makes it abundantly obvious in Democracy and Education (1916) that the goal of teaching follows from the teaching style. Due to the pedagogical nature of teaching and learning, the topic matter should be planned wisely. The teacher should arrange and link the subject matter to the pupils, bearing in mind their needs, wants, interests, and cognitive growth, as he demonstrates in "How We Think." The subject matter alone is not a guarantee of learning and development (Sikandar, 2015).

We can perceive a strong connection between a child's life and his experiences as a continuous process in Dewey's theory of education, which he views as the purpose of education. In this approach, education has the potential to give a kid social skills. Education is pointless unless this connection is created. According to Dewey, interactivity and consistency of experiences are strongly correlated (Sikandar, 2015).

Dewey thought that an educational experience needs to be based on or connected to past experiences in order to be beneficial. There must be a continuity between experiences (Noddings, 1998 ). Teachers give meaning and purpose to these experience (Sikandar, 2015). They must therefore be aware of their students' earlier learning experiences in order

to create new learning activities that are based on them, as well as their current learning activities in order to prepare activities that will help students get a more sophisticated understanding of the subject (Noddings, 1998 ). Dewey argued that learning should be both continuous and meaningful for students in the present. He stressed the importance of active interaction between students and the subject matter. When such interaction is missing, students lose interest and confidence, and learning becomes mechanical—focused only on giving correct answers for teacher approval. This undermines the belief that education should help individuals create personal meaning. Because of his emphasis on student involvement and activity, Dewey's approach became known as child-centered education (Noddings, 1998 ).

Dewey was more concerned with a child's ability to establish their uniqueness. As curriculum, subject matter, and concepts were imposed on him in school, the child's voice was completely ignored. Dewey believed that children are the most susceptible members of society because they are directly impacted by the behaviors and viewpoints of academics, who set rules on him and exert control over him (Sikandar, 2015). According to Dewey, there is no single method of teaching that fits all learners. Learning should be planned based on students' abilities and experiences, and teachers should provide freedom for students to explore and connect ideas across different subjects. He promoted interdisciplinary learning and student choice in how they move through knowledge. Although his approach faced practical challenges—such as how to organize curriculum and assess growth—Dewey remains a major influence in modern education, shaping ongoing discussions on progressive, student-centered learning (Sikandar, 2015).

**Jean Piaget and Lev Vygotsky**

As mentioned above, Dewey, Piaget, and Vygotsky are the first thinkers who made significant contributions to the development of constructivism philosophy and applied it to education and students' growth (Jia, 2010). According to Matthew (2003), Constructivism as it relates to education is a relatively new phenomena that essentially stems from the work of Swiss developmental psychologist Jean Piaget (1973) and Russian psychologist Lev Vigotsky (1978) (Matthew, 2003). Piaget's research focused on the cognitive nature of constructive learning while Vygotsky focused on its social nature. Since their initial study, a wide range of related learning theories and pedagogical approaches have developed, including the Social Learning Theory, Situated Learning, Anchored Instruction, Authentic

Learning, Collaborative Learning, and Inquiry- and Project-based Learning (Cholewinski, 2009).

Piaget's constructivism, influenced by Kant, emphasizes that knowledge is built through interaction between the mind and the world. Unlike Kant, Piaget saw the mind's structure as developing gradually rather than being static from the start (Noddings, 1998 ). Piaget's cognitive constructivism emphasizes active learning. It has two key parts: a theory of development explaining how children gain cognitive skills, and stages predicting what they can understand at different ages. Learning occurs by resolving imbalance—adapting existing knowledge to incorporate new information (Amineh & Asl, 2015). Piaget's constructivism views learning as discovery. Children gradually build understanding through active participation, absorbing and sometimes revising concepts, rather than passively receiving knowledge (Amineh & Asl, 2015).

Piaget's epistemology links the growth of knowledge with individual development. It is constructivist, asserting that all knowledge is actively constructed, not innate or imagined (Noddings, 1998 ).

Does the environment of people impact learning? Is it feasible for someone to develop understanding without coming into direct contact with the environment around them while they are learning? (Liu, 2010). Challenges to Piaget's constructivism were raised both within and outside the constructivist camp. Many constructivist educators criticize Piaget's work for focusing too much on the interaction of individual children with objects. These educators point out that most of us learn more from each other than from manipulating objects directly (Noddings, 1998 ).

What has an immediate impact on students? Teachers? Participants? Friends? Administrators? In many situations, the aforementioned factors can also have a direct impact on learning. Anyone who directly interacts with the learner when they are in a learning environment might be considered in the learner's social sphere. Social constructivism was consequently introduced and Lev Vygotsky was the father of social constructivism (Liu, 2010). Vygotsky's constructivism emphasizes that learning is shaped by social interaction and culture. Children first perform tasks with social support, and over time, these functions become internalized, allowing independent use (Noddings, 1998 ).

Piaget's contribution to constructivism is criticized in a significant portion of Vygotsky's work. Piaget thought that learning came before development, but Vygotsky thought the contrary (Amineh & Asl, 2015). Vygotsky critiqued Piaget for focusing too much on internal processes. He argued that cognitive development arises from external factors—culture, history, and social interaction—and highlighted language as the most important psychological tool for regulating behavior (Amineh & Asl, 2015). Understanding where his ideas came from is not difficult. He was a Russian revolutionary growing up, and he thought socialism could save his nation. For his nation, the revolutionary social upheaval was essential. It might enhance many people's lives in a variety of ways, including their material circumstances, social connections, and educational chances (Liu, 2010).

Overall, constructivist teaching and learning approaches, primarily shaped by Piaget and Vygotsky, form the foundation of cognitive and social constructivism (Liu, 2010). Understanding these forms helps educators apply constructivist principles effectively, even if they do not fully identify as constructivists. Moreover, teachers can adopt selected strategies from constructivist theories without implementing every recommended method (Noddings, 1998 ).

### *2.2.3 Conclusion*

As mentioned at the beginning of the chapter, the topic of the proposed dissertation SCL has its historical roots in the theory of constructivism. The idea of focusing on the needs of the student comes from constructivist thinking. As shown in the chapter, the learner is not a passive recipient of knowledge but an active subject who shapes the process of receiving knowledge himself. But it is not the case that teachers play a subordinate role in this process. On the contrary, they are instructors and guides, they motivate students and give them the right direction on the path of knowledge acquisition.

Because constructivist thinking forms the core of SCL approach, this chapter has explored the theory of constructivism in greater detail. Given the strong connections between John Dewey’s work and constructivist principles, his key ideas were examined more closely. Additionally, both Jean Piaget’s individualist perspective and Lev Vygotsky’s social perspective are central to constructivist theory, which is why these two thinkers were highlighted in this chapter.

### *2.3 The dynamics of higher education in Georgia*

#### *2.3.1 Georgia's higher education system before Bologna Process*

Prior to gaining independence, Georgia's higher education system operated under the Soviet model, characterized by uniform structures and content. The organization and functioning of its institutions closely mirrored those found across other Soviet republics (Sharvashidze, 2005). Prior to the collapse of the Soviet Union, education at all levels was provided free of charge and was designed to promote communist ideology. Admission to the limited number of university seats was determined through institution-specific written and oral entrance exams (Ganzeboom & Nieuwbeerta, 1999). All higher education institutions were state-owned and fully funded by the government in pursuit of the ideal of universal equality. Throughout this period, the number of HEIs in the country remained relatively stable (Chakhaia & Bregvadze, 2018).

Until the early 1990s, Georgia had only one higher education institution officially designated as a university—Tbilisi State University—which was the country's oldest and most prestigious institution offering broad academic programmes (Chakhaia & Bregvadze, 2018). During the Soviet era, HEIs were primarily differentiated by their academic focus: while universities offered diverse academic disciplines, institutes were limited to training specialists in specific professional fields. Additionally, the geographical distribution of institutions served as another classification criterion, as the Soviet government promoted the establishment of institutes across different regions to enhance access to higher education (Chakhaia & Bregvadze, 2018). Since gaining independence in 1991, Georgia has undergone a political, economic, and social transformation, shifting from a centrally planned socialist system to a market-oriented economy (Chankseliani, 2013).

Following the dissolution of the Soviet Union, Georgia has experienced cycles of reform, periods of stagnation, and significant transformations across various policy sectors, including the field of education (Jibladze & Glonti, 2020). The evolution of Georgia's education system—especially higher education—can be characterized by two distinct stages: an initial period of post-Soviet stagnation between 1991 and 2003, followed by a phase of significant institutional reform beginning in 2003 (Jibladze & Glonti, 2020). After independence, Georgia's higher education system began reforming. Most HEIs, previously narrow-focused institutes, rebranded as universities to signal broader academic offerings,

such as the Polytechnic Institute becoming the Technical University of Georgia and Tbilisi Medical Institute becoming Tbilisi Medical University. However, this change was largely symbolic, as no official distinction between universities and institutes existed at the time (Sharvashidze, 2005) (Pachuashvili, 2009).

The shift from a socialist to a capitalist system opened the door for private actors to enter sectors that had previously been entirely state-owned, including higher education (Chankseliani, 2013). One of the most notable shifts in Georgian higher education during the 1990s was its privatisation. In addition to the establishment of private institutions operating alongside state universities, privatisation was also reflected in the introduction of tuition fees at public HEIs—a policy officially permitted by the government in 1993 (Chakhaia & Bregvadze, 2018). The growth of private higher education institutions was significant, rising from none in 1991 to 162 by the year 2000, and representing more than 30% of total student enrollment (Sharvashidze, 2005). Nevertheless, many of these institutions were short-lived, closing within one or two years. Since Georgia lacked prior experience in managing a private higher education sector, there were no established regulatory procedures for the authorization or accreditation of these new HEIs (Chakhaia & Bregvadze, 2018).

From 1996, universities shifted to a two-tier Anglo-Saxon model—four-year bachelor's and two-year master's programs—to align with Bologna standards. Initially, this change was mostly formal, simply splitting the old five-year program without altering the curriculum (Lorentzen, 2000). In 2004, extensive higher education reforms were initiated following significant changes in the Government of Georgia after the 2003 revolution. The new pro-Western administration embarked on comprehensive reforms aimed at transforming the country into a liberal democracy and fostering integration with Europe (UNDP, 2004; Westerheijden, 2008).

### *2.3.2 Georgia's higher education system after Bologna Process*

A key step toward aligning higher education with European standards was Georgia’s decision to join the Bologna Process, which was formally completed at the ministerial conference in Bergen in May 2005 (Ministry of Education and Science of Georgia (MES), 2012). This milestone triggered a transformation of the higher education system in line with Bologna guidelines. Specifically, the system was restructured into three cycles. The European Credit Transfer and Accumulation System (ECTS) was implemented, and degree

programs were revised based on ECTS standards. Accordingly, the educational levels were organized as follows: undergraduate programs (bakalavriati) require a minimum of 240 ECTS credits, graduate programs (magistratura) comprise 120 ECTS credits, and doctoral programs (doktorantura) consist of 180 ECTS credits (EACEA, 2016).

Following Georgia's accession to the Bologna Process, policymakers seized the opportunity to transfer doctoral education and training from the Academies of Science to universities. This move marked an initial effort to integrate research activities with academic teaching (Bakradze, 2013).

Quality assurance (QA) mechanisms were established as part of the reforms inspired by the Bologna Process. In 2006, the National Education Accreditation Centre (NEAC) was founded as a quasi-governmental body tasked with developing and implementing institutional accreditation for both public and private higher education institutions. At the same time, internal QA units were set up within these institutions. The introduction of external QA mechanisms quickly produced significant results, reducing the number of HEIs from 196 to 42. In 2010, the National Centre for Educational Quality Enhancement (NCEQE) was established to succeed NEAC, consolidating external quality assurance across the entire education system—including higher, vocational, and general education—under one agency (Jibladze & Glonti, 2020). The NCEQE is responsible for developing external quality assurance systems and managing the processes of authorization and accreditation. It gathers essential data about higher education institutions, such as information on students, academic staff, degree programs, and more. Additionally, the centre oversees the development of the National Qualifications Framework (NQF) (Jibladze & Glonti, 2020).

In line with the Bologna Process, Georgia developed a National Qualifications Framework (NQF) in 2010. The NQF, adopted by the Ministry of Education and Science under Decree N120/N on December 10, 2010, is aligned with the European Qualifications Framework for Lifelong Learning (LLL) and integrates qualifications across all levels of the education system. It specifies the knowledge, skills, and values that individuals must acquire to earn a certification at each educational level. To facilitate the recognition of degrees, the National Academic Recognition Information Centre (NARIC) was established within the NCEQE (Jibladze & Glonti, 2020).

Before the reforms, university entrance examinations were seen as the main source of corruption. To address this, the Unified National Admission Examinations (UNE) were introduced as a key anti-corruption measure. Previously, individual HEIs decided on student admissions, but in 2004, a semi-autonomous agency—the National Assessment and Examination Centre (NAEC)—was established to develop and administer the exams (Jibladze, 2016). The Unified National Examinations take place annually to identify the top candidates for higher education. In this system, applicants are admitted solely based on their test scores, which serve as the exclusive criterion for entry into a limited number of university spots. The government tightly regulates the number of available seats each year through institutional accreditation rules (Chankseliani, 2013). Using the results from three examinations, the NAEC assesses the performance of prospective students and issues student vouchers based on achievement levels of 100%, 70%, or 50%. Students who meet these criteria then compete for admission to both public and private higher education institutions (EACEA, 2016).

Overall, Georgia has made significant progress in reforming its higher education system over the past two decades, yet several challenges remain (Jibladze & Glonti, 2020). Bachelor's degrees often do not serve as terminal qualifications, as most graduates continue to master's programs. Holding a master's degree improves employment prospects by 70% compared to having only a bachelor's degree (EACEA, 2016). While doctoral degrees are prestigious, pursuing an academic career is not the primary path for most graduates (Jibladze & Glonti, 2020). Additionally, academic staff represents two generations with contrasting scholarly traditions: the older, Soviet-trained generation maintained a strict separation between universities and the Academy of Sciences, whereas the younger, largely internationally educated generation emphasizes research-informed teaching and the development of research universities. Collaboration between these groups has gradually improved, yet the interplay between them continues to shape university dynamics (Jibladze & Glonti, 2020).

## *2.4. Conceptual Framework*

### *2.4.1 Institutional conditions for SCL*

#### *2.4.1.1 Institutional environment necessary for SCL*

Although the SCL approach is mainly a pedagogical task for individual instructors to implement within their classrooms, adopting SCL across the entire institution demands

structured coordination, steady efforts, and clear communication (Attard, Ioio, Geven, & Santa, 2010). Therefore, as highlighted by Kember (2009) in his study on advancing SCL across universities, fostering a cultural shift towards the SCL approach must occur at every level and sector within a higher education institution (Kember, 2009).

The National Center for Educational Quality Enhancement of Georgia highlights the importance of sufficient material and informational resources for creating a student-centered learning environment. Universities must have adequate facilities, equipment, and modern information resources that support educational needs and ensure achievement of program learning outcomes (National Center for Educational Quality Enhancement (NCEQE), 2018; National Center for Educational Quality Enhancement (NCEQE), 2022).

The role of the institutional setting is crucial in promoting SCL, as it guarantees that essential resources and services are both available and efficiently utilized. According to Arko-Cobbah (2004), it is important to create an environment that supports learners and aids them in building their own knowledge (Arko-Cobbah, 2004). This setting includes a range of media types such as digital, printed, and multimedia resources (Arko-Cobbah, 2004). He also highlights the crucial role of Information and Communication Technology (ICT) as a key element in the educational process, especially within the framework of SCL. Technology is essential both in and out of the classroom, helping educators design interactive learning experiences and supporting students' educational development. It enables learners to obtain information and fosters critical thinking at a pace and time that suits them (Arko-Cobbah, 2004). In the literature, the emphasis on technology's role in enhancing SCL primarily concerns its application in out-of-classroom settings. While SCL can manifest in various practical ways within the classroom—both with and without modern technologies—the consistent and sustained implementation of SCL beyond the classroom largely depends on the integration of these technologies (Attard, Ioio, Geven, & Santa, 2010). In their 2019 study, Muianga et.al. (2019) examined whether professional development participation affects the incorporation of ICT in SCL. Educators using ICT believe it plays a crucial role in improving student outcomes and the quality of educational offerings. They also recognize that ICT significantly affects the daily lives of both instructors and students and appreciate its importance in delivering their subject matter (Muianga, Barbutiu, & Hansson, 2019).

To improve the impact of teachers' professional development, it is vital to integrate three main knowledge areas: Content, Pedagogy, and Technology. Particularly, pedagogical and technological knowledge play a critical role in creating training programs that harness the transformative capabilities of information and communication technologies (ICT) for the shift toward SCL. The combined understanding of Technological Pedagogical Content Knowledge (TPACK) is essential for educators to comprehend the teaching implications and to realize the benefits of applying ICT and SCL in their classrooms (Muianga, Barbutiu, & Hansson, 2019). More broadly, it is essential that educators, librarians, and all personnel involved in students' learning environments effectively utilize and harness modern technologies. This involves developing varied learning contexts and opportunities that enhance information accessibility and promote active student interaction (Attard, Ioio, Geven, & Santa, 2010). Stoffle and Cuillier (2010) found that integrating the use of technology into the overall SCL framework leads to higher student retention rates at the university. This suggests that students view the SCL approach as more meaningful and beneficial (Stoffle & Cuillier, 2010).

The points outlined above underscore the crucial role that libraries play in supporting SCL, acting as central hubs for the storage, retrieval, and dissemination of information. In this context, much of the reviewed literature challenges the traditional perception of libraries as places where students can only access physical materials on-site (Attard, Ioio, Geven, & Santa, 2010). Arko-Cobbah outlines the essential functions of libraries and librarians, highlighting their pivotal role in supporting SCL through four key domains (Arko-Cobbah, 2004): *Delivering Access to Information Resources:* In this context, the traditional functions of libraries—such as selecting, organizing, storing, and retrieving information—become increasingly significant, especially as there is a growing demand to provide access to these resources beyond the physical campus (Arko-Cobbah, 2004, S. 268). The shifting dynamics of higher education, the rise of student-centered approaches, and the integration of innovative teaching and learning methods have made it essential to rethink and redefine the roles and functions of librarians (Virkus & Metsar, 2004). This aligns closely with Arko-Cobbah's discussion on *Fostering Partnerships and Collaboration*, identified as a second critical area. He emphasizes the need for librarians to build strong working relationships across different units within a higher education institution (HEI). This includes collaboration with faculty involved in curriculum development and with IT staff who manage technological infrastructure. Librarians are expected to support educators by

helping them integrate technology into their teaching in creative and effective ways, advising on appropriate digital tools, and working collectively with the academic community to create, implement, and refine a technology strategy grounded in SCL principles (Arko-Cobbah, 2004). The third key area involves *enhancing students' information literacy in collaboration with teaching staff.* To prepare students to effectively recognize their information needs, locate relevant sources for problem-solving, and critically assess, organize, and apply information, librarians must be adept at supporting diverse learner needs and proficient in using technology. Such expertise is crucial to ensuring equal and inclusive access to information for all students (Arko-Cobbah, 2004). The fourth key area, *Developing Outreach Programmes,* focuses on addressing the varied needs of both students and faculty by creating channels for accessing information outside the traditional library space. This approach ensures that resources are easily accessible and responsive to different academic and learning needs (Arko-Cobbah, 2004).

While Arko-Cobbah's research is not recent, its findings remain highly relevant. They underscore the critical role that libraries continue to play in SCL, functioning as central platforms for the storage, access, and dissemination of information (Attard, Ioio, Geven, & Santa, 2010).

#### *2.4.1.2 The Role of student services in the success of SCL*

In addition to the aspects described above, which include material, informational, and library resources, it is important to also consider the presence of student advisory and support services when discussing the institutional conditions necessary for SCL. Since these services are crucial for creating a student-centered environment, separate standards are dedicated to them within the authorization and accreditation frameworks — in the authorization standards, this corresponds to the fifth standard, while in the accreditation standards, it is the third standard (National Center for Educational Quality Enhancement (NCEQE), 2022; National Center for Educational Quality Enhancement (NCEQE), 2018).

The standards require that students receive appropriate consultation regarding study planning, improvement of academic achievements, and employment, as well as support for career development. University staff, including those involved in the program and/or structural units of the institution, are obligated to provide students with information about the available consultation services and support opportunities within the university. The

standards also require the university to ensure the integration of both local and international students into the internal university environment. Within the program, students should have the opportunity to actively participate in local and international projects, events, performing and creative activities, conferences, and research appropriate to their level of study, as well as to take advantage of international mobility opportunities. Students must be fully informed about various local and international projects and activities that correspond to their educational and research goals. The standards require academic, scientific, invited, administrative, and other personnel to provide consultations to students regarding both the study process and various activities planned within the program (National Center for Educational Quality Enhancement (NCEQE), 2022; National Center for Educational Quality Enhancement (NCEQE), 2018). In authorization and accreditation processes, student employment is also viewed as one of the key elements of university quality assurance. Universities must establish effective mechanisms to enhance students' employability through cooperation with employers, internships, and practical training. They are also expected to organize career events and monitor employment outcomes to align education with labor market needs, thereby improving students' professional development and competitiveness (National Center for Educational Quality Enhancement (NCEQE), 2022; National Center for Educational Quality Enhancement (NCEQE), 2018).

Rott (2006) outlined key points regarding student services that are essential for effectively supporting a SCL approach. According to him, these services should cover a broad range of student needs (Rott, 2006), and include the following main areas: Universities should develop comprehensive support services that address students' educational, psychological, and career development needs by effectively using internal and external resources. Dedicated staff should be assigned to assist students in personal, academic, and career planning, ensuring effective coordination across faculties. Mechanisms for collecting feedback and involving students in service improvement should be established to strengthen quality assurance. Counselling and advisory staff must uphold high professional standards, actively contributing to an inclusive and supportive academic environment (Rott, 2006).

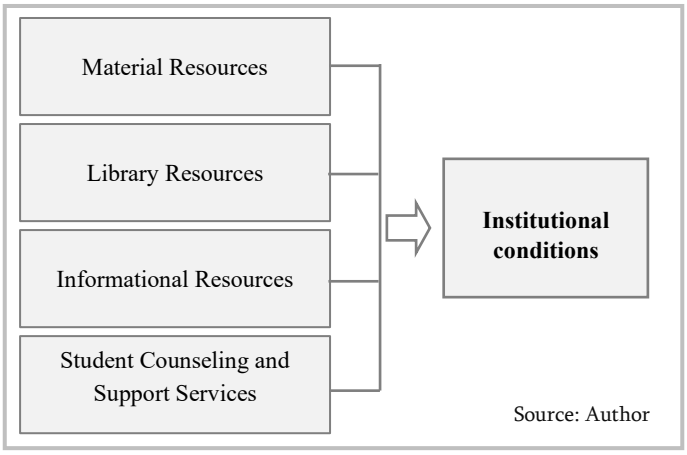
#### *2.4.1.3 Conclusion*

In conclusion, the analysis of the institutional conditions necessary for implementing SCL clearly indicates that creating an enabling environment is crucial for the effectiveness of

this pedagogical approach. As the literature consistently highlights, the core institutional components of a truly student-centered environment include adequate material infrastructure, informational and library resources, as well as comprehensive student support and counselling services.

These four pillars serve not merely as supplementary elements, but as fundamental enablers of SCL. Without access to modern learning facilities, diverse information sources, and continuous academic, psychological, and career-related guidance, students are less likely to engage actively and take ownership of their learning process — a key tenet of SCL. All of this is visually presented in Figure 1.

*Figure 1: Institutional Conditions necessary for SCL*




### *2.4.2 Innovative teaching*

#### *2.4.2.1 The role of teachers in SCL*

Recently, teaching has shifted from a teacher-centered to a student-centered approach. Student-centered pedagogy, based on constructivist and democratic principles, emphasizes learning through students' experiences, promoting reflection, critical thinking, and responsibility. In contrast, teacher-centered instruction, grounded in behaviorism, positions the teacher as the main authority and source of knowledge, with students playing a passive role and having limited opportunities for independent thinking and problem-solving (Serin, 2018). In SCL, the responsibilities of students and teachers are deeply linked. According to Abel et al. (2009), as the approach shifts away from being teacher-focused, educators take on a role similar to that of a "coach," guiding learners through their educational journey and encouraging a spirit of teamwork and partnership. In this model, teachers reduce reliance on formal lectures and engage more actively with students, creating a collaborative

environment where responsibility for learning is shared (Abel & Campbell, 2009). Abel et al. (2009) emphasize the importance of an assessment process that embodies the collaborative nature of the teacher-student relationship and promotes shared learning. They suggest that students tend to focus their efforts on what they expect to be assessed, making their involvement in the evaluation process crucial for increasing their engagement and responsibility in learning. By actively participating and understanding the evaluation criteria, students gain a stronger sense of ownership and control over their educational progress (Abel & Campbell, 2009). In this context, motivation plays a key role in adopting and sustaining new learning methods. Both teachers and students must stay committed, while teachers' active engagement with students significantly enhances and maintains learners' motivation (Attard, Ioio, Geven, & Santa, 2010).

Maclellan (2008) offers an in-depth analysis of student motivation from a psychological perspective, highlighting the need to include elements like goal orientation, willpower, interest, and causal explanations in educational methods. Maclellan argues that to successfully foster advanced cognitive skills through SCL, these motivational components must be thoughtfully integrated into both teaching and learning activities (Maclellan, 2008). According to Maclellan, excessive explanation or overuse of examples by teachers can reduce students' motivation for independent and critical thinking. Conversely, providing too little guidance or unclear evaluation criteria leaves students uncertain about what and how to learn, making the approach ineffective and unsatisfactory for formal higher education (Maclellan, 2008). Maclellan's research emphasizes that effective student engagement depends on tutors' active involvement—asking challenging questions, guiding students to express their reasoning, and encouraging reflection on difficulties. At the same time, tutors should remain sensitive, confident in allowing students to manage their own motivation, and adept at resolving misunderstandings. Without this balance, support may fail to meet students' expectations, leading to negative reactions and interactions in the learning process (Maclellan, 2008). This demonstrates that the teacher's role in SCL is both crucial and challenging. It requires ongoing dedication to creating a classroom atmosphere grounded in trust, promoting collaborative learning, enabling genuine learning experiences, and applying assessments that meaningfully emphasize the learning journey (Attard, Ioio, Geven, & Santa, 2010).

SCL is a teaching approach that emphasizes students' active involvement while keeping teachers engaged. Teachers design lessons considering students' needs, create supportive learning environments, incorporate feedback, and encourage learners to take responsibility for their own progress (Thamraksa, 2003). In a student-centered approach, the teacher acts as a facilitator, mentor, and guide, moving beyond the traditional role of just delivering information (Weimer, 2002). The core of SCL is the teacher's role in fostering an environment where students feel welcomed, appreciate the learning journey, and take ownership of their education. This approach is collaborative and supportive, acknowledging the vital contributions of both students and teachers in creating an effective learning experience (Thamraksa, 2003). In a student-centered classroom, students don't develop their understanding entirely independently; instead, teachers actively assist them in constructing their knowledge (Serin, 2018).

A student-centered classroom does not mean giving students complete control over their learning. Instead, it emphasizes both shared and individual student needs and promotes active participation. The teacher acts as a facilitator, guiding, supporting, and mentoring students, organizing learning tasks, and helping them take responsibility for their own educational progress (Jones, 2007, S. 2). Being a teacher means supporting individuals in their learning endeavors, and in a student-centered classroom, the teacher becomes a member of the class, actively participating in the learning process alongside the students. During a whole-class activity, there is a dynamic interaction between students and the teacher, where students acknowledge and respect the authority of the teacher as their supervisor or leader (Jones, 2007). In his book The Student-Centered Classroom (2007), Leo Jones sums up the role of teachers well: *"Students can't be "taught" – they can only be helped to learn. In a student-centered classroom, our role is to help and encourage students to develop their skills, but without relinquishing our more traditional role as a source of information, advice, and knowledge"* (Jones, 2007).

Although student-centered approaches are increasingly popular, teachers remain essential for effective learning. They create environments that foster engagement and support academic success. While this approach promotes collaboration, problem-solving, decision-making, and critical thinking, the teacher's role is not eliminated (Serin, 2018).

In *Learner-Centered Teaching* (2002), Maryellen Weimer explains that learner-centered teachers guide students to take ownership of their learning. They increase student-led tasks

such as summarizing and analyzing material, reduce direct instruction while asking thought-provoking questions, and design in-class activities that develop cognitive skills. Teachers model expert thinking by sharing their own learning processes, promote collaborative learning among students, collaborate with them to create supportive learning environments, and use evaluation methods, including peer feedback, to enhance learning (Weimer, 2002).

#### *2.4.2.2. The role of the student in SCL*

In his article *Teaching Learners To Be Self-Directed* describes Grow (1991) four developmental stages that young adults undergo as they progress towards achieving independence. According to him, students' capacity to engage effectively in learner-centered teaching can be observed through these four distinct stages (Grow, 1991): In Stage 1, students are dependent, relying on explicit instructions and coaching from teachers to know what to do, how, and when. In Stage 2, students show moderate self-direction and interest; teachers inspire them with enthusiasm and motivation, helping them set goals and discover intrinsic motivation. Stage 3 involves active engagement and intermediate self-direction, where students take part in their learning, adapt strategies to their needs, collaborate with peers, and gradually gain autonomy as teachers act as facilitators. In Stage 4, students achieve full self-direction, setting their own goals and standards. Teachers act as consultants, offering guidance only when needed and empowering students to tackle challenges independently (Grow, 1991).

Grow's stages offer a valuable conceptual framework that aids in developing a broad comprehension of how students evolve and mature in their learning journey (Weimer, 2002). The effectiveness of students' engagement in SCL can be discerned as they progress through these four distinct stages (Grow, 1991).

In a student-centered classroom, students are not constantly reliant on their teacher for instructions, validation, corrections, guidance, or praise. Instead, they actively engage with one another, valuing each other's input, collaborating, learning from each other, and providing support (Jones, 2007). They cultivate a sense of interdependence, working together in pairs, groups, and as a whole class. While they may seek assistance or advice from the teacher when faced with challenges or uncertainty, they first attempt to solve problems independently or through peer collaboration. The teacher plays a supportive role

in helping students develop their skills (Jones, 2007). Students are given a far more active role in a SCL atmosphere. Students actively contribute to the development of their learning process and take responsibility for their own academic growth as members of a community of learners and educators (Wulf, 2017). It means, that the students are encouraged to take on leadership roles and become active participants in their own learning. The Role of student is the responsibility for learning (Saulnier, 2009).

#### *2.4.2.3 Use of technology in teaching and learning*

In early 2000s, Butzin (2001) and Cooper & Brna (2002) found that integrating technology into the curriculum led to significantly increased student engagement over extended periods, enhanced academic performance, and a noticeable reduction in behavioral issues within the classroom (Butzin, 2001; Cooper & Brna, 2002). Research indicates that integrating technology into student-centered classrooms can enhance academic outcomes, foster learner autonomy, and develop key 21st-century skills such as creativity, digital literacy, innovation, and communication. These benefits boost student motivation and self-confidence. However, challenges exist, including limited access to resources, gaps in digital skills, and resistance from both teachers and students (Singh, 2011).

Information technologies support effective student-centered learning by fostering intellectual engagement and higher-order thinking skills. They enable students to explore concepts, ask questions, share knowledge, and collaborate with peers, promoting flexibility and personal growth. When integrated thoughtfully, technology enhances creativity, teamwork, and critical thinking, while also supporting teachers' professional development, efficiency, and communication (Samaranayake, 2022). The advantages of integrating technology into classroom instruction have been also highlighted by NCREL (2003). Technology facilitates the shift from traditional teacher-led instruction to student-centered learning by giving students more control over content, promoting collaboration, and providing diverse ways to access information. Interactive software and digital tools engage students cognitively and physically through problem-based tasks, deepening understanding, developing higher-order thinking, and connecting learning to real-life contexts. For example, digital books transform reading into an interactive, motivating experience. Online technologies support experiential and self-directed learning, allowing students to experiment, receive feedback, refine thinking, construct knowledge, and reflect—key processes for meaningful learning (NCREL, 2003).

According to Singh (2011), various technological tools can enhance student-centered learning. Online platforms enable report sharing, discussions, and database access, promoting engagement and collaboration. Electronic archives and talking books support diverse learning styles and individualized learning. Interactive whiteboards and digital coursework allow real-time content interaction, making lessons more dynamic. Collaborative and independent projects using email, videoconferencing, websites, and digital media develop research, creativity, and teamwork skills. Tools like Voice Recording Systems support reflection, verbal practice, and self-assessment, while project-based and game-based learning offer meaningful, enjoyable, and real-world-aligned learning experiences (Singh, 2011).

The integration of information and communication technologies (ICT) into higher education is regarded as both a teaching-related challenge and a valuable opportunity to enhance the learning process (Carr, 2010). Technology-enriched settings foster both personal reflection and shared knowledge construction, making them essential in transforming educational methods and instructional strategies (Häkkinen & Hämäläinen, 2012; Roschelle, 2013). Research shows that teacher-centered educators typically rely on traditional content-delivery methods, whereas learner-centered teachers favor interactive strategies that promote student ownership, collaborative knowledge building, and active engagement (Meirink, Meijer, Verloop, & Bergen, 2009; Norton, Richardson, Hartley, Newstead, & Mayes, 2005).

The use of ICT is becoming increasingly relevant. According to Smith (2014), pre- and post-tests demonstrated that students acquired content knowledge through working in virtual environments. Furthermore, data from both students and teachers indicate that the virtual environment is highly engaging for learners. Additionally, working within a virtual environment fosters deliberate practice of essential 21st-century competencies among students (Smith, 2014). Also, the recent research by Kalyani (2024) explores the pivotal influence of technology on education, focusing on its impact on learning goals and the development of essential 21st-century skills. This analysis demonstrates that integrating technology in education has transformed traditional teaching and empowered learners in a digital society. Technology drives educational innovation, enabling student-centered approaches that accommodate diverse learning needs. Digital tools, multimedia, and interactive platforms enhance engagement, critical thinking, and problem-solving, while

internet access expands learning beyond the classroom, promoting autonomy and lifelong learning. Moreover, technology cultivates essential 21st-century skills, including communication, collaboration, and digital literacy, preparing students to navigate and evaluate information effectively in today's workforce (Kalyani, 2024).

#### *2.4.2.4 Innovative teaching methods and strategies*

SCL is defined by its innovative teaching approaches and has been widely advocated to address the needs of the rapidly evolving educational landscape (Al- Humaidi, 2015). Innovative teaching is a fundamental element frequently recognized in the literature as a key characteristic of SCL (Attard, Ioio, Geven, & Santa, 2010). Its one of the main goals is to improve students' critical thinking skills (Tsui, 2002). As highlighted by Hermans and colleagues, student-centered e-learning involves the use of interactive teaching methods such as assignments, case studies, group discussions, and presentations, which actively engage students in the learning process (Hermans, Kalz, & Koper, 2013).

In practice, innovative teaching can manifest in various forms (Attard, Ioio, Geven, & Santa, 2010). One of the main forms is *Team Learning*, also known as cooperative learning. This is one of several approaches designed to promote students' responsibility for their own learning. It allows them to engage with their peers, exchange ideas, and mutually support each other throughout the learning process (Felder & Brent, 1996). *Problem-Based Learning* also plays a significant role in contemporary teaching methods. Celebrated as a teaching method that enhances students' learning effectiveness, this approach is founded on the idea that when students apply the knowledge they acquire early in their learning journey (rather than only during exams), they are better prepared for real-world situations and develop greater adaptability (Attard, Ioio, Geven, & Santa, 2010).

When discussing modern teaching methods, the literature places particular emphasis on *Student Self-Regulated Learning*. This approach guarantees that students actively take initiative in their learning while also managing their own monitoring, motivation, and feedback processes both during and after the learning experience (Van Eekelen, Boshuizen, & Vermunt, 2005). Zimmerman (2002) identifies eight key skills for self-regulated learning: setting personal goals, using effective strategies, monitoring performance, adapting the learning environment, managing time, evaluating learning methods, attributing outcomes, and adjusting future approaches (Zimmerman, 2002).

Many of the elements mentioned above fall under active learning, which essentially encompasses all activities beyond passively listening to a teacher. It is important to emphasize, however, that advocating for active learning does not eliminate the value of lectures. Instead, it creates opportunities for students to reflect on, assess, synthesize, and communicate about the information delivered during those lectures (Maclellan & Soden, 2007; Fink, 2003).

Also, Al-Humaidi (2015) suggests various SCL methods, including lectures with discussions, online discussions, case studies, discovery learning, simulations, and role-plays. Student projects can involve papers, reports, individual or group work, research, responding to open-ended questions, and event organization. Notably, Student-Centered Learning differs significantly from Teacher-Centered Learning approaches (Al- Humaidi, 2015).

When discussing modern teaching methods, it is essential to highlight the importance of assessment and its transparency. This is especially significant given that accreditation standards explicitly emphasize this aspect. Substandard 2.4 specifically focuses on the assessment of students (National Center for Educational Quality Enhancement (NCEQE), 2022). Student assessment must be fair, transparent, and legally compliant, aligning with course objectives and learning outcomes. Students should receive feedback and opportunities to improve. In master's programs, thesis defenses must be collegial, transparent, public, and include external experts, upholding academic ethics and plagiarism standards. Students should have a clear right to appeal, and assessment results should inform teaching quality improvements (National Center for Educational Quality Enhancement (NCEQE), 2022).

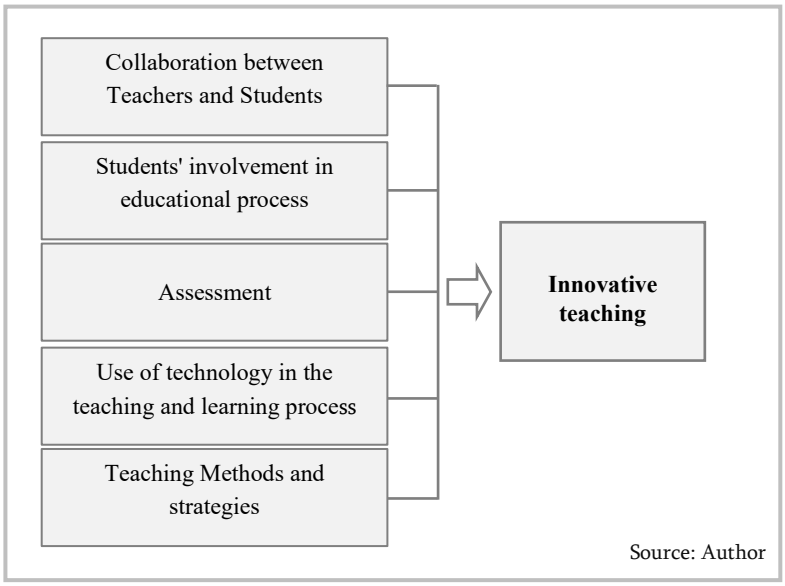
#### *2.4.2.5 Conclusion*

As explored throughout this chapter, contemporary teaching methods fundamentally rely on the active collaboration and partnership between teachers and students, fostering an environment where learners are fully engaged in the educational process. The strategic integration of technology plays a crucial role in enriching the learning experience, providing diverse tools and resources that enhance interaction, creativity, and critical thinking. Additionally, the emphasis on transparent and fair assessment practices ensures that students' achievements are evaluated objectively, promoting trust and motivation. The wide range of teaching methods and pedagogical strategies discussed in this chapter

collectively create a supportive and dynamic learning atmosphere, which encourages student autonomy and deeper intellectual involvement.

Based on these insights, it becomes evident that innovative teaching is not limited merely to specific instructional methods; rather, it encompasses the holistic integration of collaboration, engagement, technology use, assessment transparency, and diverse pedagogical strategies. Together, these elements form a comprehensive approach that effectively supports and advances SCL, ultimately contributing to a more meaningful and successful educational experience (See Figure 2).

*Figure 2: Innovative Teaching*




### *2.4.3 Developing individual competences necessary for career success*

#### *2.4.3.1 Career success: Definition*

Since the dissertation focuses on the impact of SCL on career success, this chapter reviews the literature on career success. Understanding career success begins with examining individuals' expectations of success, defined as their overall belief in the likelihood of achieving positive outcomes in a given task, activity, or area (Putwain, Nicholson, Pekrun, Becker, & Symes, 2019). In educational settings, expectations of success affect various outcomes, notably including the decisions students make about their careers (Dyke & Murphy, 2006; Sturges, 1999), the drive or inner desire to achieve goals and overcome challenges successfully (Wigfield & Eccles, 2000) and Positive feelings and satisfaction derived from one's work and career development (Xin, Zhou, Li, & Tang, 2020).

Nonetheless, studies focusing specifically on defining success are relatively limited (Weatherton & Schussler, 2021). Success is commonly understood as achieving one's objectives, completing a task, or more generally, when an individual attains positive, desirable, or favorable outcomes (Seltzer, 2021). While this definition is applicable to various contexts, research on success definitions has primarily concentrated on (a) career success, which refers to accomplishments related to an individual's work experience (Borna, Afrasiabi, Kalateh, & Gifford, 2022; Cho, et al., 2017; Guealio & Seidmann, 2014) and (b) personal success, which is connected to an individual's career (Collins-Dodd, Gordon, & Smart, 2005).

A widely accepted definition of career success in current literature is the experience of achieving goals that hold personal significance for the individual, rather than goals imposed by parents, peers, organizations, or society (Mirvis & Hall, 1994). Based on this definition, individuals across all professions have careers, each of which can be considered successful in its own unique way (Dries N. , 2011). Judge et al. (1995) define career success as the accumulation of accomplishments, whether actual or perceived, that result from one's work experiences (Judge, Cable, Boudreau, & Bretz, 1995).

Career success is often divided into two categories: objective career success (also known as extrinsic success) and subjective career success (also referred to as intrinsic success) (Nabi, 2001). Objective career success is defined as achieving higher levels of material rewards and occupational status (Blickle, Schütte, & Wihler, 2018) whereas subjective career success pertains to an individual's personal evaluation of their own success, based on their perceptions of career achievements and future opportunities (Dries, Pepermans, & Carlier, 2008). Subjective career success reflects an individual's personal evaluation of their own career accomplishments (Ng, Eby, Sorensen, & Feldman, 2005). Nabi (1999) emphasizes the significance of examining both objective and subjective success in career studies, noting that these concepts differ fundamentally and do not necessarily align with each other (Nabi, 2001).

Success can be evaluated through objective criteria, such as social or group standards, as well as subjective criteria, which involve an individual's personal evaluation (Duckworth, Weir, Tsukayama, & Kwok, 2012)). While objective and subjective aspects of success may be connected, (Abele, Spurk, & Volmer, 2011), the majority of research has primarily focused on the "objective" measures of success (Nyström, Jackson, & Salminen, 2018;

Kim, 2004). For example, in higher education research, student success has been defined by factors such as degree completion (Ewell & Wellman, 2007), post-graduation earnings, employment outcomes, quality of life, and engagement in lifelong learning (Kuh, Kinzie, & Buckley, 2006).

These diverse definitions align with students' personal perceptions of success, which include acquiring leadership skills, achieving financial stability, and building professional networks (Weatherton & Schussler, 2021; Audibert, Amorim, Andrade De, & de Oliveira, 2022). However, both school and university students also perceive career success subjectively, emphasizing feelings of happiness, gaining recognition from others, and demonstrating professionalism (Audibert, Amorim, Andrade De, & de Oliveira, 2022; Hamdan, Supriatna, & Yudha, 2022). Therefore, career success stands out as a central aspect in higher education success research (Kuh, Kinzie, & Buckley, 2006).

According to Abele, Spurk, and Volmer (2011), success is a concept constructed through individuals' experiences (Abele, Spurk, & Volmer, 2011), which are both subjective and diverse (Fernández, Ryan, & Begeny, 2023). Career success is often tied to group-based experiences, but its meaning varies individually based on group affiliations and intersecting identities. It is therefore a dynamic concept. For example, women's definitions of career success may reflect prevailing gender norms, while for Arabic women, achieving career success can serve as a form of resistance against these norms and stereotypes (Tlaiss, 2019). Historically, gender and ethnicity have shaped varying perceptions of career success for women. For example, white women have often been associated with professional roles, while women of color have been stereotypically linked to positions in the service sector (Damaske, 2011).

Not only gender, but also socioeconomic background has been shown to affect both individuals' levels of career success and how they personally define career success (Fernández, Ryan, & Begeny, 2023). However, individuals' identities do not exist in isolation; they are shaped by their interactions with others and the broader social context (Reicher, 2004). Indeed, social identities are a potentially key factor influencing how individuals define career success (Peters, Ryan, Haslam, & Fernandes, 2012).

Given the significance of identity, the social identity approach offers a valuable theoretical framework for exploring and understanding career success (Tajfel & Turner, 1979). The

social identity approach posits that individuals form their social identity through belonging to specific groups. People categorize themselves and others into groups, which shapes behavior, and they also evaluate and compare their own groups with others through social comparison (Turner, 1975). According to this model, students' social group identification shapes their perceptions of career success. Those from less privileged backgrounds, such as women or students with low social status, often define success in terms of financial stability and upward mobility, focusing on what they lack. In contrast, students from more privileged groups, like men or those with high social status, may prioritize personal growth and happiness, viewing financial and social mobility as already attainable. Students from lower-status backgrounds also tend to pursue careers perceived as less ambitious (Nieuwenhuis, Manstead, & Easterbrook, 2019), However, this can be partly explained by the fact that students tend to choose universities where they believe success is attainable and where their own definitions of success feel realistic and achievable (Fernández, Ryan, & Begeny, 2023).

#### *2.4.3.2 SCL as a key driver of career-boosting competences*

The 2009 Leuven/Louvain-la-Neuve Communiqué, a key milestone in the Bologna Process, brought together representatives from 46 countries to set strategic goals for the EHEA. It emphasizes that **"Student-centred learning (…) will help students develop the competences they need in a changing labour market and will empower them to become active and responsible citizens"** (Bologna Process, 2009), highlighting SCL as a crucial driver in developing career-boosting competencies. In the document, these skills are referred to as *transversal competences*, which higher education institutions are expected to develop in their students in order to prepare them for successful participation in the labor market (Bologna Process, 2009).

Transversal competences are anticipated to serve as critical enablers in the evolving landscape of future employment, equipping individuals with the adaptability and versatility needed to navigate complex and dynamic work environments (Cushen & Durkin, 2022). These transversal competencies—often labeled as skills, attributes, meta-competencies, or future skills—are widely recognized as foundational elements for an individual's personal growth and long-term development (ESCO, 2021). Competencies are key to productivity, enabling individuals to apply knowledge effectively across various contexts. They support employability and enhance organizational performance. According to the OECD,

competencies go beyond knowledge and skills, involving the integration of attitudes and behaviors to address complex challenges in specific situations (OECD, 2005).

The concept of "competencies" was first introduced in the 1960s, primarily through the work of American psychologist David McClelland. He conceptualized competencies as a combination of knowledge, skills, and aptitudes that collectively enable an individual to perform their job duties and responsibilities effectively. In essence, being competent implies possessing the necessary attributes to succeed in a given role (McClelland, 1973). The European Commission defines competence as the ability to effectively apply knowledge, skills, and personal, social, or methodological abilities across contexts, characterized by responsibility and autonomy. While skills refer to using specific methods or tools, competence involves the broader, proactive application of knowledge and skills in new or unexpected situations (Council of the European Union, 2018). Balcar, Janickova, and Filipova (2014) classify competences into two main groups: *professional competences*, which refer to the ability to apply previously acquired knowledge efficiently and effectively to address specific tasks within a particular profession; and *transversal competences*, which relate to values and attitudes that extend beyond a single discipline or study program and possess a transdisciplinary character (Balcar, Janickova, & Filipova, 2014).

An examination of various international and transnational policy documents highlights a growing agreement on essential core competencies such as problem-solving, communication skills, creativity, teamwork and critical thinking (Whittemore, 2018; Balcar, Janickova, & Filipova, 2014). Higher education institutions (HEIs) are increasingly expected to prepare students with the knowledge and understanding of these fundamental transversal competencies, which are vital for both individuals and organizations to effectively manage the complex challenges and opportunities presented by the digital era, both now and moving forward (Whittemore, 2018).  highlights education's key role in developing competencies, especially transversal ones essential for managing future roles. He argues that adopting a constructivist approach in higher education fosters these competencies through systematic teaching that supports cognitive learning and practical application. This approach emphasizes students as active participants, uses methods promoting independent learning, engages students with real-world problems, integrates multidisciplinary knowledge, and relies on teachers who organize, inspire, and motivate within this framework (Tsankov, 2017).

The literature also discusses teaching approaches that support the acquisition and enhancement of transversal competences. Examples of such methods include project-based learning, and case- or problem-based projects, all of which contribute to strengthening both students' technical-scientific skills and their transversal competences (Sá & Serpa, 2018). Project-based learning enhances students' understanding of knowledge across disciplines and develops transversal competencies such as teamwork, problem-solving, openness, and critical thinking. Active teaching methods also increase teacher-student engagement, allowing for personalized assessment of progress and early identification of challenges, reducing the risk of academic failure (Herrero & Antequera, 2012).

#### *2.4.3.3 Academic self-efficacy as a factor affecting development of individual competences*

As highlighted in the previous section, SCL is a key factor influencing the development of individual competencies (Bologna Process, 2009). This section focuses on another key factor that contributes to the development of these competencies: academic self-efficacy (Bouffard-Bouchard, Parent, & Larivee, 1991).

Self-efficacy is defined as the belief in one's ability to activate motivation, cognitive resources, and necessary actions to successfully handle specific situational demands (Wood & Bandura, 1989). When confronted with obstacles, setbacks, or failures, individuals who lack confidence in their abilities tend to reduce their efforts, give up too soon, or accept less effective solutions. In contrast, those with strong self-belief intensify their efforts to overcome the challenges and achieve mastery (Bandura, 2023). Academic self-efficacy refers to a student's belief in their own ability to successfully accomplish a particular academic task or achieve a specific educational goal (Pajares, 1996). Academic self-efficacy plays a crucial role in cognitive development and functioning. Students' confidence in their ability to manage their own learning and successfully complete academic tasks influences their goals, motivation levels, and overall academic performance (Bandura, 1993).

A central empirical question revolves around how accurately academic self-efficacy beliefs can predict students' motivation. Bandura (1977) proposed that these beliefs affect the amount of effort students put forth, their perseverance, and the activities they choose to engage in (Bandura, 1977). Bandura (1977) also theorized that students with strong self-efficacy are more likely to willingly engage in challenging and demanding tasks, while

those who lack confidence in their abilities tend to shy away from such tasks. Moreover, self-efficacy is positively correlated with the mental effort students report and their achievement when learning from text materials perceived as difficult (Salomon, 1984).

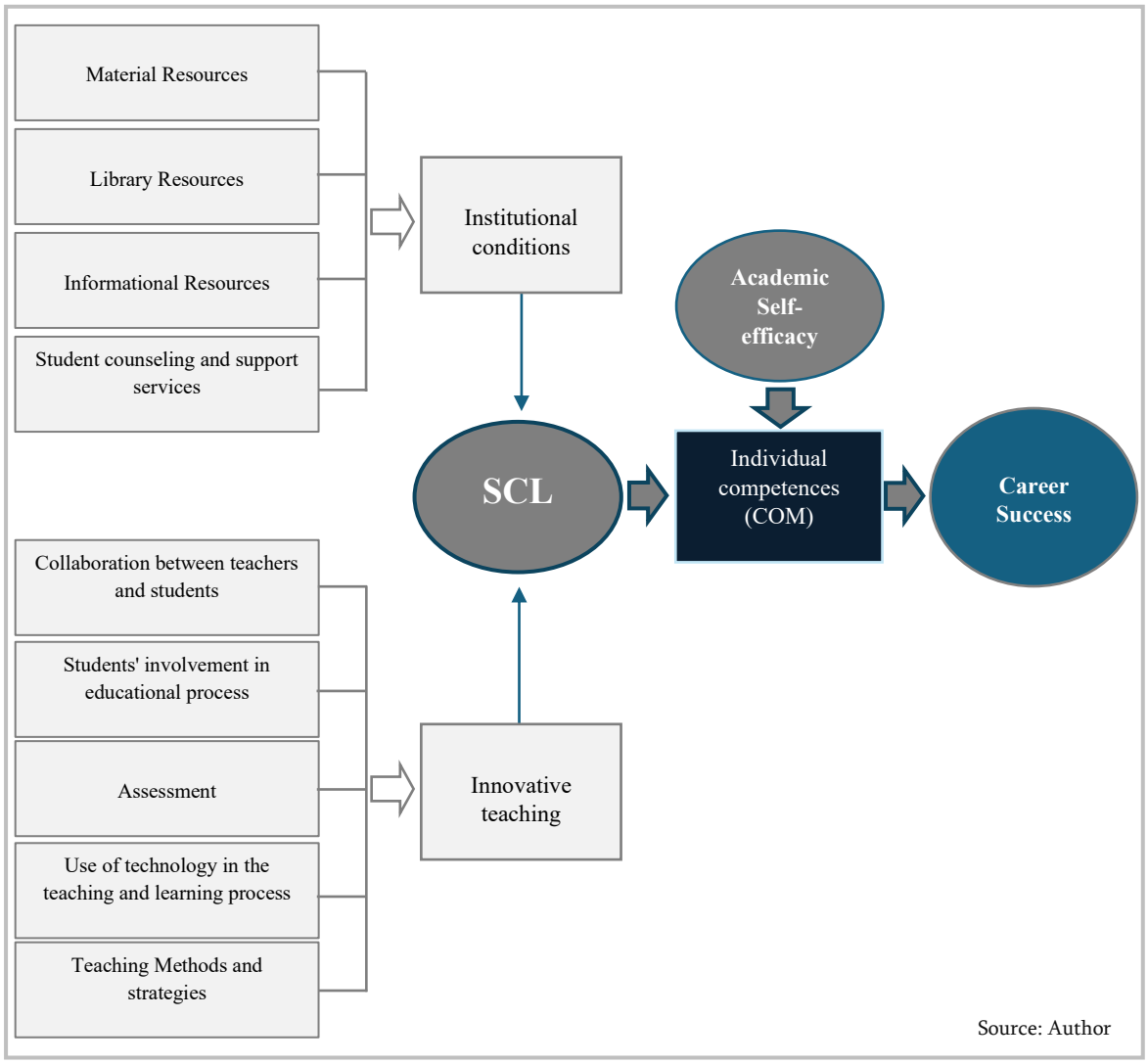
Efficacy beliefs have also been examined concerning students' persistence and academic success in their chosen college majors. Lent, Brown, and Larkin (1984) studied self-efficacy related to attaining 15 different scientific and technical careers. In a one-year follow-up, students who held strong confidence in their abilities demonstrated greater persistence and earned significantly higher grades in science and engineering courses compared to those with lower self-confidence. Additionally, perceived efficacy showed a positive correlation with objective indicators such as mathematics aptitude and high school academic performance (Lent, Brown, & Larkin, 1984).

In summary, students with a strong sense of academic self-efficacy are better equipped to focus attentively, organize information effectively, and elaborate on content successfully, thanks to their enhanced cognitive capabilities (Heslin & Klehe, 2006). Academic self-efficacy, defined as the belief in one's abilities and capacity to perform and learn effectively, is a crucial factor contributing to the success of university students (Hill, 2002). Students who have confidence in their ability to learn or complete a task are more likely to develop strong academic self-efficacy, put in greater effort, persist longer when encountering difficulties, and achieve higher levels of success compared to those who doubt their capabilities. (Schunk & Pajares, 2002). Moreover, a strong sense of self-efficacy among students fosters the development of competencies, enhances capacity building, and strengthens resilience by encouraging motivation and dedication to tasks, a diligent work ethic, sustained perseverance, and the ability to overcome challenges, particularly in difficult situations (Vermeiren, Duchatelet, & Gijbel, 2022).

#### *2.4.3.4 Conclusion*

The topics covered in Chapter 2 address the development of individual competencies, which are necessary for career success, and the factors influencing them. Based on the literature analysis, it was identified that the primary factor affecting the development of individual competencies is SCL, which encompasses two main dimensions: institutional conditions (see Section 2.4.1) and innovative teaching (see Section 2.4.2). Furthermore, academic self-efficacy also impacts individual competencies (see Section 2.4.3.3). A visual representation of this entire framework is provided in Figure 3.

*Figure 3: Conceptual Framework*




# CHAPTER 3 Qualitative study

## *3.1. Research aim and research question*

In the Georgian context, it is crucial to examine the challenges facing the education system and to understand the outcomes of past reforms (Darchashvili, 2021). Recent trends in higher education highlight learning outcomes-oriented approaches, with SCL representing a key direction within the EHEA (Bologna Process, 2005; Bologna Process, 2009). Consequently, investigating the adoption of SCL in Georgia is of particular importance. This study is essential for evaluating how effectively these international approaches have been integrated into the Georgian higher education system and for identifying areas with potential for further enhancement.

The SCL approach emphasizes active student engagement in the learning process while addressing individual learners' needs (Attard, Ioio, Geven, & Santa, 2010; Kaput, 2018). The central principle of SCL is the shift from a standardized approach to one that is student-focused and individualized, although no universal definition or standardized implementation framework exists (Kaput, 2018) . This implies that instruction is customized to each student's individual needs, goals, and interests, and is designed with their active input (Kaput, 2018; Lea, Stephenson, & Troy, 2003). However, Khabeishvili (2023) emphasizes that sufficient encouragement for the implementation of this approach remains lacking within Georgia's higher education system (Khabeishvili, 2023). Moreover, Paul Gibbs et al. highlight that there seems to be an absence of a consistent and unified understanding of the concept of SCL within Georgian higher education (Gibbs, et al., 2022).

Taken together, these points highlight the importance of closely examining the ways SCL is applied in Georgia. Gaining a solid understanding of how it is perceived and put into practice is key to improving teaching and learning approaches. This knowledge can foster an environment that genuinely prioritizes students' needs, encourages engagement, and contributes to the long-term success of higher education reforms.

This qualitative part of the study investigates how academic staff in Georgian higher education understand and implement SCL, focusing on their perceptions of its principles and the degree to which these principles are reflected in teaching and learning practices. It examines educators' theoretical understanding of SCL, alongside their personal attitudes and the values they attribute to this approach. The research also explores the strategies, methods, and tools instructors employ to foster SCL-oriented learning environments. By emphasizing academic staff's lived experiences and reflections, the study provides insight into the challenges of implementing SCL in Georgian higher education, while critically considering its perceived benefits and potential limitations from the educators' perspective.

By generating a comprehensive and contextually grounded account of these dynamics, the qualitative component will provide a rich and nuanced understanding of how SCL is currently conceptualized and practiced in Georgia. Through the analysis of these findings, the study will shed light on how SCL is currently interpreted and practiced in Georgia, while also identifying the critical factors that support its effective integration into higher education.

Accordingly, the study is guided by the following central research question:

- What are the lived experiences of Georgian academic staff with SCL?

## *3.2. Methodology*

### *3.2.1 Heuristic Inquiry*

This study employs Heuristic Inquiry, a phenomenological approach emphasizing the researcher's personal experiences and insights. It explores questions such as: "What is my experience of this phenomenon and the essential experience of others who also experience this phenomenon intensely?" (Patton, 2002). Introduced by Clark Moustakas in his 1961 book *Loneliness* (Moustakas, 1961), heuristic methodology derives from the Greek word heuriskein, meaning "to discover or to find" (Moustakas, 1990). It seeks to understand the essence and meaning of a phenomenon through self-reflection, exploration, and clarification of internal experiences (Douglass & Moustakas, 1984).

Heuristic inquiry is a unique research method that emphasizes personal human experiences rather than numerical data, relying on implicit knowledge and promoting a highly subjective and creative interaction between the researcher and the phenomenon (Sela-Smith, 2002). By taking a compassionate approach, the researcher fosters open dialogue with co-researchers, ensuring the inquiry remains both emotionally engaged and scientifically rigorous (Anderson, 2000).

Heuristic inquiry incorporates the researcher's experiences alongside those of co-researchers, rather than separating the researcher from the study. Direct engagement with the phenomenon is essential for uncovering its true essence and meaning (Moustakas, 1990). Thus, heuristic inquiry emphasizes understanding meaning over measurement, essence over appearance, quality over quantity, and experience over behavior (Douglass & Moustakas, 1984). However, heuristic inquiry maintains structure, requiring the researcher to conduct a disciplined exploration of the fundamental meanings of significant human experiences. Balancing passion with methodological rigor is essential to ensure the study's trustworthiness (Djuraskovic & Arthur, 2010).

Heuristic research differs from other methods by positioning the researcher as an active participant, fully engaging with the intensity of the phenomenon. Through self-directed, reflective learning, researchers explore its intrinsic meaning while remaining open to spontaneous changes in focus and direction (Douglass & Moustakas, 1984). In heuristic research, the researcher creates a narrative that captures the deep meanings and essence of

unique human experiences. This personal approach allows participants' stories to be understood and their voices recognized. Participants are viewed not just as subjects but as active co-researchers contributing to the heuristic process (Moustakas, 1990).

In heuristic inquiry, within the phenomenological framework, two key elements are central: the researcher's personal experience and deep engagement with the phenomenon, and the involvement of co-researchers who share similarly intense experiences (Douglass & Moustakas, 1984). As Douglass and Moustakas (1985) note, heuristic inquiry focuses on meanings over measurements, essence over appearance, quality over quantity, and experience over behavior (Douglass & Moustakas, 1984). The rigor of heuristic inquiry stems from systematic self-observation, reflective dialogue, and in-depth interviews with co-researchers (Lewis-Beck, Bryman, & Liao, 2003).

Heuristic inquiry, though grounded in phenomenology, differs in key ways (Douglass & Moustakas, 1984): First, it emphasizes connectedness and relationships, unlike phenomenology's analytic detachment. Second, it seeks essential meanings through personal significance, whereas phenomenology focuses on structured descriptions. Third, heuristics incorporates the researcher's intuition and tacit knowledge, in contrast to phenomenology's emphasis on distilled structures. Finally, while phenomenology concludes with the essence of experience, heuristics preserves the essence of the person within the experience.

### *3.2.2 Six phases of Heuristic Research*

The heuristic inquiry process progresses through systematic steps—Initial Engagement, Immersion, Incubation, Illumination, Explication, and Creative Synthesis—each aiding in uncovering the experiential essence (Moustakas, 1990).

*Initial engagement,* the first stage of heuristic inquiry, involves identifying a topic that genuinely interests the researcher, aligns with their personal experiences, and holds broader social significance (Moustakas, 1990; Djuraskovic & Arthur, 2010).

*Immersion,* the second stage, involves the researcher fully engaging with the topic and guiding question. As Moustakas (1990) explains, the researcher "lives the question," allowing it to shape daily life, thoughts, and experiences. This phase includes ongoing self-dialogue, deep reflection, intuitive exploration, and openness to emerging insights, all of which deepen the connection with the phenomenon (Moustakas, 1990).

*Incubation,* the third phase of heuristic inquiry, involves stepping back from intense immersion to create distance from the research question. During this stage, unconscious processes, tacit knowledge, and intuition operate in the background, gradually deepening understanding beyond immediate awareness (Moustakas, 1990). Insights often emerge naturally as the researcher allows space for reflection and internal processing (Polanyi, 1964).

*Illumination,* the fourth phase of heuristic inquiry, occurs when the researcher becomes receptive to intuitive insights and tacit knowledge. New themes and meanings naturally emerge, providing clarity on the phenomenon. This phase blends reflection with inner awareness, allowing previous understandings to be revised and new perspectives to be discovered, culminating in a more complete and integrated grasp of the research question (Moustakas, 1990).

*Explication*, he fifth phase of heuristic inquiry, entails a systematic examination of the insights and themes that emerged during illumination (Djuraskovic & Arthur, 2010). The researcher engages in deep reflection, recognizing the uniqueness and complexity of experiences. This process allows the phenomenon to take shape as a whole, revealing new perspectives and patterns, considering alternative explanations, and refining findings to develop a comprehensive understanding (Moustakas, 1990).

*Creative synthesis,* the final stage of heuristic inquiry, integrates the themes, qualities, and insights developed during explication (Moustakas, 1990). It goes beyond summarizing findings to present a holistic portrayal of human experience, often through narratives, stories, or artistic representations (Djuraskovic & Arthur, 2010). In the context of this study, the creative synthesis illustrates how academic staff navigate and engage with SCL. Although the researcher plays a central role in shaping the synthesis, the voices of co-researchers were carefully included through their feedback, ensuring that their lived experiences were authentically reflected in the final representation.

### *3.2.3 Limitations of Heuristic Methodology*

While heuristic inquiry has notable strengths, it also has limitations. Its minimal structure and flexible procedures, though fostering creative freedom, can pose risks. As Frick (1990) notes, this openness may lead to reduced rigor, researcher irresponsibility, or insufficiently developed studies (Frick, 1990). Heuristic methodology requires the researcher to have a

solid grasp of its philosophical foundations, which can be challenging for those inexperienced with this approach (Creswell J. W., 1998).

Another limitation of heuristic methodology is its emphasis on the researcher's subjective experience, which can introduce bias. The interpretation of the phenomenon relies largely on the researcher's perspective, and direct engagement with the phenomenon may shape the study, including the selection of co-researchers, potentially favoring those with experiences similar to the researcher's own (Djuraskovic & Arthur, 2010).

Third, the small sample size (n=12) limits the generalizability of the findings (Djuraskovic & Arthur, 2010); however, it was intentionally selected to capture the deep and subjective experiences of co-researchers regarding SCL.

Fourth, quantitative measures of validity do not apply to heuristic methodology, as it is a qualitative approach and cannot be evaluated through statistics or correlations (Moustakas, 1990). Instead, validity is assessed in terms of meaning, with the researcher serving as the primary judge, repeatedly revisiting the data to ensure that co-researchers' experiences are accurately represented (Djuraskovic & Arthur, 2010).

The validation process makes heuristic methodology highly demanding, requiring extensive and sometimes exhausting engagement from the researcher. Inexperienced researchers may find it challenging to accurately represent co-researchers' experiences and capture their essential meanings. Despite its subjectivity, heuristic inquiry is structured, and with proper preparation, these challenges can be effectively managed (Djuraskovic & Arthur, 2010).

### *3.3 Sample*

Guest et al. (2006) found that in homogeneous studies using purposive sampling, typical of many qualitative designs, data saturation is often achieved after about twelve interviews (Guest, Bunce, & Johnson, 2006). However, it is important to note that this study's sample was professionally diverse, including individuals in academic and administrative roles, as well as experts in authorization and accreditation at the Georgian National Center for Educational Quality Enhancement. Given this heterogeneity and the rich insights from participants with multifaceted responsibilities, it is reasonable to conclude that data

saturation was likely achieved. The varied perspectives provided a comprehensive understanding of the phenomenon, reinforcing the robustness of the qualitative findings.

In general, researchers should carefully plan their sampling strategy and define the study method in advance. Sampling techniques are typically divided into probability and non-probability approaches. In probability sampling, every unit in the population has a known, non-zero chance of selection, ensuring a representative sample and allowing findings to be generalized with greater confidence (Naderifar, Goli, & Ghaljaie, 2017). In contrast, non-probability sampling selects participants based on accessibility or the researcher's judgment, meaning not all individuals have an equal chance of inclusion, and the sample composition cannot be predicted. Consequently, generalizing findings to the broader population is limited, and sampling error cannot be calculated. Typically, quantitative research uses probability sampling, while qualitative research relies on non-probability methods (Abedsaeidi & Amiraliakbari, 2015). The primary goal of qualitative research is to gain a deeper understanding of a phenomenon, rather than to generalize findings to a wider population (Naderifar, Goli, & Ghaljaie, 2017).

Participants for this study are selected using non-probability snowball sampling, a type of convenience sampling useful for hard-to-reach populations. In this approach, initial participants help identify and recruit others who meet the study criteria, and the process continues until data saturation is achieved, meaning no new themes or insights emerge (Burns & Grove, 1993). In snowball sampling, the researcher begins by identifying a small number of initial participants—typically chosen through convenience sampling—and asks them to refer others with similar characteristics, experiences, or perspectives relevant to the study. This method is time-efficient and fosters stronger communication and trust, as subsequent participants are often acquaintances of the initial ones and thus indirectly connected to the researcher (Polit & Beck, 2012). This networking approach is particularly valuable for reaching individuals who prefer to remain anonymous or are reluctant to disclose their identities (Hejazi, 2006).

Snowball sampling is a widely used technique in social science research, especially in education. It is effective for accessing hard-to-reach groups, such as students, teachers, and parents, and is valued for its flexibility and ability to gather data from populations that are hidden, difficult to access, or socially sensitive (Pasikowski, 2023).

For this study, snowball sampling was chosen for its effectiveness in reaching populations difficult to access through conventional methods. It facilitated the identification and recruitment of academic staff well-connected within their professional networks, ensuring a diverse range of perspectives and experiences. Overall, this approach was a deliberate strategy to enhance recruitment efficiency while maintaining adequate representation of key stakeholders.

### *3.4 Data Collection*

Qualitative research allows for an in-depth exploration of a phenomenon using flexible data collection methods and generating rich, detailed descriptions. It relies on non-numerical data, such as narratives and observations, to present findings in a descriptive and interpretive way (Polit & Beck, 2010). Qualitative research is well-suited for studying complex, context-dependent concepts like SCL in Georgia. This approach allows for a nuanced exploration of how academic staff interpret and implement SCL within the unique cultural and institutional contexts of Georgian higher education. It facilitates the examination of subjective experiences, identification of challenges, and highlighting of effective practices, capturing diverse academic perspectives and providing insights into SCL's benefits, the competencies it fosters in students, and its broader relevance to career development and employability.

Data can be collected through various methods, including interviews, observations, focus groups, narratives, field notes, and reports. The selection of techniques depends on the research questions, topic sensitivity, participant characteristics, and available resources (Speziale, Streubert, & Carpenter, 2011).

In this study, data were collected using in-depth interviews, specifically *informal conversational interviews*. This approach enables a natural flow of information, allowing co-researchers to share their experiences openly and authentically (Djuraskovic & Arthur, 2010). It aligns with the rhythm of heuristic inquiry, supporting the exploration and discovery of meaning (Moustakas, 1990).

Although informal conversations have traditionally been associated with ethnography and participant observation (Merriam, 1998; Kawulich, 2005; Bernard, 2011), Swain and King (2022) argue that they can be applied more broadly in qualitative research. They are suitable for studies conducted in natural, everyday settings, including action research, case studies,

ethnomethodology, narrative inquiry, phenomenology, and social anthropology. Informal conversations promote smoother communication and often produce more natural and authentic data compared to structured interviews (Swain & King, 2022; Davis & Brown, 2024).

Informal conversations are described using terms such as “informal interviewing” or “natural conversations,” and are sometimes viewed as equivalent to “unstructured” interviews (Zhang & Wildemuth, 2009; Bernard, 2017; Gray, 2021). Despite their informal nature, these dialogues are still considered valid interviews (Hammersley & Atkinson, 2007; Swain & Spire, 2020).

Research from the 2010s shows that informal conversations have been increasingly used across various fields (Davis & Brown, 2024). For example, Kate Thomson highlights their significance in educational research, although her data collection involved semi-structured interviews in which university academics discussed how informal staff exchanges could enhance teaching practices (Thomson K. , 2015; Thomson & Trigwell, 2018). Swain and Spire (2020) argue that informal conversations add context and authenticity to data, uncovering insights that might otherwise be missed (Swain & Spire, 2020). Similarly, Swain and King (2022) describe this method as underutilized, noting that it facilitates easier communication and often produces more naturalistic data, highlighting its potential for broader application (Swain & King, 2022).

The participants in this study primarily hold administrative roles while also serving as experts in authorization and accreditation at the Georgian National Center for Educational Quality Enhancement. Their academic careers span from five to over thirty years, offering a wide range of professional experience. This diversity provides a solid foundation for exploring SCL in Georgian higher education. Moreover, nearly all participants have experience in both public and private universities, allowing for a nuanced examination of the distinct characteristics of each sector.

All interview participants’ identities were kept strictly confidential and known only to the researcher. To protect anonymity, identifying information was excluded from field notes, which were securely destroyed after key themes were analyzed. At the start of each interview, participants were informed about ethical considerations, including confidentiality and their right to withdraw at any time. Interviews, lasting about forty

minutes on average, were audio-recorded with consent and transcribed verbatim to ensure accuracy. Conducting interviews in Georgian allowed participants to express themselves fully and comfortably, preserving the richness and authenticity of the data.

### *3.5 Results*

**Definition of SCL**

The interviews reveal that SCL is a multifaceted and dynamic process. However, all respondents agree that SCL is a teaching approach that places the student at the center and is tailored to their needs, interests, and abilities.

According to the interviews, the core principles of SCL have been identified (see figure 4) as follows:

- **Personalized and individualized approach**

The majority of respondents emphasize that the teaching process should align with each student's abilities, interests, and needs. This can only be achieved if lecturers actively interact with students, explore their strengths and weaknesses, observe their engagement in the learning process, and possess information about their individual needs. This process involves regular dialogue with the student, through which their values, interests, and learning styles can be better understood. Such communication not only helps the lecturer assess the student's abilities accurately but also enables them to tailor the learning process to meet the individual needs of each student.

In addition, the respondents emphasize the importance of considering the student's prior knowledge. According to them, it is crucial for lecturers to first determine what knowledge and experience students bring to a particular course to avoid unnecessary repetition or, conversely, the unclear delivery of complex material.

*"There should be a lively discussion, and moreover, more closeness between each other."*

*"For me, student-centered learning means planning the teaching in a way that is centered around the student, taking into account their prior knowledge, and planning based on their resources, both intellectual and material."*

*"Student-centered learning means that the teaching is tailored to the students, taking into account their interests. In student-centered learning, the student is the leader. Therefore,*

*we must approach from the student's perspective and adapt our curricula, study plans, textbooks, and topics to their interests."*

- **Active learning and student engagement**

Interviews show that one of the key characteristics of SCL is the active role of the student in the learning process.

In terms of active learning and student engagement, the respondents identified various methods such as problem-based learning (PBL), project-based learning, case studies, teamwork, and discussions. They note that, unlike traditional passive learning, where the student is merely a listener during lectures, the modern approach involves the student's engagement at every stage of the learning process. The active role of students is expressed in several ways:

- The use of interactive teaching methods – Teaching should not be limited to just listening to lectures. It is necessary to incorporate methods that encourage active participation from students. For example, discussions, group projects, case analysis, and practical assignments are particularly effective.
- Student control over the learning process – According to the respondents, it is important to give students the opportunity to determine their own learning pace, select topics that are most relevant to them, and choose approaches that help them in their studies. This can be achieved by offering a variety of learning materials, implementing a system of optional assignments, and regularly gathering feedback from students.
- Collaborative learning – Some respondents note that an active student role is supported by creating a collaborative environment where students work not only with the lecturer but also with their peers. Group assignments, projects, and discussions help students learn from one another, further enhancing their individual participation.

*"Student-centered learning is when we build knowledge together. This is the cornerstone. Its expressions are creating an educational experience together that allows different students to fully reveal their potential."*

*"Every student should be actively involved in the teaching-learning process."*

- **Focus on practical knowledge and the development of skills required for the labor market**

The focus on practical knowledge and the development of skills required for the labor market is a crucial aspect of SCL. The interview analysis reveals that this approach goes beyond just transmitting theoretical knowledge. Lecturers emphasize that effective teaching should integrate theory with practice, ensuring that students not only absorb academic content but also develop the skills to apply it in real-world work environments and everyday life situations.

While theoretical knowledge is essential, lecturers highlight that it is not sufficient on its own. Traditional teaching often concentrates primarily on transmitting conceptual knowledge, with little emphasis on how that knowledge is applied outside the classroom. In contrast, a student-centered approach uses teaching methods that promote the practical use of knowledge, fostering critical thinking and problem-solving skills. This approach ensures that students are not just passive recipients of information but active participants, ready to tackle challenges in the labor market and in their broader personal and professional lives.

*"You should explain to the student why they are doing what they are doing, why they are studying. Also, you should introduce them to the market demands. It's not only about subject knowledge, but also other skills that the market requires, such as basic digital technology skills."*

*"The student should have theoretical knowledge, that's fine, but the rest should be skills."*

*"Education is not just about transferring knowledge, but also about developing skills. For me, student-centered learning is an approach focused on personal growth."*

- **The role of the lecturer: "Facilitator" rather than just "knowledge transmitter"**

The role of the lecturer has significantly changed in the context of SCL, as revealed through the analysis of the interviews. In modern higher education, lecturers are no longer simply individuals focused on delivering information. They now play a crucial role as mentors, motivators, and specialists in managing the learning process effectively. All respondents unanimously agree that their role involves not only providing knowledge but also

developing students' competencies and skills, which will help them succeed in real-life situations in the future.

Thus, lecturers are transitioning from being mere conveyors of knowledge to becoming experienced leaders, coaches, and mentors. Their insights greatly help students to unlock their potential and assist them on their educational journey.

*"For example, most of the lecturers I had made me feel that the lecturer was at the center of the process, and in fact, they conducted the lecture like a solo performance."*

*"The lecturer is one of the participants in this discussion, so to speak, a facilitator, whose main purpose is not to tell the student that this is how it is, but to present a perspective and say, 'Here's my viewpoint, now let's critique it, so that many ideas can emerge around it and your mind can be opened as much as possible.'"*

- **The university's material-technical environment**

The analysis of the interviews shows that the vast majority of respondents unanimously acknowledge that the physical and technological infrastructure of the learning environment is directly linked to the quality of teaching. Implementing SCL in modern universities requires more than just changes in pedagogical approaches—it is crucial for the learning environment to be comfortable, flexible, and technologically equipped.

The physical setup of the university and its arrangement indicate whether the institution is student-centered. The arrangement of desks, the design of the space, and the availability of technological resources determine the extent to which interactive and student-centered teaching is possible. For a student-centered approach, it is essential to have learning spaces that allow for group work, discussions, and the promotion of critical thinking. Modern classrooms should be comfortable, technologically equipped, and adaptable to interactive learning.

*"Student-centered learning starts from the classroom, the environment, what kind of environment you enter, and the elementary things like how the desks are arranged. So, when we talk about the environment of the institution and how the university is organized, it's already clear whether it's a student-centered university or one that focuses on classical teaching methods, or if it has a mix of both."*

*"Therefore, one aspect is the environment in which the lecturer is placed, where they will have the opportunity to conduct teaching with the necessary material-technical infrastructure in a student-centered way. Even in this case, technology and equipment play a very significant role. Otherwise, you won't be able to implement or use these innovative methods and approaches, which are more student-centered than traditional methods, because innovative methods require technology."*

Material-technical resources include digital libraries and access to scientific databases as an integral part. Modern education largely relies on research and international data, which means that students and lecturers can use global information sources to enhance the learning process and support research. Therefore, digital libraries and scientific databases must be an essential component of the educational and scientific processes.

In addition, the quality and stability of the internet are important because the learning and teaching processes are often dependent on internet-accessible resources. Respondents highlighted this issue as significant, as the smooth execution of the learning process is only possible when the internet is uninterrupted, fast, and secure. High-quality internet is crucial not only for accessing and exchanging learning materials but also for online learning, conducting distance lectures, and enabling students to use various technological tools.

Regarding technical support, respondents mentioned that universities must provide effective technical assistance to ensure that both students and lecturers do not encounter problems during the teaching process. To prevent technical issues during the learning process, it is important for the educational environment to always have specialists who can respond quickly and resolve any technical issues in a timely manner.

They also pointed out that when a university ensures both a high-quality technological environment and appropriate technical support, it significantly improves working conditions for both students and lecturers and allows them to enhance the quality and effectiveness of teaching.

- **The use of technology in the teaching-learning process**

The analysis of the interviews shows that technology is an integral part of SCL, and its effective use significantly improves the quality of teaching, enhances interactivity, and facilitates the transfer of knowledge. The integration of technology into the modern

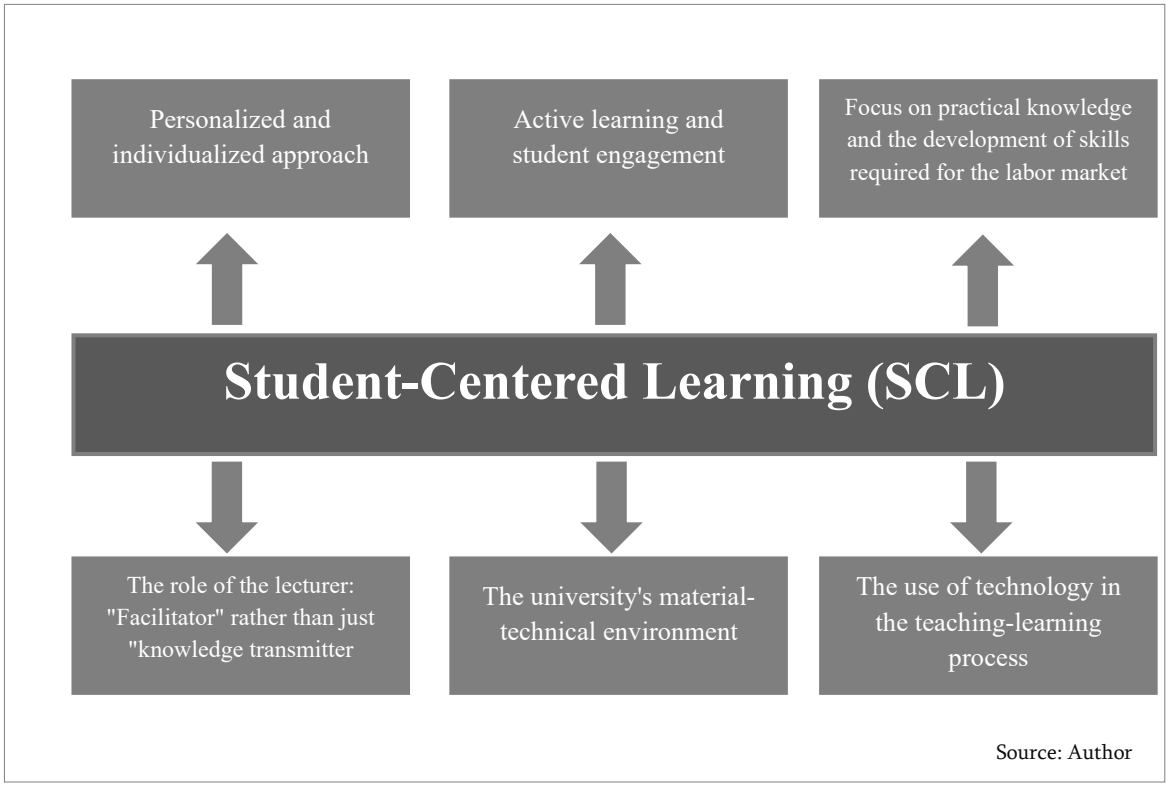
learning process not only activates the process but also significantly increases student engagement and boosts their motivation.

For example, respondents highlight the necessity of using technologies such as Learning Management Systems (LMS) to increase classroom interactivity. They also discuss the importance of online platforms like Zoom, Microsoft Teams, and Google Meet, which allow students to work in real-time, regardless of their location.

The use of technology is also crucial for providing students with access to digital resources, such as digital libraries, scientific databases, and e-books, which enable more efficient information searches, allow them to study the latest research, and familiarize themselves with various sources.

Therefore, respondents believe that the implementation of technology into the learning process not only helps make the learning environment more engaging and flexible but also significantly improves the management of the learning process, enhances interactivity, and creates deeper student involvement.

*Figure 4: Core Principles of Student-Centered Learning (SCL)*




Source: Author

**Implementation of SCL in Georgia**

*"On a scale of 10, I'd give it a 4 or 5. It might exist in some places, but generally it doesn't. Colleagues have so many lectures to deliver that they often don't have time for this. It's the same in both public and private universities—lecturers are constantly running around, paid by the hour, and lack a stable income."*

According to the respondents, the overall context for the implementation of student-centered learning in Georgia is weak. However, evaluations of SCL reveal clear differences between public and private universities: In public universities, scores typically hover around 4 to 5 out of 10, reflecting several systemic challenges. By contrast, private universities generally achieve higher ratings—around 6 to 8 out of 10—thanks to more flexible structures and better resource allocation. Smaller class sizes allow instructors to engage directly with each student, tailoring assignments and discussions to their interests and abilities. Private institutions are also more likely to invest in professional development opportunities, such as workshops on innovative pedagogies and technology integration, which equip faculty to implement student-centered approaches effectively. In many cases, private universities have the budget to maintain up-to-date facilities, from interactive classrooms to digital learning platforms, further supporting a learning environment that prioritizes student engagement and skill development.

In private universities, student-centered approaches are used more actively, although they are often driven by commercial interests. Nevertheless, high competition among private institutions positively influences the adoption of modern teaching methods and the delivery of high-quality student services. Additionally, respondents believe that in smaller universities the teaching process is more flexible and personalized .

*"In private universities, the score is high because they operate as profit-oriented businesses. They strive to be student-centered and to promote student well-being."*

*"Student-centered practices are likely more prevalent in private universities than in public ones. In private institutions, there is a stronger push to cater to students' interests and keep pace with today's competitive environment."*

*"For example, in private universities I personally find much better material and technical resources than in public ones. In state universities, there is often not even the basic equipment to project something on screen or give a simple presentation—which today is*

*considered standard, not innovative. Unless I bring my own laptop and reserve the room ahead of time, I physically can't demonstrate anything visually in that lecture hall."*

According to respondents, two main factors hinder the large-scale implementation of SCL in public universities. First, bureaucratic challenges—particularly the dysfunction of student services such as course registration—consume significant time and energy. Second, the lack of capacity for individualized approaches in large, overburdened lecture halls: student numbers are so high that instructors have neither the time nor the resources to address each student's needs. Respondents believe that improving the situation requires modernizing administrative processes and balancing lecturers' workloads so that time and resources can be allocated fairly toward student personalization.

*"In public universities, the problem is so big—though I probably shouldn't be saying this—that in some places, students face serious issues during course registration. They often can't register for the courses they actually want, because the system just isn't student-oriented. Even the administrative staff sometimes don't fully understand it. You basically have to wait until midnight and try to register then—it's a terrible situation and definitely not student-friendly."*

In addition to the differences between public and private universities, some respondents also highlight variations between academic programs. They note that student-centered approaches are implemented more effectively in certain programs, while in others they are less evident.

*"There are also differences at the program level. What we're seeing are isolated, 'island-like' experiences. Across the whole country, I can name maybe twenty programs where I can confidently say that student-centered teaching is actually taking place — mostly in private universities."*

SCL in Georgia is still in the process of development and formation. The research reveals that, despite the values and policies declared at the national level, the large-scale and consistent implementation of this approach remains limited. Private universities appear to be more flexible and responsive to modern educational trends; however, some respondents note that this is often driven by commercial motives—where concern for student well-being is, in some cases, seen as a strategy for maintaining competitiveness in the market.

On the other hand, the advancement of SCL in public universities is hindered by several significant factors. One major challenge is bureaucratic obstacles, such as inefficient administrative services and inflexible registration systems. Another is the persistence of a traditional academic culture and mindset that often favors teacher-centered approaches. In addition, the high number of students and the heavy workload of lecturers greatly limit the possibilities for individualized approaches.

**Integration of SCL into Daily Practice**

In this case, it is necessary to distinguish between the academic and administrative directions (See figure 5).

From the perspective of the **administrative direction**, several key points are mentioned by the respondents, including:

- Smart student services, which include providing information that corresponds to their individual needs on any given issue; individual approach, including personalized payment plans for semester fees; informing parents when necessary.

*"From an administrative perspective, once the semester starts and before the student is enrolled, the focus on the student begins."*

*"Student services should be adapted in such a way that the student experiences maximum comfort in terms of time and service, providing the most concise and accurate information. This generation prefers short and specific information when pointed out, as they often don't like lengthy explanations."*

*"We try to offer all services in such a way that they are supportive and as tailored to their needs as possible."*

- Creating an inclusive environment for all students, including those with disabilities and international students.

*"One of the important factors of student-centered learning is also the integration of international students. They are often stressed because they are far from their home countries, are in an intense study environment, and require extracurricular activities. I help them integrate properly into the university environment and ensure that they feel as comfortable and well-supported as possible."*

- Regular feedback from students (confidential surveys, formal or informal meetings, interviews, continuous analysis of student needs).

*"Communication with students, both formal and informal. This includes, for example, conducting surveys and meeting with students in an informal setting, involving both lecturers and faculty members, as well as higher-level staff."*

*"Also, regular surveys. A survey at the end of each semester for students. It must be confidential. Additionally, interviews and group meetings. What do you like, what don't you like, what methods the lecturer uses, if the lecture times are convenient for you, etc."*

- Academic process flexibility (discussion of changes at program meetings, making changes to the syllabus, implementing new approaches).

*"First of all, when we have program meetings, we present ideas, and everyone is required to suggest ideas."*

- Diversity of the course: inviting guest speakers, field lectures, integrating the lecturer's own articles and research into the syllabus.

*"That means, out of the 15 weeks, one is dedicated to either a guest speaker or we take the students somewhere. We might take them to a company, or a representative from the company could come to us, depending on how we organize it. The key is that students should have some exposure to professionals in the field so they can understand the practical aspects."*

*"We recommended that they include their own articles and research in the syllabus, so that the work the lecturer has done in the field reaches the students."*

- Connection with employers (career days, organization of internships, involvement of employers in the educational process).

*"We hold career days, employment forums, to provide additional information about labor market demands and directly connect them with employers."*

As for the **academic perspective**, it is primarily focused on the use of modern teaching methods. Based on the analysis of the data, it appears that the methods used in the learning process include the following methods:

- Project-based learning

*"My main goal is for the student to create something. For me, it's unacceptable for a student to just write something or follow instructions throughout the semester and that's it. What's important to me is that the student works on a project or carries out some kind of activity."*

- Teamwork – Students often work in teams, which helps develop their collaboration and communication skills.

*"I try to encourage them to motivate each other and achieve success together. It's rare to have a course without a group presentation."*

- Practice-based learning – practical assignments are actively used, helping students develop analytical and critical thinking skills.

*"I teach a practical subject and conduct interactive lectures. I always try to incorporate practical elements. Student engagement is essential, and I prefer less traditional lectures. My approach emphasizes interactive learning and the involvement of every student."*

- Case-based learning – Discussing real-life cases helps students apply theoretical knowledge in practice
- Visual presentations

*“They like it more and concentrate better when you’re explaining and showing something visually at the same time. Their visual memory works better, and they tend to remember things more effectively.”*

- Individual mentoring – informal communication with students.

*"I often hold additional online meetings, especially for introductory courses, to provide guidance and orientation."*

*"I give students the opportunity to come here, have some tea, talk, go somewhere together, plan something, and carry it out as a group."*

- Maximizing the engagement of all students in the learning process.

*"I try to ensure the engagement of all students during my lecture, encouraging interactivity and critical thinking, which I believe is crucial."*

*"When I see that a student is not being active or is shy during the lecture, I try to encourage them and provide motivation. Some students feel uncomfortable expressing their opinions*

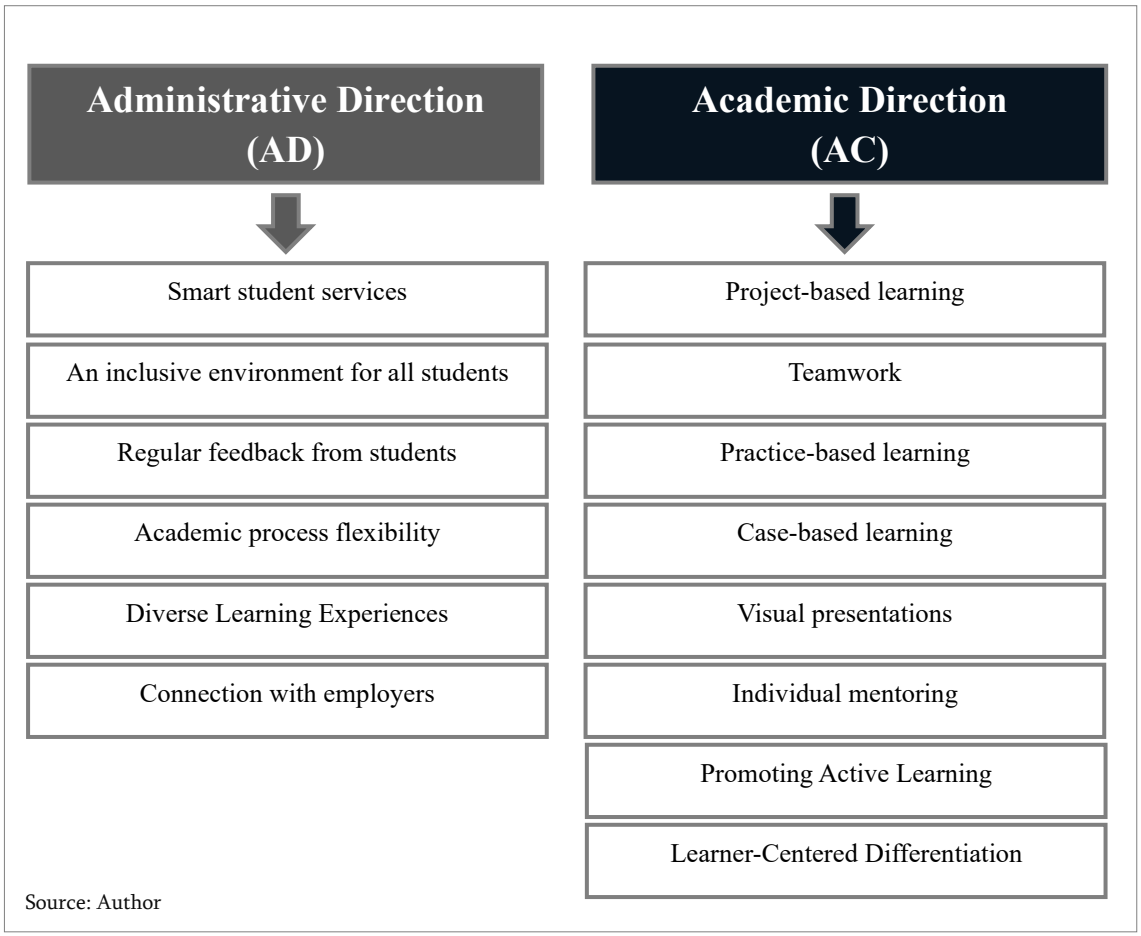
*publicly. We need to try to open up such students as much as possible, so they feel comfortable and their motivation to attend lectures and learn increases."*

- Differentiated teaching methods (considering individual student needs, providing choices in the learning process): learning materials, tasks tailored to students' abilities, and the opportunity for free choice (however, this experience is quite limited and often causes confusion among students).

*"One example is that during classroom activities, I provide information on the same topic in different forms. The assignments are also differentiated. I also give them choices, they have the right to choose. Should we discuss this today or not? Should we do it this way or that way?"*

*"This experience is limited. Such offers are new for many students, and now they are unsure of what to do, how to choose, what to pick, they get confused. This indicates that this culture is not yet established."*

*Figure 5: Integrating Student-Centered Learning (SCL) into Daily Practice*




Source: Author

**Advantages and Limitations**

During the interviews, the positive and negative aspects of SCL were discussed.

According to the results, the following main advantage of SCL was identified (see figure 6):

1. **Personal Development:** This primarily refers to the ability of self-expression — the university becomes a space where students grow not only professionally but also personally. In addition to acquiring professional knowledge, they develop the ability to express themselves clearly and present themselves with confidence and dignity, which in turn supports their career development.

*"You may be very good, even excellent, but still unable to present yourself properly. At the same time, you shouldn't overdo it either. That's why it's important to know how to present yourself — and you also need to have some knowledge about how to do it effectively."*

2. **Increased Motivation –** Not only for students but also for lecturers: The enthusiasm and interactive approaches of lecturers enhance student motivation and engagement. Lecturers also note that this approach boosts their own motivation, as teaching becomes less of a monologue and more of a dynamic discussion where students are involved in decision-making processes.
3. **Development of transferable skills** – This teaching method fosters the enhancement of students' analytical, creative, and research skills. In addition, it helps them learn how to think logically, construct arguments, and conduct in-depth analysis of various issues.

According to the majority of respondents, SCL does not have any significant drawbacks. However, two important aspects were identified that must be taken into account when implementing SCL:

1. **Exaggerated expectations of students –** students must understand the limits of their rights and responsibilities. It is important for students to realize that SCL does not imply limitless customization to suit their needs; rather, it provides them with opportunities to express themselves and actively participate. For all of this to work, there must be proper boundaries and responsibilities on the part of the students.

Some students may have excessively high demands, which could pose a risk of disrupting the internal processes of the university.

*"Unfortunately, they often misunderstand this concept. The term spread among students, and for them, student-centered learning means that if they call me at 3 a.m., I am obligated to answer and provide consultation and assistance for as long as needed, 24/7."*

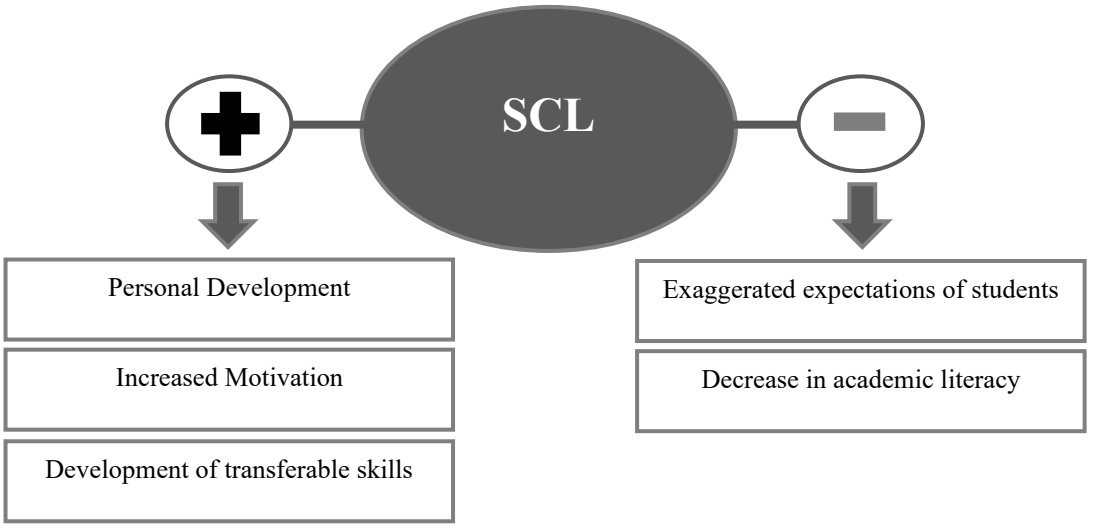
*"For example, there is an exam scheduled for a specific date, and student-centered learning would mean that I adjust the schedule and plan according to your interests. Let's say I have planned it this way. Then, one student out of a hundred says, 'This time doesn't work for me.' The response is, 'I simply don't want it, and you're obligated to accommodate me.' This is how many students misunderstand it; not a few, but quite a few."*

2. **Decrease in academic literacy -** This refers to the imbalance between freedom and responsibility. Sometimes students limit themselves to the information received in lectures and no longer seek additional material. While they engage in discussions, the opinions they express are often based on their own simple reasoning and are not supported by academic materials or professional knowledge. In this way, they try to succeed with less effort and study.

*"Often, when we tell students to express their opinions and engage in discussions, it ends up with them no longer reading the book, and when they talk about a topic, they speak in their own words, which leads to the other extreme."*

*"There is a need to maintain balance here. We tell them, yes, we give you the opportunity to express your opinion, and so on. But if I stop someone in the street, they will say the same thing you're saying. This risk is always present. When they feel freedom, they try to get by in class with what they heard, and not read the book. Balance is needed here."*

*Figure 6: Advantages and Limitations of Student-Centered Learning (SCL)*




Source: Author

**Skills Fostered by a Student-Centered Approach: Pathways to Labor Market Success**

Indeed, during the analysis of the positive aspects of SCL, the development of universal skills emerged as one of the key points. During the interviews, the following universal skills were identified as contributing to students' career success:

- **Critical thinking and analytical skills:** The interviews revealed that critical thinking is one of the most important skills students acquire. Students learn how to analyze events, assess alternatives, and draw conclusions.

*"Analytical skills, critical comparison of what is good and what is bad, and understanding what has been read."*

*"It is important when students embrace critical thinking and begin to reflect on it, applying it to their activities and environment in a critical way. In my opinion, this is the most important thing, because knowledge can be varied, and what we call knowledge is the volume of information."*

- **Communication skills (oral and written):** According to the interviews, one of the most significant challenges is the lack of communication skills. Through SCL, students develop both oral and written communication skills, which include presentation skills, business correspondence, and negotiation skills. Employers especially value students' ability to effectively present their knowledge and ideas.

*"I would highlight communication skills, which I believe are very important, and I try to develop this skill in my students."*

*"Communication is difficult for our students. It's a fact. Because, mostly, they take exams in writing, they write exams, and for some, all their activities are written. When are they supposed to learn to speak, articulate, and present? In organizations, every employer demands communication skills."*

*"They also struggle with this, which includes both written and verbal communication. In terms of verbal communication, it's about presenting oneself, showcasing the best side, managing relationships with others, and in written communication, it involves business correspondence, which they have developed quite weakly."*

- **Teamwork and collegiality:** In the process of SCL, students learn how to delegate tasks, manage conflicts, and maintain team motivation. Employers often note that this skill is less developed among students today, which is especially problematic in corporate environments.

*"First and foremost, I would highlight teamwork, the ability to work in a team, and a proper understanding of the concept of collegiality."*

*"Teamwork comes first because, as a rule, students struggle with working in teams, which involves task delegation, motivating team members, meeting deadlines, and managing conflicts within the team. This part is very important."*

- **Logical and well-reasoned argumentation –** The ability to form clear, logical, and evidence-based arguments is considered one of the most essential skills for students. Within the framework of SCL, students are given the opportunity to explore and apply principles of logical thinking, helping them articulate their ideas clearly and convincingly. This skill is particularly valued in contexts such as debates, academic writing, presentations, and professional communication. Strong argumentation and logical reasoning foster students' critical and independent thinking, ultimately enhancing their competitiveness both in academic environments and in the job market.

*"Communication skills and logical reasoning skills are very important. A person might talk, but talk nonsense."*

- **Creative thinking and innovativeness** are among the most essential skills that are particularly strengthened through SCL. This approach encourages students to think beyond conventional methods and to explore non-traditional, original approaches, which helps them generate new ideas and view existing problems from different perspectives. SCL provides space for experimentation, idea exchange, and free thinking, which ultimately fosters the ability to analyze problems from multiple angles and to find effective—often unique—solutions.

In conclusion, it can be said that as a result of SCL, students acquire critical thinking, communication skills, teamwork, logical reasoning, and creativity. All of these help them become competitive candidates in the job market. However, the majority of respondents agree that there is still a noticeable lack of universal skills among students today: "Despite some progress, students still lack the practical skills that would meet the current demands of the labor market."

**Challenges to Implementation**

As revealed in the interviews, SCL in Georgia is more advanced in private universities compared to public ones. However, the majority of respondents believe that this approach is not sufficiently developed nationwide. This raises the question: what are the main obstacles hindering this process, and what challenges need to be addressed?

While several obstacles were discussed earlier in the analysis, this section provides a summary of the main challenges identified during the interview process. The following key issues emerged:

- **Weak collaboration between the business sector and universities**: This was identified as the main challenge and was the most frequently mentioned issue during the interviews. Despite existing formal relationships, the implementation of practical cooperation remains a significant challenge.

*"As long as there is such a large gap between the business and academic sectors, student-centered learning remains somewhat superficial."*

*"Exactly, as long as this is not the case, how can we be student-centered if we don't equip students with the skills that the labor market demands? The ultimate result is that the*

*student enters the labor market, has to work, and become a successful professional. If we can't ensure this, student-centered learning will no longer be effective."*

*"The university is no longer what it was in the Middle Ages, when they taught philosophy and mathematics and you became a thinker. This is not the purpose of higher education today. We are not focused on shaping elite thinkers, but rather on employers and employees. They need to know how to hire and how to be hired, they need to be knowledgeable about specific issues. Everything is heading in this direction."*

- **Academic culture and traditional approaches:** Several respondents emphasized that traditional, lecturer-centered approaches continue to dominate within Georgian universities. Although some universities have begun to prioritize student-centered learning, the conventional teaching model remains deeply rooted, hindering the adoption of innovative practices. This issue is especially evident in state institutions, where established academic traditions and rigid organizational structures often resist change. As a result, the transition toward more dynamic, interactive, and student-oriented teaching methods is progressing slowly, revealing a persistent gap between modern educational principles and existing pedagogical practices.
- **Lack of infrastructure and resources, especially in public universities:** The lack of technological equipment remains a significant challenge in many universities. This problem is particularly noticeable in public universities. The majority of respondents believe that the infrastructure of classrooms in universities does not always meet modern educational demands. Notably, issues such as inadequate classroom equipment and outdated technology are frequently highlighted as barriers to effective teaching and learning.
- **Student passivity and lack of motivation:** Respondents noted that not all students are ready for active learning. Some students prefer a simpler, less demanding learning process, with the primary goal being to eventually obtain a diploma.
- **Differences in students' preparation levels:** The knowledge acquired in school often does not meet the university's requirements, and many students come to university with insufficient knowledge and skills. The majority of respondents agree that *"until prepared students come from school, we will not have the opportunity to fully implement student-centered learning."*

- **Lecturer overload and lack of retraining:** The shortage of time and resources for academic staff is a key issue, as most lecturers work at multiple universities simultaneously, leaving them with limited time for self-development activities. Additionally, universities rarely offer training sessions or courses to address this need.

### *3.5 Limitations and Delimitations*

Delimitations:

- The study intentionally included only 12 academic and administrative staff from Georgian higher education institutions. This relatively small number was chosen to allow in-depth, phenomenological exploration of lived experiences and institutional realities rather than broad generalisation.
- Participants were limited to mid- and senior-level academic staff who have direct involvement in curriculum design, teaching, or quality assurance processes. Junior lecturers without syllabus responsibility were excluded.
- The sample was restricted to institutions in Tbilisi and two regional centres, deliberately excluding smaller regional universities and colleges in order to focus on the institutions that educate the majority of the country's students and set national pedagogical trends.

Limitations:

- Small sample size and potential selection bias: Although theoretical saturation was reached and a balanced public/private mix was achieved, the voices of particularly innovative public-university lecturers may be under-represented.
- Social desirability and institutional pressure: Some interviewees may have felt pressure to present their institution in a more positive light, potentially softening criticism of superficial SCL implementation.
- Researcher positionality: The researcher is a former lecturer and current doctoral candidate within the Georgian higher education system. Insider status may have influenced both access to participants and the interpretation of responses.
- Lack of direct classroom observation: Conclusions about actual teaching practices rely exclusively on participants' self-reported accounts rather than independent

observation of classroom reality. This raises the possibility that the reported public–private divide is partially exaggerated.

- Single-interview format: Each participant was interviewed only once. Follow-up interviews or focus groups could have provided deeper exploration of emerging contradictions and increased trustworthiness.

### *3.6 Conclusion*

The qualitative findings paint a nuanced yet sobering picture of SCL in Georgian higher education twenty years after the country's accession to the Bologna Process. While all interviewees unequivocally endorse SCL as a desirable and necessary pedagogical shift, its everyday reality remains fragmented and heavily institution-dependent.

The most consistent and striking theme emerging from the participants' lived experiences is the sharp public–private divide. In private universities – particularly newer, market-oriented ones – SCL is considerably more authentic, routine, and supported by smaller classes, flexible curricula, better infrastructure, and stronger faculty development. In contrast, most public institutions continue to treat SCL as a largely declarative obligation, rather than genuine pedagogical conviction. Large enrolments, bureaucratic inertia, outdated facilities, and extreme lecturer workload leave little room for meaningful individualisation or interactive teaching.

Academic staff overwhelmingly agree on the core principles of SCL: personalisation, active student engagement, practical skill development, the lecturer's role as facilitator, and the crucial importance of modern infrastructure and technology. Yet the translation of these principles into daily practice varies dramatically across institutional type. Where conditions are favourable, SCL is experienced as motivating for both students and lecturers, fostering transferable skills and personal growth. Where systemic barriers dominate, it risks becoming yet another box-ticking exercise.

These findings carry clear implications for policy and institutional reform. Authentic SCL cannot be mandated through syllabi and learning outcomes alone; it requires concrete changes in class sizes, lecturer workload, professional development opportunities, administrative efficiency, and material resources – changes that are currently far more feasible in the private sector. Until public universities receive comparable structural

support, the rhetorical commitment to student-centredness will continue to outpace classroom reality.

Ultimately, the participants' voices reveal that SCL in Georgia is not rejected – it is simply waiting for the institutional conditions that would allow lecturers to practise what they sincerely believe in. Bridging the public–private gap and creating those conditions represents the key challenge for the next stage of Bologna reform in the Georgian context.

# CHAPTER 4 Quantitative study

## *4.1. Methodology*

### *4.1.1 Introduction*

This chapter offers an in-depth account of the methodological framework adopted for the study. It presents the research design, methodological foundations, measurement processes, sampling methods, data collection strategies, and analytical techniques applied throughout the investigation. The chapter further elaborates on the specific stages of the empirical research and provides justification for the chosen analytical methods. Additionally, it describes the measures taken to ensure the reliability and validity of the findings. In essence, this chapter outlines the full process of conducting the primary research.

### *4.1.2 Research objectives*

#### *4.1.2.1 Primary research objective*

The main purpose of the quantitative study is to examine the impact of SCL on the career success of graduates 20 years after Georgia's accession to the Bologna Process.

#### *4.1.2.2 Secondary research objective*

The secondary research objective is to empirically test the conceptual framework developed on the basis of the literature review.

This study's purpose is established through its primary and secondary research objectives. Establishing these objectives represents the initial step in the research process, as they provide the targets to be achieved throughout the study (Zikmund, Babin, Carr, & Griffin, 2013). The subsequent sections explain the research process employed to accomplish these objectives.

Based on the conceptual framework, three hypotheses were formulated corresponding to the proposed relationships among the variables.

**H1: SCL → Individual Competencies**

SCL have a positive effect on Individual Competencies.

**H2: Academic Self-efficacy → Individual Competencies**

Academic Self-efficacy positively affects Individual Competencies.

**H3: Individual Competencies → Career Success**

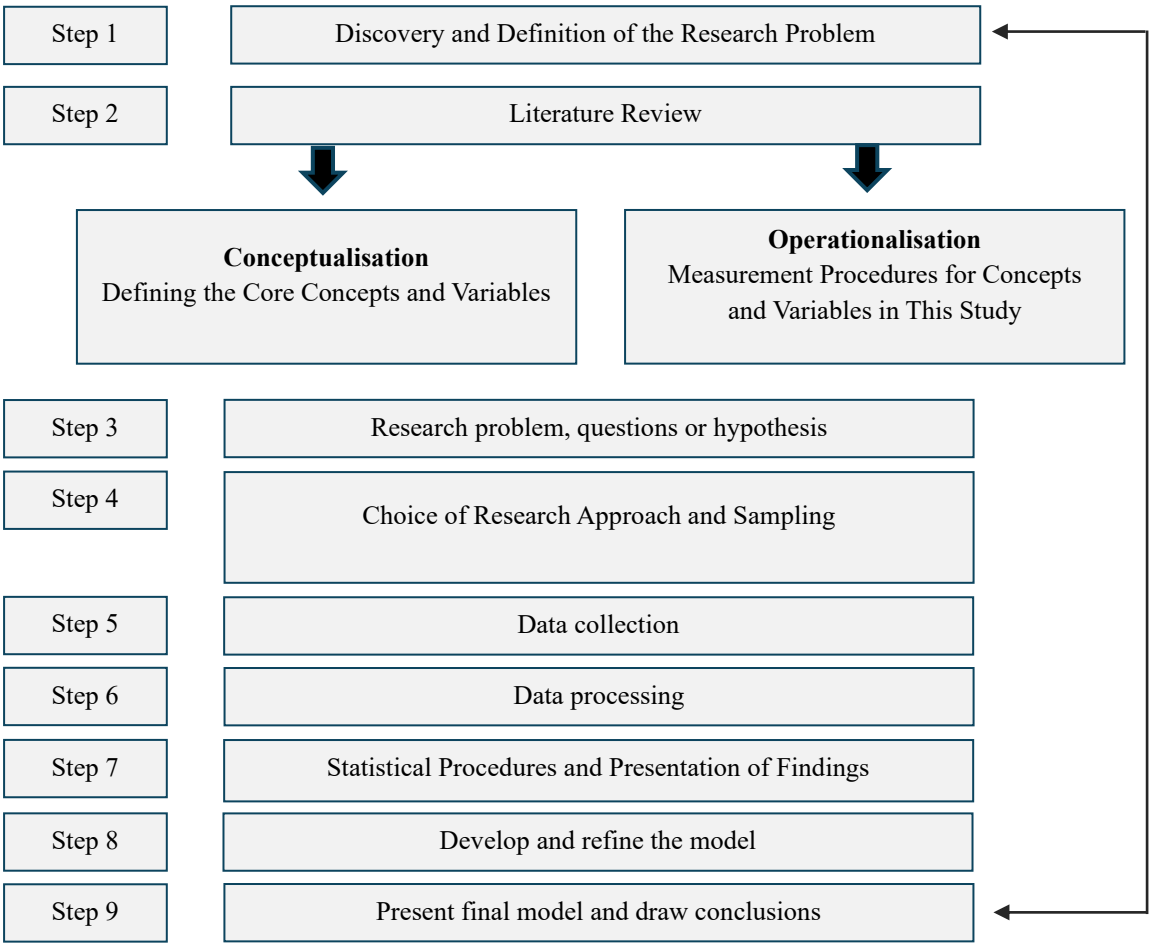
Individual Competencies positively affect Career Success.

### *4.1.3 Research process*

Research must be guided by a clear purpose. Accordingly, the research problem addressed in this study was introduced in Chapter 1. The research process involves a sequence of clearly defined steps that guide the conduct of a study (Cooper & Schindler, 2014). Although these steps are typically presented in a linear order, some may overlap, and certain steps may need to be revisited multiple times. Each time a step is revisited, the researcher reflects on the issue at hand and may refine or redefine the approach (Saunders, Lewis, & Thornhill, 2019).

Figure 7 illustrates the research process followed in this study.

*Figure 7: The research process*




Source: Adapted from (Babbie, 2016; Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017; Van Huyssteen, 2022). The steps illustrated in the figure above are described in detail below.

Figure 7 outlines the research process, consisting of the steps listed below:

- In Step 1, the research process began with problem identification and definition, as described in Chapter 1. During this step, the researcher highlighted the gap in knowledge regarding the implementation of SCL and its impact on graduates' career success. While higher education is increasingly recognized as a key factor in individual success, economic growth, and social mobility (Billingham, 2018; Fülöp, et al., 2022), research indicates that the Georgian higher education system still struggles to fully prepare graduates with the competencies required for the dynamic labor market (Bochorishvili & Peranizde, 2020; Amashukeli, Lezhava, & Chitashvili, 2022). This research problem is further emphasized by limited

empirical evidence on SCL practices in Georgia. Although studies have examined graduates' competencies and self-perceptions (Amashukeli, Lezhava, & Chitashvili, 2022) and identified attempts to apply SCL approaches (Khabeishvili, 2023), there remains a lack of in-depth understanding regarding functional SCL practices and their effectiveness in enhancing career-related competencies. Drawing from the research problem, the primary and secondary research objectives were developed and clearly articulated. Addressing the problem contributes to understanding the effectiveness of SCL in higher education and provides insights for improving graduate preparedness and employability.

- Step 2 involved a **critical review of the relevant literature**, as presented in Chapter 3. The literature review offers a structured argument in support of the research topic, grounded in credible evidence from prior studies.. In this study, the literature review also encompassed two key aspects: conceptualization and operationalization (Babbie, 2021). During this step, the researcher critically examined existing academic studies and reports to build a robust argument supporting the investigation of SCL and its impact on graduates' career success in Georgian higher education. Conceptualization was achieved by exploring core concepts such as SCL approaches, individual competencies, and career success. The operationalisation process involved constructing a conceptual model that illustrates the interrelationships between the variables and defines their measurement within the study.
- Step 3 involved refining the research problem, **selecting a specific research problem, question or hypotheses** (see Section 1.5). Although the research problem identified during Step 1 laid a sound foundation, it was subsequently sharpened and refined based on insights gained from the comprehensive literature review. As the nature of the research problem dictates the methodological approach, the study required statistical analysis to test the conceptual model. Consequently, a quantitative survey was selected as the most suitable method for data collection and analysis.
- In Step 4, the research design was **planned and selected**. This step involved the selection of research methods, identification of the target population, and determination of the sampling techniques to be applied. For the purposes of this study, a quantitative survey method was selected to examine the relationship

between SCL implementation and graduates' career success. The target population consisted of individuals who had completed any level of higher education (Bachelor's, Master's, or Doctoral) from 2010 onwards, as well as those currently enrolled as Master's or Doctoral students in Georgian higher education institutions. The snowball sampling method was applied to reach respondents through referrals. Primary data were collected using an online self-administered questionnaire, allowing efficient and broad data collection from the selected population. Given that the National Centre for Educational Quality Enhancement (NCEQE) was established in 2010 to consolidate external quality assurance across all levels of education in Georgia (Jibladze & Glonti, 2020), it was deemed appropriate to focus the survey on graduates from 2010 onwards. This ensures that the respondents experienced higher education under the current quality assurance framework, making their insights relevant for evaluating the implementation of Student-Centered Learning and its impact on career success.

- Step 5 involves the process of **data collection** (see Section 4.1.9).
- Step 6 involves **data processing** (see Section 4.1.10).
- Step 7 involves the **statistical data analysis and presentation of results** (see Section 4.2 and 4.3).
- Step 8 pertains to the **model development process, including its refinement**, with the approach used to establish the final model (see Section 4.2 and 4.3).
- Step 9 represents the final stage of the research process, which involves **presenting the completed model and drawing conclusions** based on the study's findings (see Chapter 4). This step consolidates the results obtained from data collection, analysis, and model refinement, providing a comprehensive overview of the relationships examined and the implications for SCL implementation and graduates' career success.

Following this, the research design employed in the current study is discussed in detail.

### *4.1.4 Research design*

The research design of a study serves as a structured plan outlining how the research objectives will be achieved. It defines the methods and procedures for data collection and analysis (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017) and includes the strategy

for accessing information, the units of analysis, and the variables and measurements used to address the research questions and objectives (Ang, 2021). In essence, a research design acts as a blueprint for systematically collecting, measuring, and analyzing data (Cooper & Schindler, 2014).

The research design can be described as follows (Van Huyssteen, 2022):

- A structured plan of action with a defined timeline.
- A plan grounded in the research question(s) and objectives.
- A strategy for accessing relevant sources and types of information.
- A framework for specifying the relationships among the study variables.
- A procedural outline detailing each step of the primary research activities.

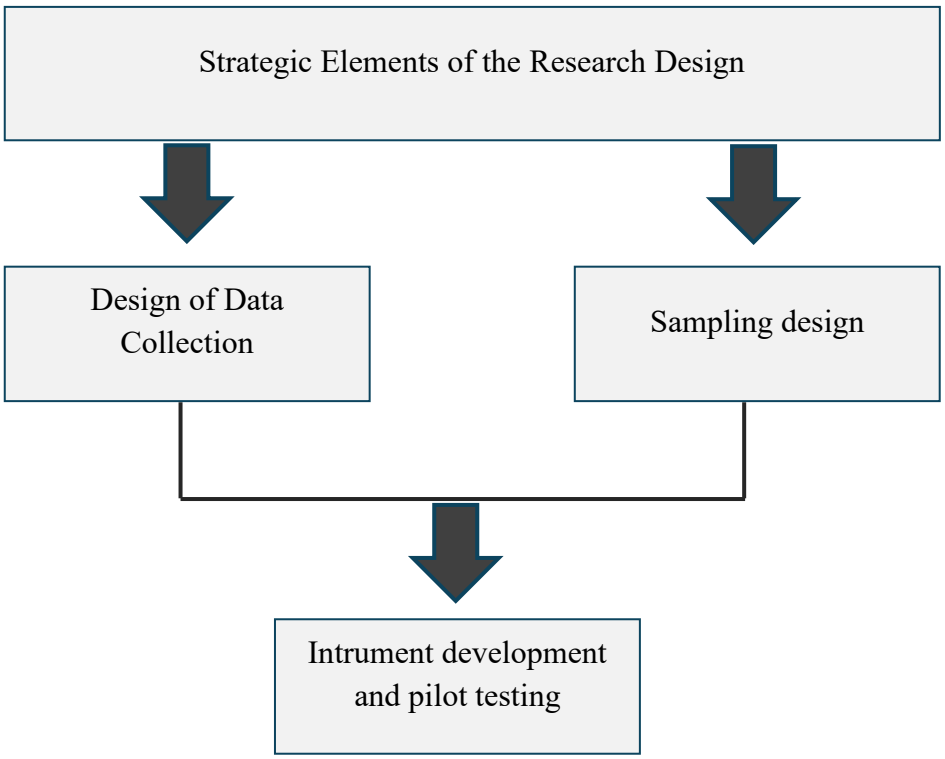
In addition to the core elements, a research design should also reflect the methodological decisions made throughout the study. This includes considerations such as:

- How causal relationships between variables are expressed and whether the findings can be generalized to a larger or different population;
- How specific behaviours are to be explained and interpreted;
- How the interconnections and dynamics of social phenomena are understood and analyzed (Bryman, 2016).

The research design fulfils two essential purposes: it maps out the procedures and steps taken to conduct the research, and it assures that these procedures are rigorous enough to provide reliable and valid answers to the research questions (Kumar R. , 2019). It can be argued that there is no single optimal research design, as each study is unique. Consequently, every research study requires a design tailored to employ the most appropriate methods and procedures for collecting the specific data needed (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). A well-developed research design is crucial for establishing criteria to evaluate the study (Mårtenssona, Fors, Wallinc, Zander, & Nilsson, 2016) and ensures that the researcher can reach valid findings, make accurate comparisons, and draw reliable conclusions (Kumar R. , 2019).

The research design encompasses several core elements, including the chosen methodology, methods of data collection, techniques for data analysis, and the development of measurement instruments (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). The components of the research design are illustrated in Figure 8.

*Figure 8: The Research Design: Core Components*




Source: Adapted from (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019; Van Huyssteen, 2022).

### *4.1.5 Research terminology*

This section provides a concise overview of the key terminology related to the research process employed in the present study and throughout this thesis.

#### *4.1.5.1 Research paradigm*

The term paradigm originates from the Greek word paradigma, meaning "pattern" (Killam, 2013). A paradigm represents a perspective or worldview, shaped by specific philosophical assumptions that guide a researcher's thinking and actions (Mertens, 2019). The three core philosophical assumptions that define a research paradigm are ontology, epistemology, and axiology (Chilisa, 2019). Ontology addresses the nature of social reality, explaining how individuals relate to each other within societies and make sense of the world around them (Edelheim, 2015; Raghvan, 2021). Epistemology, the study of knowledge, concerns the ways in which individuals determine what is considered true or valid (Saunders, Lewis, & Thornhill, 2019). Axiology relates to values and ethics, highlighting the importance of ethical considerations in the planning and execution of research (Mertens, 2019).

In summary, a research paradigm provides a framework for understanding a worldview informed by these three philosophical assumptions—ontology, epistemology, and axiology—which are further discussed in Section 4.1.6.1.

#### *4.1.5.2 Deduction and induction*

Two primary research approaches can be adopted in a study: deduction and induction. The deductive approach involves formulating hypotheses based on existing theory and designing a research strategy to test them (Wilson, 2014). Essentially, deduction focuses on verifying or testing a theory rather than developing a new one (Babbie, The practice of social research. 14th ed., 2016). The key steps in a deductive approach include: drawing on existing theoretical knowledge to develop hypotheses, collecting data on the concepts or variables within the hypotheses, and confirming or rejecting the hypotheses based on empirical findings (Bryman, 2016). Surveys are commonly associated with the deductive approach, which aligns with quantitative research (Saunders, Lewis, & Thornhill, 2019; Bryman, 2016). In this approach, the researcher moves from theory to data. In contrast, the inductive approach works from data to theory, generating conclusions that explain observed facts (Wilson, 2014; Cooper & Schindler, 2014). Induction is typically linked to qualitative research (Wilson, 2014; Bryman, 2016). Considering the objectives of this study, a deductive approach was adopted.

#### *4.1.5.3 Primary and secondary data in the empirical research design*

The term empirical research refers to conducting systematic observations to gather evidence (Patten, 2017). More specifically, it involves the collection and analysis of primary data, typically to test a hypothesis (Cooper & Schindler, 2014; Patten, 2017). Empirical research is also used to examine causal relationships, with findings often expressed as generalisations, laws, or propositions (Rosenberg, 2018). In general, empirical research entails collecting and analysing primary and/or secondary data to investigate effects, causes, or hypotheses (Van Huyssteen, 2022). In the present study, empirical research was conducted using primary data. Primary data refer to information collected for the first time by the researcher to address specific research objectives (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019).

Often described as “fresh data” (Bradley, 2013; Xian & Meng-Lewis, 2018), primary data can be qualitative or quantitative (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). This study involved the collection of primary quantitative data, which are presented and analyzed in the following sections. Secondary data are data collected by others for purposes other than the current research (Zikmund, D’Allesandro, Lowe, Winzar, & Babin, 2017). This data may be quantitative or qualitative (Saunders, Lewis, & Thornhill, 2019) and involves at least one level of interpretation between the original collection and its recording in a study (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). In the present study, secondary data were not collected.

#### *4.1.5.4 Variables*

A variable can be defined as an element or factor under investigation (Williamson & Johanson, 2018). More comprehensively, a variable is “a symbol of an act, trait, characteristic, or attribute that can be measured and assigned a value (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). In other words, to test a hypothesis or a conceptual model, it is essential to identify the specific variables that will be measured or examined (Stokes & Wall, 2014).

In research, it is common to distinguish between different types of variables, particularly those included in survey questionnaires (Van Huyssteen, 2022):

- Dichotomous variables have only two possible values and typically indicate the presence or absence of a characteristic. They can be nominal or ordinal. Examples include yes/no questions or gender when only two options are available.
- Continuous variables are measured on a scale and may include decimal values. Examples include age and income.
- Nominal variables cannot be expressed numerically or ranked. Examples include gender, geographic location, and occupation.
- Ordinal variables are those that can be ranked or ordered according to magnitude, although the differences between values are not necessarily equal. A common example is a five-point Likert scale.
- Interval variables consist of categories or values that have equal distances between them. For instance, Celsius temperature is an interval variable because zero degrees does not indicate the absence of temperature, but rather represents a value like any

other on the scale. For example, the difference between 13°C and 0°C is the same as between 25°C and 12°C.

- Ratio variables also have equal intervals, but unlike interval variables, they possess an absolute zero point. For example, if a company earns R50,000 one year and R100,000 the next, profits have doubled. If profits remain at R50,000, the absolute zero indicates no increase (Cooper & Schindler, 2014; Bryman, 2016; Saunders, Lewis, & Thornhill, 2019).

Variables can also be classified as dependent and independent (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). A dependent variable is the outcome or phenomenon that the researcher aims to explain or predict and represents the primary focus of the study (Sekaran & Bougie, 2020). Independent variables, on the other hand, are measurable characteristics that can theoretically influence the dependent variable, either positively or negatively. Empirically, they may help explain variations without implying direct causation (Babbie, 2021). Dependent variables respond to changes in independent variables, whereas independent variables generally cause changes in dependent variables (Saunders, Lewis, & Thornhill, 2019). The specific variables applied in this study are detailed in Table 2, presented later in this chapter.

### *4.1.6 Research design overview*

Various descriptors can be employed to define the specific research design of a study by considering its different design dimensions (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). The eight key dimensions of the research design are presented in Table 1.

*Table 1: Key Features of the Research Design*

| **Category** | **Options** |
|---|---|
| Research paradigm | Post-positivism<br>Constructivism<br>Pragmatism<br>Realism<br>Postmodernism |
| Level of Development of the Research Question | Exploratory research questions<br>Descriptive research questions<br>Causal research questions |
| The method of data collection | Monitoring<br>Communication study |

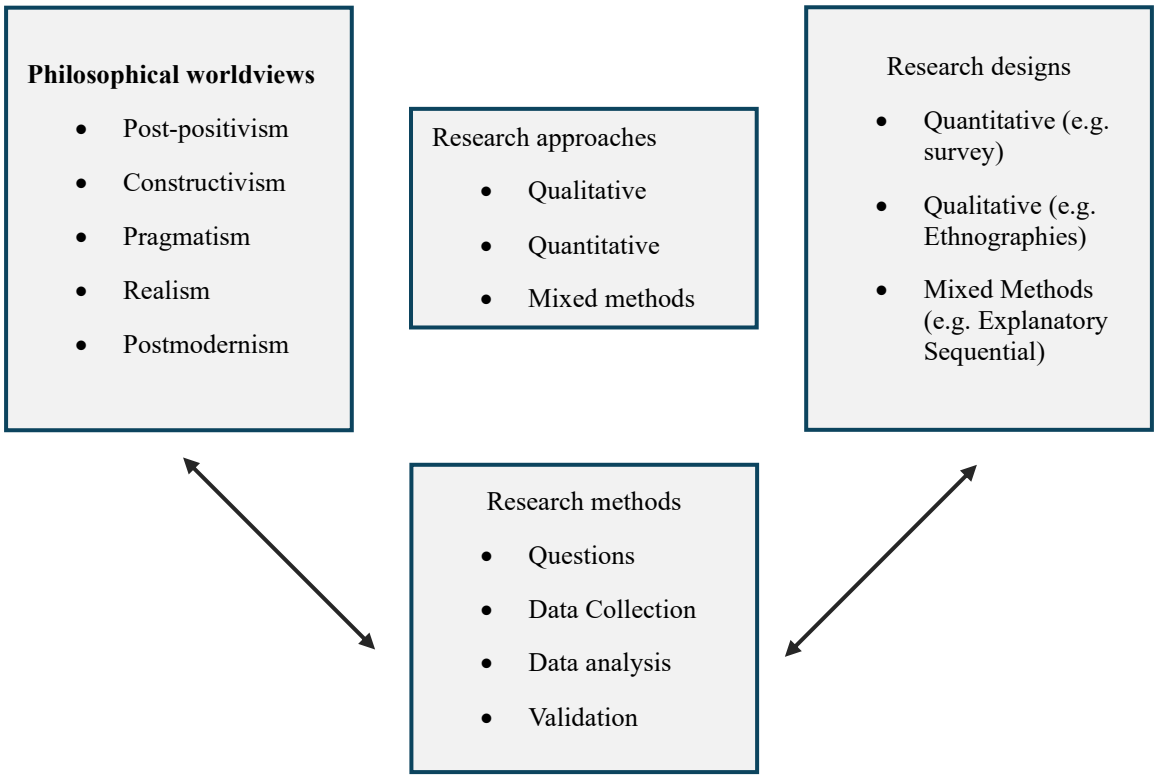
| | |
|---|---|
| Extent of Researcher Manipulation / Control of Variables | Experimental<br>Ex Post Facto Design |
| Research Purpose | Reporting<br>Descriptive study<br>Causal<br>Explanatory<br>Predictive |
| The time dimension | Cross-sectional study<br>Longitudinal |
| Research Scope | Case study<br>Statistical study |
| The research environment | Field setting<br>Laboratory setting<br>Simulation |

Source: Adapted from (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019; Sekaran & Bougie, 2016; Van Huyssteen, 2022). Each of these descriptors is discussed in detail in the following sections.

#### *4.1.6.1 Identification of a research paradigm*

This topic was briefly introduced above. The foundation of the research design begins with the identification of a research paradigm (Collis & Hussey, 2021). Research is shaped by the interrelationship between the research paradigm, research design, and research method, as illustrated in Figure 9. In this section, only the research paradigm (also referred to as the philosophical worldview) is discussed, while the remaining elements are addressed later in the chapter.

*Figure 9: Connection Between Research Paradigm, Design, and Methods*




Source: Adapted from (Creswell J. , 2014; Creswell & Creswell, 2017; Saunders, Lewis, & Thornhill, 2019; Van Huyssteen, 2022).

The term paradigm refers to a set of assumptions or a shared belief system within a scientific community (Cooper D. , 2018). A research paradigm serves as a framework guiding how research should be conducted, shaped by the researcher's philosophical assumptions about the nature of reality and knowledge (Collis & Hussey, 2021). It can also be described as a fundamental model or reference framework that researchers use to structure observations and reasoning (Babbie, The practice of social research. 14th ed.,

2016). Essentially, a paradigm functions as the lens through which research is perceived and executed (Leavy, 2017). In other words, it reflects the researcher's worldview, often referred to as a philosophical worldview (Creswell J. , 2014; Creswell & Creswell, 2017). The primary research paradigms are briefly outlined below.

**Post-positivism**

The post-positivism/positivism philosophical paradigm has its roots in the natural sciences and emphasizes an objective, structured, and measurable reality (Leavy, 2017). Post-positivists adopt a deterministic perspective, assuming that specific causes lead to predictable outcomes (Creswell J. , 2014) (Creswell & Creswell, 2017). The current study adopts a post-positivist paradigm, as it aims to identify and evaluate the factors that influence outcomes through testing a conceptual model. This paradigm is commonly associated with quantitative research (Creswell J. , 2014; Collis & Hussey, 2021).

The positivist approach is guided by several key principles. According to Bell, Bryman, and Harley (2019), only phenomena that can be observed through the senses are regarded as valid sources of knowledge. The main function of theory within this framework is to generate hypotheses that can be empirically tested, meaning that quantitative research typically begins with theory testing. Knowledge is gained through the collection of factual evidence, which then serves as the foundation for formulating generalizable propositions. Furthermore, scientific inquiry should be conducted in a value-free manner to ensure that research methods and conclusions remain unbiased. Finally, a clear distinction must be made between scientific and normative statements, as normative claims cannot be verified through sensory observation; therefore, only scientifically verifiable statements should be formulated (Bell, Bryman, & Harley, 2019). Finally, according to the positivist paradigm, the primary purpose of research is to establish and validate theories through empirical testing. In line with this, the current study employed a positivist approach to test a conceptual model (theory) (Van Huyssteen, 2022).

**Constructivism**

The constructivist/interpretivist approach is predominantly applied in qualitative research (Creswell J. , 2014; Gray, 2020). This paradigm posits that individuals create multiple realities that emerge within the context of social interactions and are shaped by subjective meanings (Roller & Lavrakas, 2015). Constructivism emphasises understanding the

"worldview of experiences as lived and interpreted by social actors" (Klenke, 2016). Researchers adopting a constructivist approach generally acknowledge that the perspective should not be taken to an absolute extreme; instead, they often explore whether an underlying truth exists within social interactions (Pasian, 2015). Constructivism posits that social beliefs and categories are not only created through interaction but are continually reshaped over time (Bryman, 2016). Research conducted from a constructivist perspective typically employs open-ended interviews, observations, and narrative sources such as diaries, in contrast to post-positivist studies that rely on structured interviews and questionnaires (Gliner, Morgan, & Leech, 2017).

**Pragmatism**

The pragmatism paradigm involves integrating methods, techniques, and procedures from both quantitative and qualitative research, providing a practical and applied approach oriented toward action (Gray, 2020; Klenke, 2016). Researchers operating within this paradigm usually direct their attention to investigating the 'what' (the nature/content) and 'how' (the processes/mechanisms) of the research problem (Creswell J. , 2014; Creswell & Creswell, 2017). Pragmatism accepts that no single approach is sufficient for studying and understanding the social world; therefore, it emphasizes the importance of adopting a variety of research methods (Saunders, Lewis, & Thornhill, 2019).

**Realism**

Realism is based on the idea that reality exists independently of human perception, meaning that objects have an existence separate from the mind (Sekaran & Bougie, 2020). Research subjects, such as culture, organizations, and corporate planning, exist and operate independently of the observer. Consequently, researchers adopting this approach can systematically study these phenomena as if they were natural occurrences (Gray, 2020).

The realist paradigm encompasses two fundamental types: empirical realism (frequently referred to as direct realism) and critical realism (Bryman, 2016). Empirical realism posits that reality can be accurately perceived and understood through appropriate research methods (Bell, Bryman, & Harley, 2019). In other words, direct realists trust that their sensory experiences provide a true representation of the world (Saunders, Lewis, & Thornhill, 2019). Critical realism, in contrast, posits that what researchers perceive are

merely sensations or representations of real-world objects, not the objects themselves (Saunders, Lewis, & Thornhill, 2019).

**Postmodernism**

Postmodernism emphasizes the social, historical, and political contexts in which knowledge, individuals, and social relationships are constructed (Mora, Gelman, Steenkamp, & Raisinghani, 2012).This approach is predominantly used in the arts and social sciences. It is founded on a broad coalition of intellectual perspectives that collectively challenge and critique fundamental assumptions in scientific research (INtgrty., 2016). Research conducted from a postmodernist perspective typically employs deconstructive methods, focusing on in-depth analyses of anomalies, silences, and gaps. The data collected in such studies are usually qualitative (Saunders, Lewis, & Thornhill, 2019).

#### *4.1.6.2 Clarity and structure of the research questions*

Research questions are the central queries that a study seeks to answer and typically form the foundation for the research objectives (Saunders, Lewis, & Thornhill, 2019). Research questions can generally be classified into three main types: exploratory, descriptive, and causal (Sekaran & Bougie, 2020).

Exploratory research questions, which are most commonly employed in qualitative studies aim to gain a deeper understanding of a phenomenon and often serve to generate initial hypotheses or raise further questions to guide future research (Sekaran & Bougie, 2020). This type of research is generally unstructured and seeks to identify future research directions (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). Additionally, exploratory research helps clarify ambiguous situations or uncover ideas that may represent potential business opportunities (Babin & Zikmund, 2016; Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

The two more highly structured categories of research questions are those that are descriptive in nature and those that are causal. Studies typically begin with clearly defined hypotheses or research questions and specify detailed procedures along with data sources (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019).

Descriptive research questions focus on gathering data that highlight characteristics and can employ either quantitative or qualitative methods (Sekaran & Bougie, 2020). This form of research seeks to describe objects, individuals, groups, organisations, or environments, and it is frequently applied in identifying and defining market segments (Babin & Zikmund, 2016; Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). Causal research questions, on the other hand, aim to identify factors that contribute to or directly cause a particular issue (Sekaran & Bougie, 2020).

In the context of the present quantitative study, the research questions are descriptive in nature, as the objective is to gain an understanding of how SCL influences career success. More specifically, the study seeks to identify how different dimensions of SCL shape students' skills, employability, and long-term career outcomes. The subsequent section presents the data-collection method selected for this research

#### *4.1.6.3 Data collection method*

Data can be collected either through monitoring or communication. Monitoring refers to obtaining data through direct observation, while communication involves asking respondents questions and recording their answers (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). This study addressed its research questions and objectives through a communicative approach, entailing direct engagement with participants for the collection and recording of their responses. More specifically, an online survey was utilized, with participants invited to fill out a self-administered electronic questionnaire (see Appendix). This approach was deemed the most suitable for capturing participants' views on Student-Centered Learning (SCL) and its influence on career success. The researcher's degree of control over the study variables is addressed in the subsequent section.

#### *4.1.6.4 Degree of researcher control in the study*

The extent to which a researcher can manipulate variables is determined by the type of research design adopted — specifically, whether it is experimental or ex post facto in nature (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). Experimental research designs are built around testable predictions (hypotheses) instead of general research questions (Saunders, Lewis, & Thornhill, 2019), where the researcher attempts to control

or manipulate variables to examine causal effects (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). In contrast, the ex post facto design does not involve manipulation, as the researcher has no control over the variables (Sekaran & Bougie, 2020). In this approach, the researcher can only report on observed relationships and patterns as they exist (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019).

In the current study, no attempt was made to manipulate or control the variables. Instead, the researcher reported on the existing relationship between SCL and career success, based on participants' perceptions and experiences. Consequently, an ex post facto research design was adopted, reinforced by rigorous statistical analysis of the results and carefully implemented sampling techniques to reduce the risk of bias.

The next section discusses the purpose of the study.

#### *4.1.6.5 The purpose of the study*

Any study should have a clear purpose, and the purpose can differ according to whether it is reporting, descriptive, causal-explanatory, or causal-predictive in nature (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). A reporting study aims to summarize data in order to provide a better understanding or enable statistical comparisons. A descriptive study focuses on identifying who, what, where, when, or how much. Causal-explanatory studies, in turn, seek to determine how one variable influences changes in another, while causal-predictive studies attempt to forecast the effect of one variable on another by manipulating conditions and holding other factors constant (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019).

In the present study, the purpose is primarily causal-explanatory, as it aims to investigate how SCL affects career success. By examining respondents' perceptions and experiences, the study seeks to identify whether and how SCL contributes to enhancing career outcomes.

#### *4.1.6.6 The dimension of time*

The time dimension of a study depends on whether it is cross-sectional or longitudinal in nature (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). A cross-sectional study collects data once during a defined period, such as days, weeks, or months (Sekaran & Bougie, 2020). By contrast, a longitudinal study involves collecting data two or more

times over an extended period, allowing for the observation of changes and developments (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

The present study adopted a cross-sectional design, as data were collected only once to examine how SCL affects career success.

The following section discusses the topical scope of this study.

#### *4.1.6.7 The topical scope*

The scope of a study can be statistical in nature, and even within a case study design, researchers may employ statistical analysis. A statistical study aims to identify the characteristics of a population and to draw conclusions based on a representative sample. Moreover, hypotheses are subjected to empirical testing, and generalisations are made from the findings, contingent upon the degree of sample representativeness and the robustness of the research design's validity (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). Case study approaches, on the other hand, focus on gathering in-depth data about a specific object, phenomenon, or activity (Sekaran & Bougie, 2020). Although case studies are often more qualitative in nature, this is not always the case, as they aim to identify key themes and patterns (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

The present study is delimited in topical scope to a statistical investigation, with the primary aim of examining the features and relationships between SCL practices and career success outcomes among university graduates.

The following section addresses the research environment in which the study was conducted.

#### *4.1.6.8 The research environment*

Research can be conducted either in contrived (artificial) or non-contrived (natural) settings. A study carried out in a non-contrived setting is typically referred to as a field study, as the researcher collects data within the natural environment in which respondents normally function (Sekaran & Bougie, 2020). In contrast, research conducted in a laboratory setting is usually artificial or staged, with manipulated conditions. Similarly, simulations may also be employed to replicate the dynamics of a system or process (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019).

This research was conducted in a real-world field environment, without any artificial manipulation or simulation of variables or conditions. The next section presents the research approach adopted in this study.

### *4.1.7 Research approach: Quantitative research*

As previously discussed, the research paradigm, design, and methods collectively determine the overall research approach. The research approach outlines the plan and procedures of a study, specifying the steps as well as the detailed methods of data collection, analysis, and interpretation (Creswell J. , 2014; Creswell & Creswell, 2017). In general, three main approaches can be applied: qualitative, quantitative, or a mixed methods approach. Each approach differs in terms of its underlying assumptions, techniques, and objectives.

*Table 2: Key Characteristics and Interrelationships of the Three Main Research Approaches*

| Approaches | Qualitative | Quantitative | Mixed method |
|---|---|---|---|
| **Philosophy** | Constructivist perspective on knowledge | Post-positivist perspective on knowledge | Pragmatic or critical realist perspective on knowledge |
| **Methodological Features** | • Inductive reasoning<br>• Open-ended questions<br>• Flexible and evolving procedures<br>• Textual or visual data sources<br>• Mainly non-probability sampling techniques | • Deductive reasoning<br>• Closed-ended questions<br>• Pre-planned and structured procedures<br>• Numerical data sources<br>• Probability or non-probability sampling possible<br>• Statistical methods for data analysis | • Combination of inductive and deductive reasoning<br>• Mix of open- and closed-ended questions<br>• Blend of flexible and structured procedures<br>• Collection of both qualitative and quantitative data<br>• Probability or non-probability sampling possible |
| **Strategies** | • Wide variety of strategies available<br>• Each strategy has its own distinct emphasis<br>• Common examples include: action research, case study research, ethnography, grounded theory, and narrative inquiry | • Focuses on exploring relationships between variables<br>• Primary strategies: experimental research and survey research (using questionnaires, structured interviews, or structured observation) | • Collects both qualitative and quantitative data<br>• Provides a clear rationale for integrating methods<br>• Merges the two data types at different stages of the research<br>• Draws on strategies from both qualitative and quantitative traditions |

Source: (Saunders, Lewis, & Thornhill, 2019)

Table 2 above offers an overview of the core relationships linking the three major research approaches. The following sections will focus only on the quantitative method, as the qualitative method has already been addressed in the qualitative research section. The mixed-method approach combines both qualitative and quantitative methods and will not be discussed separately in this study.

Quantitative research is an approach used to collect data that is numerical in nature (Saunders, Lewis, & Thornhill, 2019). This approach is suitable when researchers aim to test hypotheses or address specific research questions, as it provides the information needed to determine a course of action (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). Additionally, quantitative research seeks to verify theories by collecting factual data to support valid conclusions (Gray, 2020). In essence, quantitative studies focus on questions such as how much, how often, how many, when, and who (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019).

Quantitative research examines relationships between variables that are measured numerically and analysed using various statistical methods (Saunders, Lewis, & Thornhill, 2019). It typically follows a deductive approach (Bell, Bryman, & Harley, 2019) and aims to measure phenomena with precision. This research method often focuses on aspects such as consumer behaviour, knowledge, opinions, or attitudes (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). Consequently, quantitative methodologies have become the preferred approach for investigating consumer behaviour (Hackett, 2019). A deductive approach is applied when establishing the link between theory and research (Bryman, et al., 2014). In quantitative research, deductive reasoning is characterised by four key features: First, measurement focuses on ensuring that the instruments used for data collection are both valid and reliable. Second, causality seeks to determine why specific phenomena occur by examining the causal relationships between independent and dependent variables. Third, generalisation involves extending the findings of the study to a wider population beyond the specific sample used in the research. Finally, replication emphasizes the importance of allowing other researchers to reproduce the study independently, thereby ensuring objectivity, consistency, and the reliability of the results (Bryman, et al., 2014).

A quantitative approach was utilized during the primary research phase of this study, given that the research questions and objectives were mainly deductive in nature and centred on the examination of particular variables (Leavy, 2017). Quantitative research focuses on precise measurement (Cooper & Schindler, 2014).

In summary, the effect of SCL on the career success of students and alumni was assessed using a quantitative research approach. The section that follows presents the sampling design and methodology employed in the current research.

### *4.1.8 Sampling design*

The previous sections presented all the important concepts related to the nature of this study. This section explains how the population of students and alumni—who completed a degree (bachelor's, master's, or doctoral) in 2010 or later, or are currently active master's or doctoral students—was determined.

#### *4.1.8.1 Key concepts in sampling: Population, Element, Sample, and Census*

The term population refers to the entire group of individuals, events, or entities that a researcher intends to study or investigate (Sekaran & Bougie, 2020). In this study, the target population consists of individuals who are employed — specifically, alumni who completed a bachelor's, master's, or doctoral degree in 2010 or later, as well as currently employed master's and doctoral students. More specifically, the population included individuals who have experienced or are experiencing SCL during their studies. Since it was not feasible to include the entire population, as contact details for all eligible participants were not available, a sample was drawn from this target population (as will be discussed in the following section).

#### *4.1.8.2 Sampling method: Snowball sampling*

Since the total population of students and alumni meeting the criteria is too large, a sample was selected for this study rather than surveying the entire population. Conducting a census of the full population was impractical due to constraints in time and resources. Sampling therefore provided a valid and feasible alternative for collecting the necessary data (Saunders, Lewis, & Thornhill, 2019).

The current study employed a sampling approach. Sampling refers to any procedure in which conclusions are drawn from measurements taken from a portion of the entire

population (Babin & Zikmund, Exploring marketing research. 11th ed., 2016). When selecting a sample, it is essential that it meaningfully represents the full population and that the selection is justified collected (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019). Sampling methods can be broadly categorised into two types: probability sampling, which relies on random selection techniques, and non-probability sampling, which involves the deliberate selection of units based on the researcher's subjective judgment (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

This research adopted a non-probability sampling technique, namely snowball sampling, to identify and select participants from the target population.

Snowball sampling represents a non-probability technique used to identify and access potential respondents through existing participants' referrals. In this method, existing participants are asked to refer other individuals who meet the study criteria and are willing to participate (Johnson & Christensen, 2017). In this study on SCL snowball sampling was used as a complementary approach by sharing the online survey on social media platforms and encouraging respondents to invite peers to complete it. The advantages of this method include low costs and the potential to reach a larger sample. However, a limitation is that participants often refer like-minded individuals, making the sample less generalisable (Kosinski, Matz, Gosling, Popov, & Stillwell, 2016).

#### *4.1.8.3 Sample size*

The sample size reflects the total number of participants recruited for the study. Determining the appropriate sample size depends on several considerations, including the available budget, the overall population size, the desired level of accuracy, the nature of the questions, and the chosen data-collection method (Clark, Foster, & Bryman, 2019).

Hall (2020) identified several important factors that should be taken into account when determining the appropriate sample size for a quantitative study. According to Hall, larger populations typically require larger samples; however, once the population size exceeds approximately 100,000, the required sample size tends to stabilize. Additionally, increasing the sample size can effectively reduce the margin of error, thereby improving the accuracy of the results. Hall also emphasized that measures with higher variability necessitate larger samples to achieve the desired level of precision. Finally, researchers should carefully

consider the costs associated with sampling and balance them against the benefits of enhanced precision that come from using a larger sample (Hall, 2020).

Due to difficulties in reaching respondents and time constraints, the study was conducted with a final sample of 281 participants.

### *4.1.9 Data collection*

Once the sample had been identified, data collection could commence. Various methods are available for gathering data from respondents, with interviews, observations, and questionnaires being the most commonly used (Sekaran & Bougie, 2016). Each method has its own advantages and limitations, and the choice of method should align with the type of data being collected (Van Huyssteen, 2022). As previously discussed, a quantitative research approach was employed in this study, making a questionnaire the most suitable data-collection instrument. The design of the questionnaire and the data-collection process followed are described in detail below.

#### *4.1.9.1 Data-collection instrument*

Data were collected using a survey strategy, specifically through online self-administered questionnaires. With self-administered questionnaires, the presence of an interviewer is not required, as respondents are responsible for reading and answering the questions independently. These questionnaires can be distributed in various ways (Babin & Zikmund, Exploring marketing research. 11th ed., 2016). They can take either a paper-based or electronic/online form, with the main objective being that respondents complete the questions on their own and submit the completed questionnaire according to the method specified by the researcher (Sekaran & Bougie, 2020).

The questionnaire must be designed so that respondents can complete it independently, without requiring any assistance. Consequently, careful attention should be given to the development and design of the instrument. According to Bryman and Bell (2015) and Saunders et al. (2019), several key principles should be considered during the questionnaire design phase: The survey should begin with a clear title and a cover letter that outlines the purpose of the study, explains relevant ethical considerations, and specifies the measures taken to guarantee anonymity and confidentiality. The questions themselves should be concise yet detailed enough to collect the necessary data, and the questionnaire should be

presented in a formal, visually appealing, and easy-to-read format. Each question must be clearly worded to avoid ambiguity or misunderstanding, ensuring that respondents fully understand what is expected of them. A vertical layout for answering questions is generally preferred, as it helps minimise confusion. Additionally, clear instructions should accompany each section or question to guide respondents effectively. It is also important to ensure that questions and their corresponding answers remain together and are not separated across pages or sections. Finally, the questionnaire should conclude with closing remarks, expressing gratitude to participants and reinforcing the importance of their contribution to the research including (Bryman & Bell, 2015; Saunders, Lewis, & Thornhill, 2019).

All of these principles were applied during the questionnaire design phase. The cover letter outlined the purpose of the study, the approximate time required to complete the questionnaire, and reassured respondents that their anonymity and confidentiality would be maintained. Clear instructions were provided, asking respondents to place a tick in the box corresponding to their chosen answer, and it was emphasized that there were no right or wrong responses.

Respondents were assured that participation was voluntary and that they could withdraw at any stage without any consequences. They were also informed that there were no direct benefits to participating in the study; however, the findings would contribute to a PhD thesis and could potentially be shared through conference presentations, academic publications, and other forms of dissemination.

Respondents were advised that they could contact the primary researcher if they wished to receive feedback on the study results. They were further assured that completing the survey would not result in any negative consequences. Consent was implied by proceeding with the survey. Each question, along with its corresponding answer options, was presented together on the same page in an online electronic format. The questionnaire was pretested, with the pretesting phase discussed later in this section.

As mentioned previously, an online survey using a self-administered questionnaire was chosen for this study because it is a cost-effective approach and requires less time compared to conducting interviews or observations (Sekaran & Bougie, 2020).

Self-administered surveys also present certain drawbacks. This approach can lead to a higher likelihood of non-response, either because respondents do not understand a question or accidentally skip it, resulting in non-response errors (Sekaran & Bougie, 2020). These issues can be minimized by designing the questions clearly to ensure respondents understand them. Furthermore, in the online format used for this study, respondents could not proceed to the next question without completing all items on the current page.

There are additional limitations associated with online self-administered questionnaires that need to be noted. First, not all individuals are computer literate, and for this study, respondents needed both computer literacy and access to a device and the internet to complete the questionnaire. Second, participation in surveys is voluntary, and respondents had to be willing to complete the questionnaire—a limitation inherent to any survey method.

The length of the questionnaire is also an important consideration; it should not be overly long or contain many open-ended questions.

Although the researcher has limited control over who completes the questionnaire, screening questions were included to ensure that only the relevant target population participated. In this study, the first questions allowed only respondents who have experienced SCL and are currently pursuing or have completed higher education to continue. If respondents did not meet these criteria, their questionnaires were discarded, and they were instructed to stop completing the survey.

There is also a risk of receiving incomplete or incorrectly completed questionnaires from the respondents. Therefore, the questionnaire was subjected to a pilot test phase, during which it was pretested to reduce the likelihood of incomplete submissions and to ensure that it was concise and manageable. To avoid incorrectly completed questionnaires, the researcher ensured that all instructions and any skip questions were clear and tested during the pretesting phase.

**Instrument design and development**

All the survey instrument design principles mentioned above were considered during the development of the first draft of the questionnaire, alongside the detailed literature review presented in Chapter 2. Barry et al. (2011) caution researchers against creating their own scales in questionnaires without following proper procedures. These authors offer a five-

step guideline that can be used to develop effective survey instruments (Barry, Chaney, Stellefson, & Chaney, 2011).

Phase 1 of the study involved the literature review, during which existing theories and various decision-making models were extensively examined to identify relevant constructs.

Phase 2 focused on designing an appropriate scale structure to align with the analysis plan. A five-point Likert scale was developed for each construct to facilitate data analysis

Phase 3 involved creating broad and comprehensive sample items for each construct based on the conceptual framework.

Phase 4 addressed the validation of the scales. Content validity (Step 1) was assessed by an expert (the supervisor), who reviewed the item pool for clarity and relevance, providing feedback that was incorporated into the scales. In Step 2, one respondent evaluated each item's cognitive and motivational qualities, and necessary revisions were made. Step 3 involved conducting a pilot study (discussed in the next section). Steps 4 and 5 were also completed during the pilot testing phase, as described below.

The pilot testing phase is explained in detail in the following section.

**Pilot testing of data-collection instrument**

A pilot test is a small-scale data collection exercise conducted among respondents who are similar to those targeted in the main study (Babin & Zikmund, Exploring marketing research. 11th ed., 2016). It is important that the pilot participants represent the target population and that the same procedures and steps planned for the primary data collection are followed. The purpose of the pilot test is to verify the clarity of instructions and to identify any potential weaknesses in the questionnaire design (Bryman & Bell, 2015). A pilot test was conducted for this study, and the steps followed are illustrated below.

The self-administered survey instrument for this study underwent a pilot testing process as follows:

1. The initial draft of the questionnaire was reviewed by the supervisor, a professor specializing in education, to ensure both content validity from a theoretical perspective and the statistical soundness of the questionnaire items, with appropriate revisions made based on their feedback.
2. Thirty completed questionnaires were collected.

3. Statistical analysis was performed on the pilot responses to ensure that the items were statistically significant, fulfilling Step 5 of the scale development process. Recommendations from the supervisor were incorporated.
4. The revised questionnaire was reviewed again by the supervisor to confirm that all changes had been correctly implemented and that the instrument was ready for online deployment.
5. The researcher tested the online version to verify that all skip logic functioned correctly and that all content was accurately displayed.
6. online self-administered questionnaire was finalized and ready to be released for the primary data collection phase.

Following the pilot test process outlined above, the final version of the online self-administered questionnaire was established. The section below presents a comprehensive description of the questionnaire employed in this research.

**The self-administered questionnaire**

The self-administered questionnaire used in this study comprised three main sections: an introductory paragraph, questions related to the constructs of the conceptual framework, and demographic questions. The introductory paragraph explained the purpose of the study, indicated the approximate time required to complete the questionnaire, and assured respondents of their anonymity and confidentiality.

The formulation of questions is critical, as it directly influences the type and quality of information obtained from respondents. The wording and structure of the questions should be clear, precise, and aligned with the research objectives to ensure that the data collected is accurate and relevant (Kumar R. , 2019).

It is for this reason that each question in the questionnaire is directly linked to a specific research objective or question. Table 3 illustrates the correspondence between the questions asked and the research objectives.

*Table 3: Matrix of Research Objectives and Questionnaire Items*

| **objective** | **Corresponding section in questionnaire** | | | **Type of question** | **Sources used to generate question/justification of inclusion** |
|---|---|---|---|---|---|
| | **Number** | **Question** | **Classification of variable** | | |
| To assess the demographic variables | A1 | Age | Ordinal | Singe choice question | Author-generated |

| | | | | | |
|---|---|---|---|---|---|
| To assess the demographic variables | A2 | Gender | Nominal | Dichotomous question | Author-generated |
| Screening questions | A3 | Academic qualification(s) obtained in Georgia | Ordinal | Multiple-choice question | Author-generated |
| Filter question | A4 | Year of obtaining academic qualification | Nominal | Open-ended question | Author-generated |
| Screening questions | A5 | Type of university attended | Nominal | Multiple-choice question | Author-generated |
| Screening questions | A6 | Academic discipline or field | Nominal | Multiple-choice question | Author-generated |
| To assess the demographic variables | A7 | Marital status | Nominal | Dichotomous question | Author-generated |
| To assess the demographic variables | A8 | Number of children | Nominal | Open-ended question | Author-generated |
| To assess the demographic variables | A9 | Parents' level of education | Ordinal | Singe choice question | Author-generated |
| Screening questions | A10 | GPA of the most recently completed academic program | Ordinal | Singe choice question | Author-generated |
| Screening questions | A11 | Employment status | Nominal | Dichotomous question | Author-generated |
| Screening questions | A12 | Employment status by profession | Nominal | Dichotomous question | Author-generated |
| Screening questions | A13 | Duration of employment in the profession | Ordinal | Singe choice question | Author-generated |
| Screening questions | A14 | Role in the organization | Ordinal | Singe choice question | Author-generated |
| Additional question | A15 | Perceived career readiness based on university education | Ordinal | 10-Point Likert scale measuring the extent to which respondents agree with the statement, ranging from 1 = Strongly Disagree (No extent) to 10 = Strongly Agree | Author-generated |

| | | | | | |
|---|---|---|---|---|---|
| | | | | (Extreme extent). | |
| Measuring Career Success – Dependent Variable | B (6 items) | Job satisfaction of university graduates is used as a proxy for career success. | Ordinal | Response format: 5-Point Likert scale measuring the extent to which respondents agree with the statement, ranging from 1 = Strongly Disagree (No extent) to 5 = Strongly Agree (Extreme extent). | (Heredia, 2009) |
| Measuring individual ccompetencies | K (10 items) | Individual competencies (COM) – Factor Influencing Career Success | Ordinal | Response format: 5-Point Likert scale measuring the extent to which respondents agree with the statement, ranging from 1 = Strongly Disagree (No extent) to 5 = Strongly Agree (Extreme extent). | (Whittemore, 2018) (Balcar, Janickova, & Filipova, 2014) |
| Measuring Academic self-efficacy | F (6 items) | Academic self-efficacy (Potential Impact on Competency Development) | Ordinal | Response format: 5-Point Likert scale measuring the extent to which respondents agree with the statement, ranging from 1 = Strongly Disagree (No extent) to 5 = Strongly | (Bandura, 1977) (Bandura, 1993) (Bandura, 2023) (Pajares, 1996) |

| | | | | | |
|---|---|---|---|---|---|
| | | | | Agree (Extreme extent). | |
| Measuring SCL | G (Institutional conditions: 6 Items; Innovative teaching: 11 items) | SCL (Potential Impact on Competency Development) | Ordinal | Response format: 5-Point Likert scale measuring the extent to which respondents agree with the statement, ranging from 1 = Strongly Disagree (No extent) to 5 = Strongly Agree (Extreme extent). | (Al- Humaidi, 2015) (Attard, Ioio, Geven, & Santa, 2010) |

#### *4.1.9.2 Data-collection process*

Once the data-collection tool has been developed, the researcher should proceed to the data-collection stage. Data obtained from the self-administered questionnaire must be edited, coded, and processed before being utilized to answer the research questions. The data processing procedures are explained in detail in Section 4.1.10.

Data collection for this study took place from April to July 2025. During this four-month period, data were obtained through the distribution of an online self-administered questionnaire, shared both via email and through posts on Facebook. Owing to the initially low response rate, the data-collection period was extended, and the survey link was redistributed multiple times. It is important to note that no incentives were provided to participants for completing the questionnaire. The subsequent section outlines potential errors associated with the data-collection process.

#### *4.1.9.3 Data-collection errors*

Errors are an unavoidable element of any data-collection process, though researchers must seek to minimize them as much as possible (Hair, Page, & Brunsveld, 2020). Such errors may be intentional, for instance through deliberate falsification, or unintentional, such as systematic or random sampling errors. After the data have been gathered, the researcher

must carefully examine them for inaccuracies, including missing responses or evidence that questions were misunderstood (Hair, Page, & Brunsveld, 2020). In the present study, however, missing data could not occur, as the online questionnaire was designed in a way that prevented respondents from proceeding without answering each item. Furthermore, a pilot test was carried out to ensure clarity of the questions, and the integrated design of the online instrument minimized the possibility of misinterpreting instructions.

The next section describes the data-processing procedures.

### *4.1.10 Data processing*

Sometimes, data processing can occur simultaneously with data collection, as seen with online self-administered questionnaires (Fielding, 2017). This section outlines the data processing steps used in the current study.

#### Data capturing

Data capturing is the process of converting data into a quantitative and machine-readable format that can be processed by computer software (Babbie, 2021). For this study, data were captured using Google Forms, as respondents completed the questionnaire online. The collected data were then exported into an Excel spreadsheet (a machine-readable format) before being imported into IBM SPSS (Version 27), the software used for analysis.

#### Data coding

Saunders et al. (2019) explain that all data must be assigned numerical codes. This transforms the data into structured, manageable formats that can be processed by computer software (Saunders, Lewis, & Thornhill, 2019). Coding involves assigning a specific numerical value to each quantitative response, and it should take place prior to beginning data analysis (Kara, 2019). Essentially, coding refers to the categorisation of data, while numerical coding specifically entails assigning numbers to categories to enable quantitative analysis (Adams & Lawrence, 2019). In this study, numerical coding was applied, as the data were analysed using quantitative methods.

#### Editing

After completing data capturing and coding, the next step is data editing. This process involves identifying and correcting any inconsistencies in the spreadsheet before the data

is imported into the analysis software (Babbie, 2016). Put differently, editing refers to the cleaning of the dataset to ensure it is free of errors (Maylor, Blackmon, & Huemann, 2017).

In this study, the dataset was thoroughly reviewed and edited to detect and minimise errors, and to resolve any inconsistencies. The Excel spreadsheet was carefully checked to verify that all numerical values assigned to each response were accurate and valid. Once the data were cleaned and edited, the analysis phase began, as outlined in the following section.

### *4.1.11 Data analysis*

Once the data have been collected and processed, the next step is to analyse them. According to Zikmund et.al, data analysis involves applying logical reasoning to interpret the collected information (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). In quantitative research, this phase includes various methods of coding, categorising, and assigning meaning to numerical data, which typically consists of statistical measures (Gliner, Morgan, & Leech, 2017). Quantitative data analysis encompasses both descriptive and inferential statistics (such as model fit analysis), each requiring specific analytical techniques. These techniques are outlined in the following section.

#### *4.1.11.1 Descriptive statistics*

Descriptive statistics are used to offer a general overview of the dataset and to describe the variables within it. They typically include information about the dataset size, sample characteristics, and details of the variables relevant to the main research questions (Williamson & Johanson, 2018). In essence, descriptive statistics serve to summarize and explain the data in a study.

When presenting descriptive statistics, researchers often use charts and graphs to visually represent the data (Gray, 2020). Common types of descriptive statistics include frequency counts, measures of central tendency, and measures of dispersion (Fallon, 2016. ). Each of these is further explained below:

- Frequency counts involve tallying the number of times each category occurs, often presented as percentages (Leavy, 2017). Their main purpose is to show how many respondents fall into each category. These counts are usually displayed using graphs or charts to facilitate clear and logical interpretation (Gliner, Morgan, & Leech, 2017).

- Measures of central tendency indicate the central value of a dataset using the mean, median, or mode (Maylor, Blackmon, & Huemann, 2017).
- The mean represents the average of the data, the median is the middle value where half the data points fall below it, and the mode is the most frequently occurring value in the dataset (Williamson & Johanson, 2018).
- Measures of dispersion show how spread out or distributed the data are. Common measures include the range, interquartile range, variance, and standard deviation. The range is the difference between the highest and lowest values, while the interquartile range divides the data into four equal parts and focuses on the middle two sections. Variance provides a measure of the average squared differences between each data point and the mean, while standard deviation expresses the average distance of the data points from the mean, offering a more interpretable measure of dispersion (Williamson & Johanson, 2018). Among these, variance and standard deviation are considered the most valuable measures of dispersion (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

As mentioned earlier, descriptive statistics are often displayed using visual tools such as diagrams and charts. Common graphical forms include frequency tables, histograms, bar charts, and pie charts, which help illustrate the data clearly (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019; Gliner, Morgan, & Leech, 2017).

In summary, frequency counts, measures of central tendency, and measures of dispersion are key components of descriptive statistics in quantitative research. The descriptive statistics for this study are presented below. After completing this stage, the researcher proceeded to inferential statistics, specifically model fit analysis.

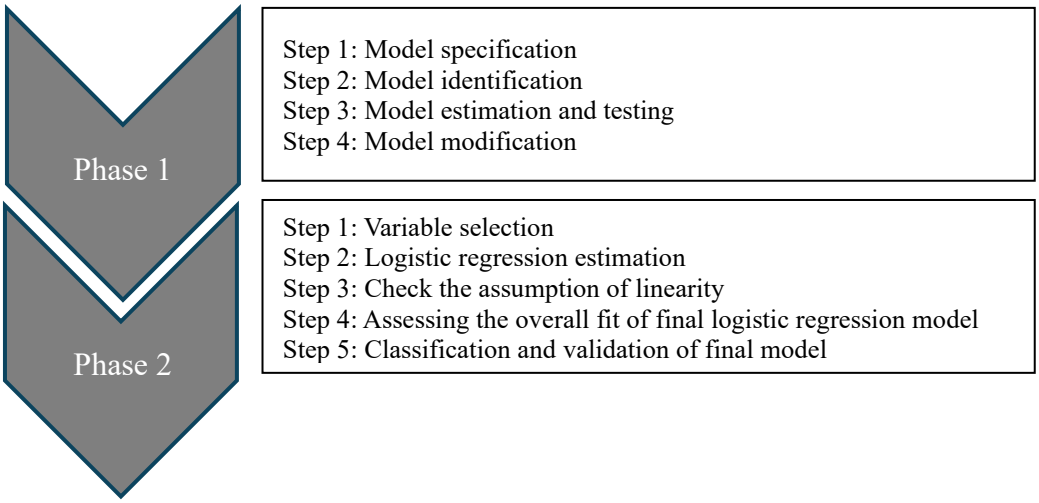
#### *4.1.11.2 Model fit analysis*

The chief goal of this research is to measure an impact of SCL on students' career success in the Georgian higher education context. It is, therefore, necessary to choose an appropriate statistical method to analyse the structural relationships between SCL and career achievements, and to determine the acceptability of the proposed model.

Several statistical methods can be used to develop a model that explains the impact of SCL on students' career success. It is, however, important to establish whether an already tested model will be adopted or a new conceptual model will be developed, as this decision

determines the model-building strategies. As indicated earlier in this chapter, the theoretical framework outlined in the literature review chapter was used to compile a conceptual model of SCL and career success (SCL-CS model). Since the SCL-CS conceptual model has not been empirically tested before, a distinctive model-building strategy suitable for this study was designed. The model-building strategy utilised to achieve the final SCL-CS model is illustrated in Figure 10.

*Figure 10: Model-building strategy to achieve a model*




Source: Author (adapted from (Van Huyssteen, 2022)

The process underlying the model fit strategy consists of two phases, namely, the Exploratory Factor Analysis (EFA) phase and the Confirmatory Factor Analysis (CFA) phase. The rationale behind the choice of each statistical method in this model-building strategy is explained below.

Exploratory Factor Analysis (EFA) is a statistical method used to identify the underlying structure of a relatively large set of variables (Hair, Black, Babin, & Anderson, 2019). Since the conceptual model of SCL and career success has not been empirically tested before, EFA was considered ideal for exploring and estimating the factor structure of the current theoretical model (Matsunaga, 2010). EFA was conducted using a holdout sample of 281 participants to examine the factor structure as Phase 1 of this study.

Confirmatory Factor Analysis (CFA) is a type of structural equation modelling (SEM) method used to assess how well a pre-specified measurement model, composed of observed variables and latent factors, fits the empirical data (Hair, Black, Babin, & Anderson, 2019). CFA is widely used to test factor validity at this stage, ensuring proper model specification

and identification. Previous research has highlighted the benefits of using CFA as a follow-up to EFA, confirming the existence of the factor structure identified in the exploratory phase (Nayeem & Casidy, 2015). In this study, CFA was conducted using a validation sample of 281 participants to evaluate model fit.

### *4.1.12 Reliability and validity*

The survey research instrument (the self-administered questionnaire used in this study) must be both reliable and valid to ensure that the results and conclusions are accurate and precise (Ruel, Wagner, & Gillespie, 2016). Reliability refers to the consistency of the instrument, while validity pertains to its accuracy in measuring what it is intended to measure (Bryman, 2016).

#### Reliability

Reliability refers to the extent to which a measurement instrument is free from random error and therefore yields consistent results (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). In simpler terms, reliability assesses whether consistent results would be obtained if the study were repeated under the same conditions (Ruel, Wagner, & Gillespie, 2016).

According to Mitchell in Saunders et al. (2019), there are three methods to assess the reliability of a questionnaire at the design stage: test–retest, internal consistency, and alternative forms (Saunders, Lewis, & Thornhill, 2019). Test–retest reliability involves administering the same scale or measurement instrument to the same respondents on two separate occasions to assess stability over time. When a measure is stable, it will yield similar results each time it is administered under the same conditions (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

Internal consistency can be assessed using the split-half reliability method or, more commonly, Cronbach's alpha (Patten & Newhart, 2018). In the split-half method, the researcher randomly divides the scale items into two halves and compares the results obtained from one half with those from the other half (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). To calculate Cronbach's alpha, the average of the coefficients from all possible split-half combinations is determined. The alpha coefficient ranges from 0 (indicating no internal consistency) to 1 (indicating perfect internal consistency) (Bell,

Bryman, & Harley, 2019). Values of 0.7 or higher indicate that the items combined in the scale are measuring the same construct (Saunders, Lewis, & Thornhill, 2019).

Alternative form reliability refers to the method in which responses to one form of a question or set of questions are compared with responses to an alternative form of the same question(s) (Saunders, Lewis, & Thornhill, 2019).

In this study, internal consistency was assessed to ensure the reliability of the research instrument. Cronbach's alpha coefficient was employed to determine the degree to which the instrument items were homogenous and reflected the same underlying construct (Cooper & Schindler, 2014; Cooper, Schindler, & Sharma, 2019; Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017).

Reliability within the context of the model-building strategy is somewhat more complex. The reliability of a CFA model is assessed using the Composite Reliability (CR) value, which indicates the reliability and internal consistency of a latent variable (Hair, Black, Babin, & Anderson, 2019). As a rule of thumb, a CR value above 0.70 indicates acceptable internal consistency, while in exploratory research, values between 0.60 and 0.70 are considered acceptable (Hair, Black, Babin, & Anderson, 2019).

Validity

Validity indicates the degree to which the self-administered questionnaire measures what it is designed to measure (Bell, Bryman, & Harley, 2019). To ensure validity, the researcher first conducted pilot tests of the questionnaire prior to the main data collection (Dikko, 2016).

Validity comprises several dimensions, including content (or face) validity, criterion validity, and construct validity (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). Content (or face) validity assesses whether the measurement instrument (the self-administered questionnaire) adequately reflects the content of the concept being measured. Experts or individuals with relevant experience in the field can be consulted to judge whether the instrument accurately represents the concept (Bell, Bryman, & Harley, 2019). In this study, content validity was ensured by having field experts review and validate the questionnaire.

Criterion validity is established by determining whether a measure correlates with other measures of the same construct. Criterion validity can be further categorised into concurrent validity and predictive validity (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). Concurrent validity assesses how well the measure estimates current performance, while predictive validity evaluates the ability of a new measure to predict future outcomes (Bell, Bryman, & Harley, 2019). In the present study, the self-administered questionnaire was evaluated in terms of relevance, freedom from bias, reliability, and availability to ensure criterion validity.

Construct validity is assessed during the statistical analysis phase, as it indicates the extent to which a measure reflects the theoretical construct derived from the literature (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). Therefore, understanding the theoretical basis of the measurements is essential. In this study, construct validity was evaluated through Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

For the EFA, discriminant validity was assessed. Discriminant validity refers to the extent to which measures of theoretically unrelated constructs are indeed distinct from each other (Hair, Black, Babin, & Anderson, 2019).

During CFA, three types of validity needed to be assessed. Firstly, construct validity, which is the primary objective of CFA, evaluates the accuracy of the measurement. Once a good model fit is established, four additional components of construct validity should be examined (Hair, Black, Babin, & Anderson, 2019). These components include: adherence to the conceptual definition, unidimensionality, and meeting the required levels of reliability (Hair, Black, Babin, & Anderson, 2019).

Secondly, convergent validity evaluates the extent to which a measure correlates positively with other measures of the same construct (Civelek, 2018). The Average Variance Extracted (AVE) should ideally be greater than 0.50 to indicate sufficient convergent validity. However, it is important to consider the Composite Reliability (CR) in conjunction with AVE values when assessing the adequacy of the construct (Hair, Hult, Ringle, & Sarstedt, 2017).

Thirdly, discriminant validity assesses the extent to which a latent variable is distinct from other latent variables or indicators (Hair, Black, Babin, & Anderson, 2019). The Fornell and Larcker criterion can be applied to evaluate discriminant validity by comparing the

square root of the AVE for each construct with the correlations between latent variables. For adequate discriminant validity, the square root of each construct's AVE should exceed its correlations with other latent variables (Hair, Black, Babin, & Anderson, 2019). In this study, all three types of validity—construct, convergent, and discriminant—were confirmed with the final CFA model.

### *4.1.13 Data Findings Presentation*

The research process concludes with the presentation of the data findings. This stage involves the interpretation of information and the drawing of conclusions (Zikmund, D'Allesandro, Lowe, Winzar, & Babin, 2017). Therefore, it is essential that the findings are presented effectively and go beyond merely summarizing the results. The data findings are presented below.

### *4.1.14 Conclusion*

This chapter aimed to outline the research methodology adopted in the present study. It revisited the research objectives, presented a figure illustrating the overall research process, described the specific research design employed, and provided brief explanations of the key methodological terms used throughout the chapter.

The chapter also covered the overall research design, with particular emphasis on the quantitative research approach, which was explained and justified. The sampling design was discussed. An online self-administered questionnaire was developed and utilized as the primary data-collection instrument.

The data-collection process was explained in detail. Data were collected using the online questionnaire, which was thoroughly edited, captured, coded, and cleaned prior to analysis. The chapter provided an in-depth discussion of the data processing steps, as well as a framework of the data analysis procedures followed in this study. A range of statistical analyses was employed to process and analyse the data.

This chapter concluded with a discussion of the reliability and validity of the research instrument, along with the ethical considerations implemented throughout the research process.

## *4.2 Descriptive findings of research*

### *4.2.1 Introduction*

The descriptive statistics presented in this chapter primarily illustrate the demographic composition of the respondents, who either (a) completed their bachelor's, master's, or doctoral studies after 2010, or (b) are currently pursuing a master's or doctoral degree, and are all employed. Based on these statistics, a demographic profile of the average persons engaged in SCL activities and their perceived career success was developed. The sample size is n = 281 throughout.

- Age
- Gender
- Academic qualification(s) obtained in Georgia
- Year of obtaining academic qualification
- Type of university attended
- Academic discipline or field
- Marital status
- Number of children
- Parents' level of education
- GPA of the most recently completed academic program
- Employment status
- Employment status by profession
- Duration of employment in the profession
- Role in the organization
- Graduate Preparedness for the Labor Market

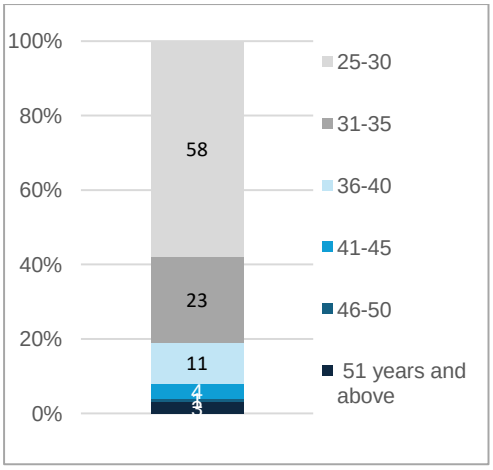
This subsection also presents an analysis of participants' perceptions based on survey statements**,** offering insights into their evaluation of career-related aspects, SCL, self-efficacy, and individual competencies.

### *4.2.2 Demographic composition of the respondents*

#### *4.2.2.1 Age*

As shown in the figure above, the ages are grouped, and the largest age group represents 58% of the respondents in the 25-30 age group.

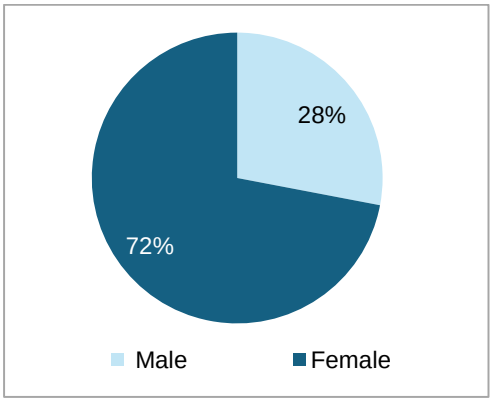
*Figure 11: Age*




#### *4.2.2.2 Gender*

A closed-ended nominal scale question was provided, where respondents had to select one of the predefined categories: Male and Female. Figure 6.2 presents the distribution of responses across these age categories.

*Figure 12: Gender*

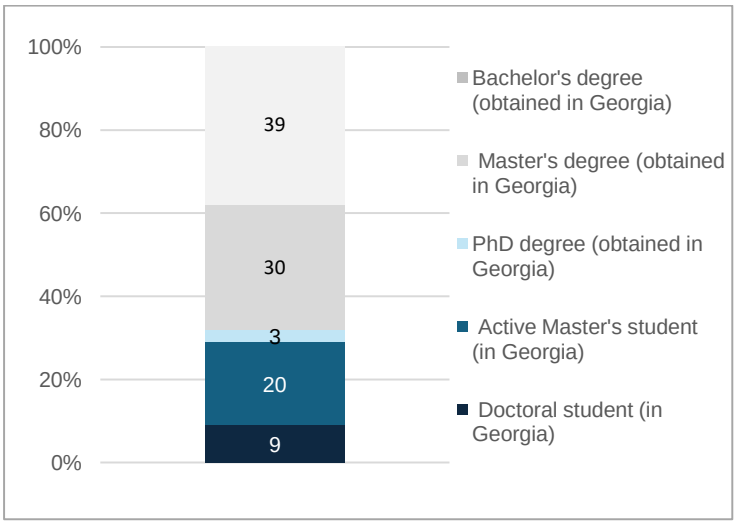



The sample consists of 28% male and 72% female respondents.

#### *4.2.2.3 Academic qualification(s) obtained in Georgia*

Almost 70% of the respondents have obtained a bachelor's and master's degree. Active master's students account for 20%, while doctoral students make up 9%. It should also be noted here that, in addition to active master's and doctoral students, these are individuals who have completed any level of study in 2010 or later.

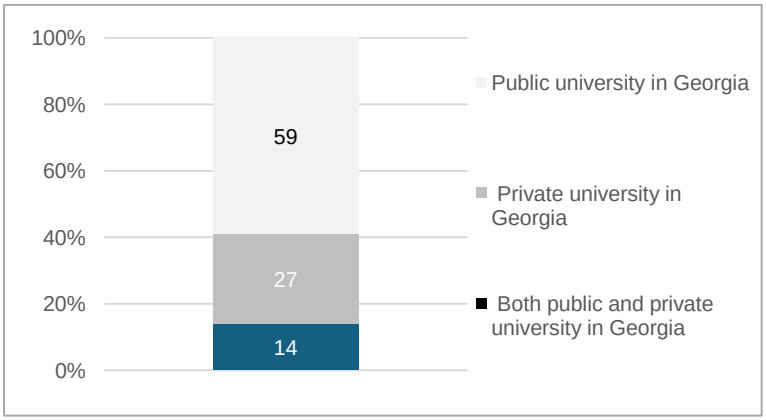
*Figure 13: Academic qualification(s) obtained in Georgia*




#### *4.2.2.4 Type of university attended*

Sixty percent of the respondents (166 respondents) have either completed or are currently pursuing a master's or doctoral degree at a public university in Georgia. Approximately 30% of the respondents are from private universities. The remaining respondents have completed one level of their studies at a public university and continued at a private university, or vice versa.

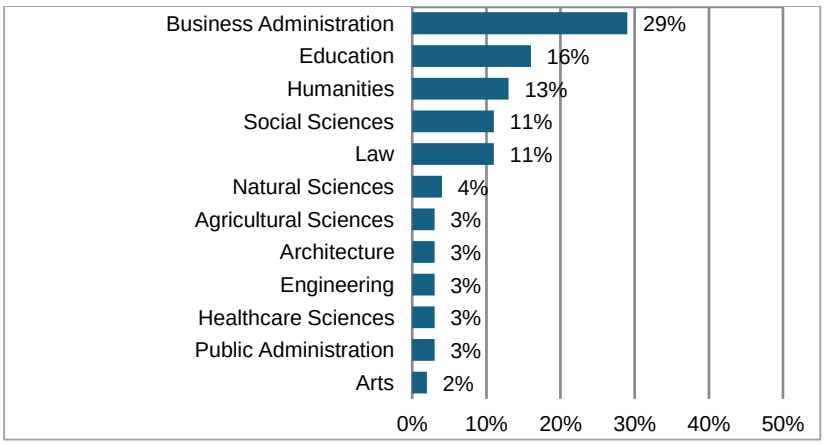
*Figure 14: Type of university attended*



#### *4.2.2.5 Academic discipline or field*

Regarding the respondents' academic discipline or field, 30% (82 respondents) are in Business Administration, followed by Education at 16% (45 respondents), with Humanities (36 respondents), Social Sciences (32 respondents), and Law (30 respondents) coming next.

*Figure 15: Academic discipline or field*




#### *4.2.2.6 Marital status and number of children*

Approximately half of the respondents (123 respondents) are married. Regarding the number of children, about 40% of the respondents (104 respondents) have one or more children.

*Figure 16: Marital status*

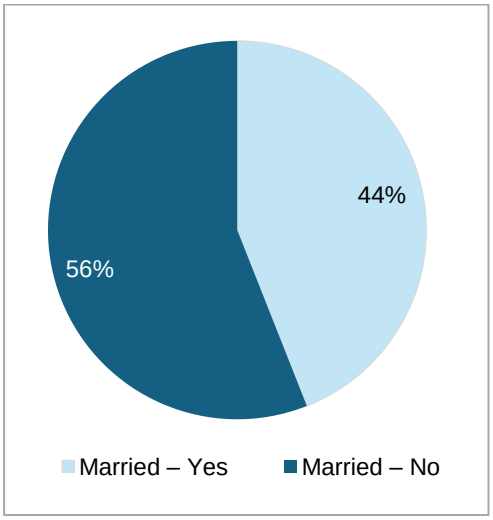
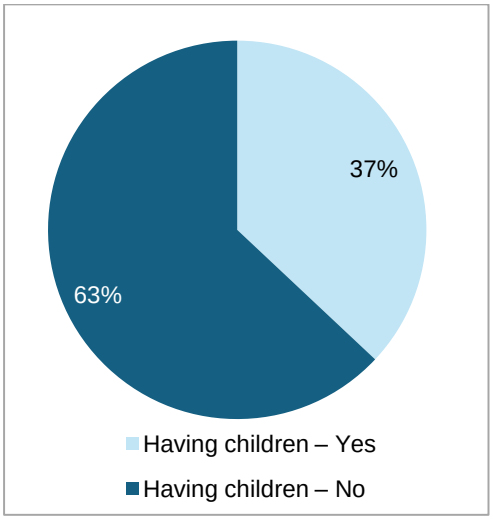


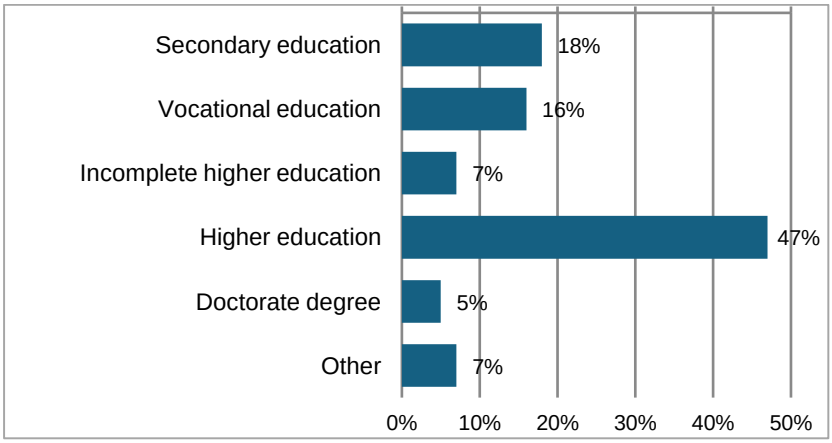
*Figure 17: Having children*




#### *4.2.2.7 Parents' level of education*

Almost half of the surveyed respondents (132 respondents) have parents with higher education, while an additional 5% of respondents' parents hold a doctoral degree.

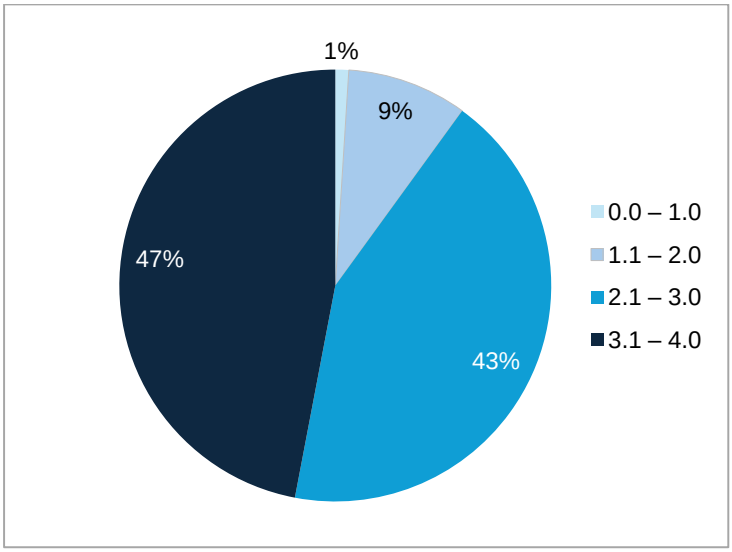
*Figure 18: Parents' level of education*




#### *4.2.2.8 GPA of the most recently completed academic program*

The respondents are distributed at almost equal levels, with 120 respondents having a GPA ranging from 2.1 to 3.0, and 132 respondents having a GPA ranging from 3.1 to 4.0.

*Figure 19: GPA*




#### *4.2.2.9 Employment status by profession and professional experience*

Nearly 70% of the respondents are employed in their profession, while the remaining respondents are employed but not in their field of study. Regarding professional experience, approximately 85% of the respondents have up to 10 years of experience.

*Figure 20: Employment status by profession*

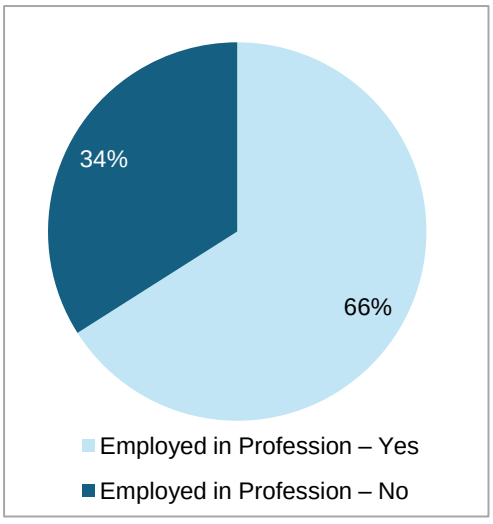
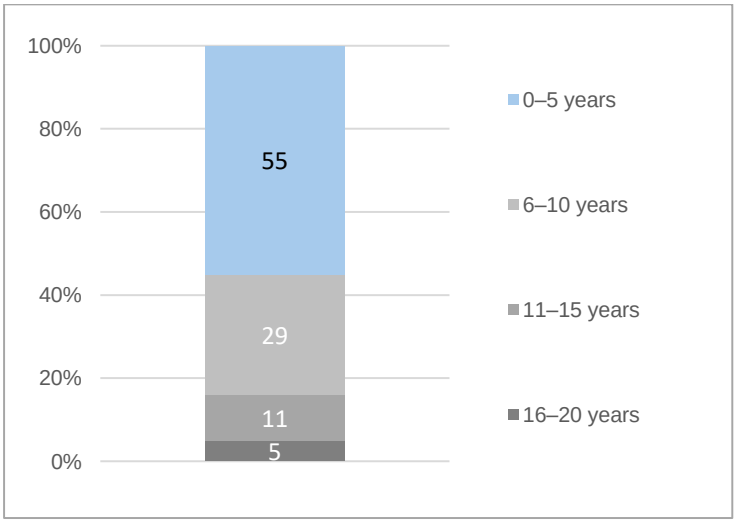


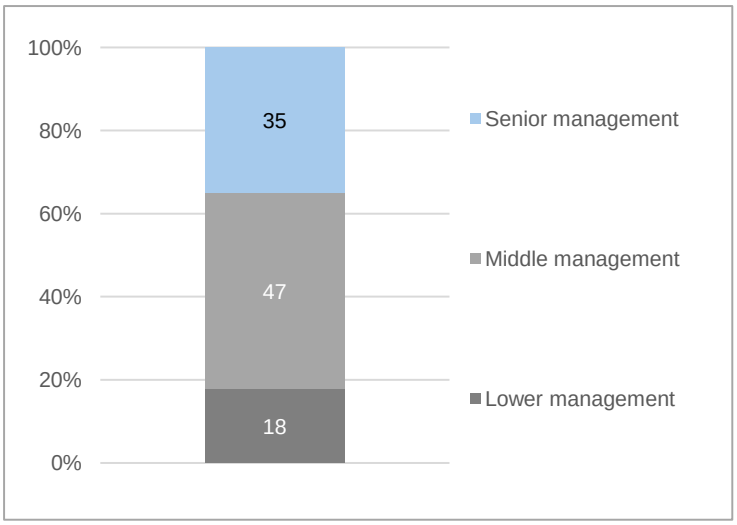
*Figure 21: Duration of employment in the profession*




#### *4.2.2.10 Role in the organization*

Almost half of the respondents, 47% (132 respondents), are employed as middle managers. 35% of the respondents belong to senior management, while only 18% are lower-level managers.

*Figure 22: Role in the organization*




#### *4.2.2.11 Graduate preparedness for the labor market*

Graduate Preparedness for the Labor Market: Respondents were asked to what extent they agree that a university graduate is ready for the labor market with the knowledge and

competencies acquired at university. A 10-point scale was used, where 1 = strongly disagree and 10 = strongly agree.

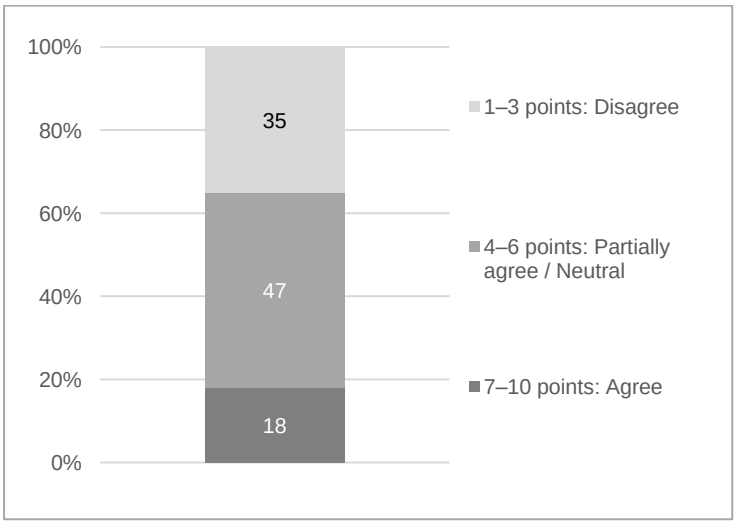
Based on the 10-point scale, the responses were analyzed as follows:

- Scores 1–3 indicate disagreement.
- Scores 4–6 indicate partial agreement or a neutral stance.
- Scores 7–10 indicate agreement.

This grouping allows the responses to be categorized for easier interpretation and visualization.

The results show that more than one-third of the respondents strongly disagree with the statement that the university equips graduates with the necessary skills for the labor market. Nearly half of the respondents either partially agree with this statement or hold a neutral position. Only 18% of the respondents fully agree.

*Figure 23: Graduate Preparedness for the Labor Market*




### *4.2.3 Students' perceptions based on survey statements: Items included in the final structural model*

In this subsection, an analysis of participants' perceptions based on survey statements is presented. In general, 24 Items were included in the model. The statements were evaluated using a five-point Likert scale, where respondents indicated their level of agreement ranging from completely disagree (1) to completely agree (5). The analysis provides

insights into participants' evaluation of career-related aspects, student-centered learning, self-efficacy, and individual competencies.

*Figure 24: Career Success (B)*

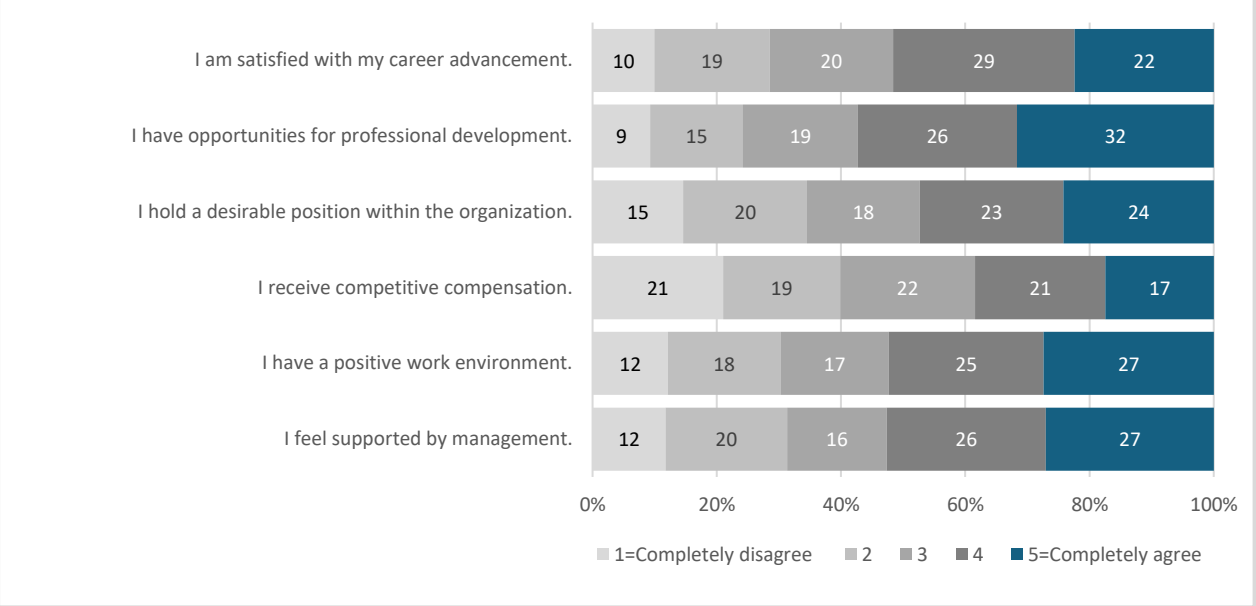



*Figure 25: Statements on Individual competences (K)*

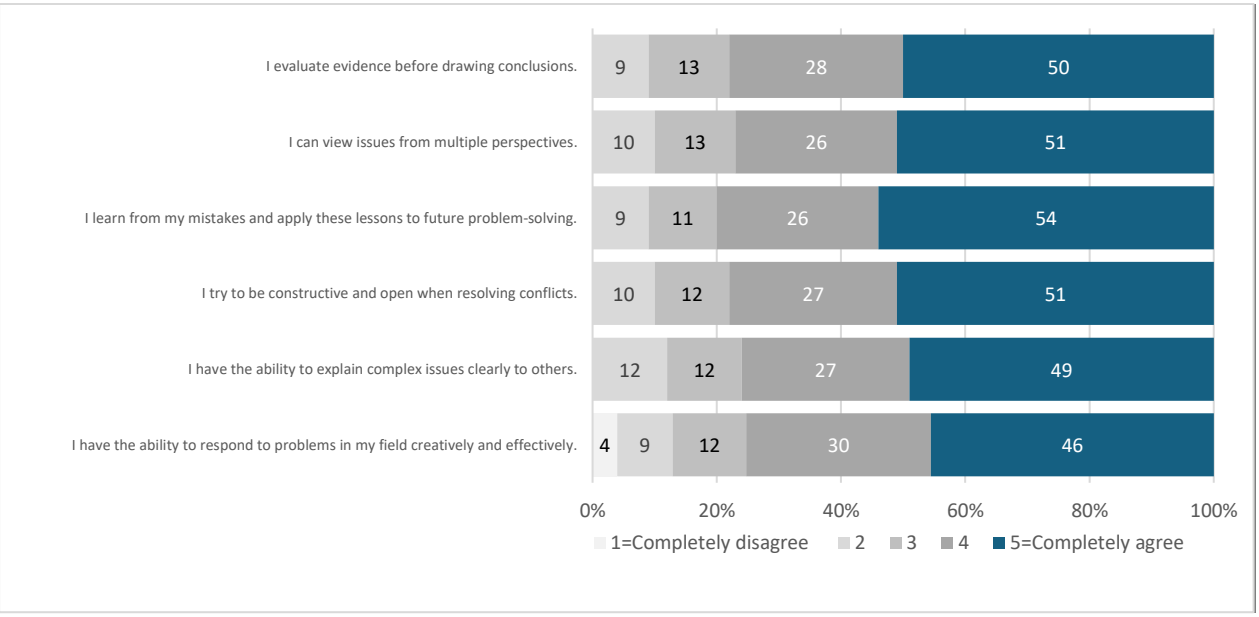


*Figure 26: Statements on Academic Self-efficacy (F)*

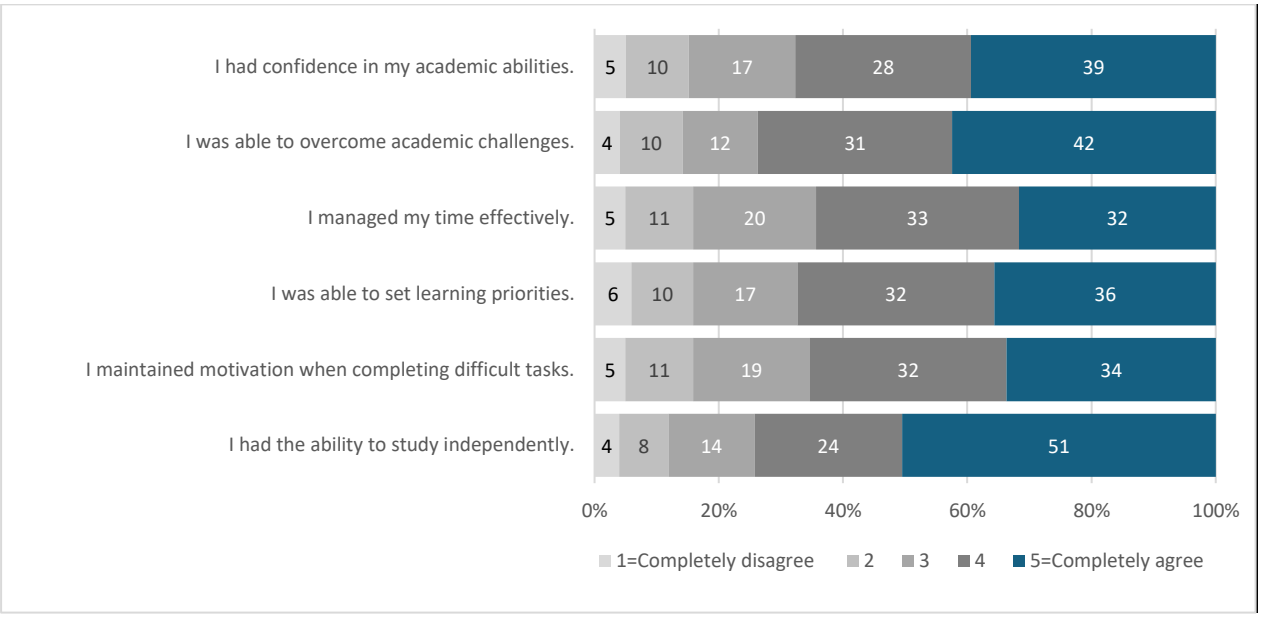
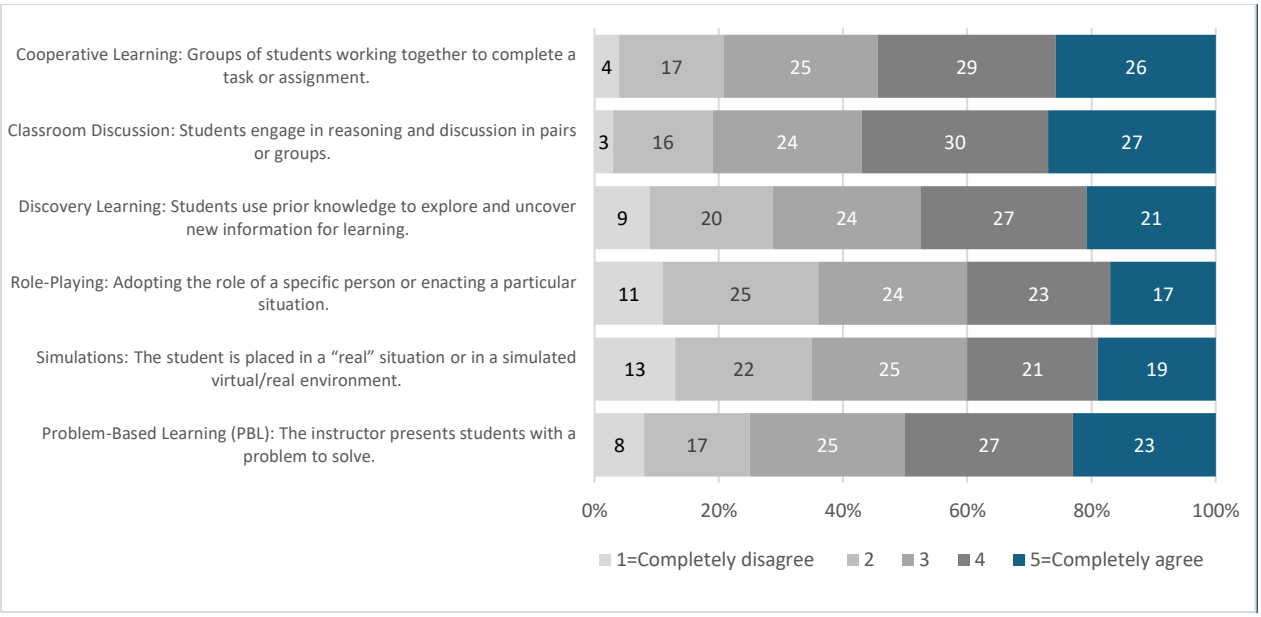



*Figure 27: Statements on Student-Centered Learning (G)*



### *4.3 Model fit analysis*

#### *4.3.1 Descriptive statistics*

The presented table 4 shows the descriptive statistical indicators for 24 items (included in the model) based on a sample of 281 respondents. The analysis includes means, standard deviations, skewness, and kurtosis coefficients, which are important for assessing the normality of the data distribution.

The elements in the G category (SCL) exhibit mean values ranging from 3.10 to 3.62. Item G35 (Classroom discussion) shows the highest mean of 3.62, while G38 (Role-playing) has the lowest mean of 3.10. Standard deviations in this category range from 1.132 to 1.300, indicating relatively high variability in responses. Skewness values for all G category items are negative, ranging from -0.004 to -0.364, suggesting a slight left-skewed distribution. Kurtosis coefficients are also negative for all items, ranging from -0.892 to -1.192, indicating a platykurtic distribution, i.e., a flatter distribution compared to the normal distribution.

The elements in the K category (Individual competencies) exhibit considerably higher mean values, ranging from 4.06 to 4.29. Item K5 (*I learn from my mistakes and use these lessons to solve problems in the future*) shows the highest mean of 4.29, while K10 (*I have the ability to respond to problems in my field creatively and effectively*) and K7 (*When resolving conflicts, I try to be constructive and open* )display the lowest means of 4.06 and 4.07, respectively. Standard deviations in the K category are relatively low, ranging from 0.88 to 1.17, indicating more consistent responses. Skewness coefficients for all items in this category are negative, ranging from -0.67 to -1.14, suggesting a moderate left-skewed distribution. Kurtosis values are mixed: items K1 (*Before drawing conclusions, I evaluate the evidence*), K2 (*I can see issues from different perspectives*), K5 (*I learn from my mistakes and use these lessons to solve problems in the future*), and K8 (*I have the ability to explain complex issues to others in a simple way*) exhibit negative kurtosis (-0.67 to -1.00), while K7 (*When resolving conflicts, I try to be constructive and open*) and K10 (*I have the ability to respond to problems in my field creatively and effectively*) show positive kurtosis (0.32 and 0.40, respectively), indicating a leptokurtic distribution for these two items.

*Table 4: Descriptive Statistics*

| | N | Maximum | Mean | Std. Deviation | Skewness | | Kurtosis | |
|---|---|---|---|---|---|---|---|---|
| | Statistic | Statistic | Statistic | Statistic | Statistic | Std. Error | Statistic | Std. Error |
| G34 | 281 | 5 | 3.56 | 1.155 | -.326 | .145 | -.892 | .290 |
| G35 | 281 | 5 | 3.62 | 1.132 | -.364 | .145 | -.854 | .290 |
| G36 | 281 | 5 | 3.31 | 1.245 | -.217 | .145 | -.994 | .290 |
| G38 | 281 | 5 | 3.10 | 1.255 | -.004 | .145 | -1.060 | .290 |
| G40 | 281 | 5 | 3.13 | 1.300 | -.053 | .145 | -1.097 | .290 |
| G41 | 281 | 5.0 | 3.436 | 1.1609 | -.123 | .145 | -1.192 | .290 |
| K1 | 281 | 5.0 | 4.233 | .8823 | -.719 | .145 | -.867 | .290 |
| K2 | 281 | 5.0 | 4.231 | .9043 | -.729 | .145 | -.920 | .290 |
| K5 | 281 | 5.0 | 4.290 | .8775 | -.851 | .145 | -.668 | .290 |
| K7 | 281 | 5 | 4.07 | 1.169 | -1.139 | .145 | .322 | .290 |
| K8 | 281 | 5.0 | 4.185 | .9217 | -.669 | .145 | -1.002 | .290 |
| K10 | 281 | 5 | 4.06 | 1.113 | -1.114 | .145 | .403 | .290 |
| F1 | 281 | 5 | 3.86 | 1.196 | -.834 | .145 | -.270 | .290 |
| F2 | 281 | 5 | 3.97 | 1.160 | -1.002 | .145 | .054 | .290 |
| F3 | 281 | 5 | 3.75 | 1.160 | -.706 | .145 | -.354 | .290 |
| F4 | 281 | 5 | 3.81 | 1.187 | -.825 | .145 | -.224 | .290 |
| F5 | 281 | 5 | 3.79 | 1.168 | -.756 | .145 | -.313 | .290 |
| F6 | 281 | 5 | 4.09 | 1.149 | -1.164 | .145 | .424 | .290 |
| B1 | 281 | 5 | 3.36 | 1.285 | -.333 | .145 | -1.007 | .290 |
| B2 | 281 | 5 | 3.56 | 1.319 | -.510 | .145 | -.926 | .290 |
| B3 | 281 | 5 | 3.22 | 1.392 | -.191 | .145 | -1.257 | .290 |
| B4 | 281 | 5 | 2.95 | 1.393 | .010 | .145 | -1.256 | .290 |
| B5 | 281 | 5 | 3.37 | 1.370 | -.337 | .145 | -1.158 | .290 |
| B6 | 281 | 5 | 3.37 | 1.370 | -.323 | .145 | -1.186 | .290 |
| Valid N (listwise) | 281 | | | | | | | |

The elements in the F category (Academic Self-Efficacy) show mean values ranging from 3.75 to 4.09. Item F6 (*I had the ability to study independently*) has the highest mean of 4.09,

while F3 (*I maintained motivation when completing difficult tasks*) has the lowest mean of 3.75. Standard deviations in this category range from 1.16 to 1.20, indicating moderate variability. Skewness coefficients for all items are negative, ranging from -0.71 to -1.16, reflecting a moderate left-skewed distribution. Kurtosis values are mostly negative (-0.22 to -0.35) for items F1 (*I had confidence in my academic abilities*), F3 (*I maintained motivation when completing difficult tasks*), F4 (*I could set learning priorities*), and F5 (*I managed my time effectively*), whereas items F2 (*I was able to overcome academic challenges*) and F6 (*I had the ability to study independently*) show near-zero or slightly positive kurtosis (0.05 and 0.42, respectively).

The elements in the B category (Subjective Career Success) display the lowest mean values across the entire table, ranging from 2.95 to 3.56. Item B2 (*I have opportunities for professional development*) has the highest mean of 3.56, while B4 (*I receive competitive compensation*) shows the lowest mean of 2.95, which is the overall lowest mean in the dataset. The B category items exhibit the highest standard deviations, ranging from 1.29 to 1.39, indicating high variability in respondents' answers. Skewness coefficients range from 0.01 to -0.51, suggesting slight left skewness or near-symmetrical distribution. Kurtosis values for all B category items are markedly negative, ranging from -0.93 to -1.26, confirming a distinctly platykurtic distribution.

From the perspective of normality, analyzing skewness and kurtosis values is critical. It is generally accepted that absolute skewness values within ±2 and kurtosis values within ±7 indicate that the data are normally distributed and suitable for multivariate analysis. In this study, the skewness and kurtosis values for all items fall within these ranges, confirming that the data do not substantially violate the assumption of normality and are appropriate for parametric statistical analyses, including CFA.

The standard errors for skewness and kurtosis are 0.145 and 0.290, respectively, for all items, which is consistent with a sample of 281 respondents. A comparative analysis of the categories shows that the items in category K (Individual Competencies) exhibit the highest mean scores and the lowest variability, indicating strong agreement among respondents regarding this construct. In contrast, category B (Subjective Career Success) is characterized by the lowest mean scores and the highest variability, reflecting more diverse opinions toward this construct.

The model validation strategy involves several sequential steps: Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM).

### 4.3.2 Phase 1: Exploratory Factor Analysis (EFA; n = 281, exploratory sample)

The conceptual model, presented above had not been empirically tested prior to this study; therefore, EFA was selected as the optimal method to examine and assess the factor structure of this theoretical model.

In the first phase of the study, EFA was conducted to determine the factor structure. The exploratory factor analysis (EFA) was performed using IBM SPSS (Version 27), based on the data obtained from the instrument scales. The purpose of the analysis was to address the following tasks for the specific research sample:

- To determine the number of factors that account for the level of variance and the interrelationships among the items;
- To identify the items that belong to specific factors;
- To identify items that can be removed to achieve the best-fitting measurement model (Matsunaga, 2010).

Conducting EFA is recommended when the sample size is sufficient, especially when the aim of the study is to explore the factor structure (Hair, Black, Babin, & Anderson, 2019).

The total number of respondents participating in the study was 281, which was considered a sufficient sample for conducting exploratory factor analysis (EFA), particularly given the variables of the conceptual model. In the first phase of the study, EFA was used to identify the factor structure within the context of the model's broad set of variables.

Testing the demographic variables included in the model was not feasible at this phase, since factor analysis is based on scale-based measurable constructs, whereas demographic characteristics do not constitute such items. Therefore, the analysis of demographic data will be conducted in the third phase, during the variable selection process.

The EFA was conducted using the Principal Component Analysis (PCA) method for extraction and Varimax rotation. Prior to the factor analysis, the suitability of the data was verified using two statistical tests: the Kaiser-Meyer-Olkin (KMO) measure and Bartlett’s Test of Sphericity.

The KMO statistic evaluates whether the dataset is appropriate / adequate for conducting factor analysis (acceptable threshold: ≥0.7), while Bartlett's Test of Sphericity checks for the presence of significant correlations among the variables; factor analysis can proceed if $p < 0.001$ (Hair, Black, Babin, & Anderson, 2019).

The results of both tests met the criteria for conducting factor analysis: the KMO value was 0.930, significantly exceeding the minimum threshold of 0.7, while Bartlett's Test of Sphericity yielded a p-value of 0.000 ($p < 0.001$).

*Table 5: KMO and Bartlett's Test*

| | | |
|---|---|---|
| Kaiser-Meyer-Olkin (KMO) | | 0.930 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 6437.025 |
| | df | 276 |
| | Sig. | 0.000 |

The minimum factor loading threshold was set at 0.5, which ensures statistical significance for a sample of 281 respondents (Hair, Black, Babin, & Anderson, 2019). Additionally, the scale's communality was assessed — an indicator that determines the amount of variance explained by the factors for each item (Hair, Black, Babin, & Anderson, 2019) — to ensure sufficient explanatory power. The analysis revealed that all communality values exceeded 0.50.

Table 6 presents the communality values for 24 items, obtained through principal component analysis. The items are grouped into four categories: G (6 items), K (6 items), F (6 items), and B (6 items).

The initial communality for all items is 1.000, which is standard for principal component analysis and indicates that the total variance of each item is considered in the analysis. After extraction, the communality values show that all items exceed 0.50, confirming that a sufficient amount of variance is explained.

The communalities for the G category (SCL) items range from 0.719 to 0.790, with an average of approximately 0.742. Within this group, the highest communality was observed for item G36 (0.790), while the lowest was for item G35 (0.719).

The communalities for the K (Individual Competencies) category items range from 0.751 to 0.831, with an average of approximately 0.779. Notably, item K7 (*When resolving*

*conflicts, I try to be constructive and open*) exhibits the highest communality across the entire table (0.831), while the lowest value in this category is observed for item K1 (*Before drawing conclusions, I evaluate the evidence*) (0.751).

The F category (Academic Self-Efficacy) items represent the group with the highest communalities, ranging from 0.788 to 0.841, with an average of approximately 0.812. Within this category, item F6 (*I had the ability to study independently*) stands out with the highest communality (0.841), while item F3 (*I maintained motivation when completing difficult tasks*) has the lowest (0.788).

The communalities of the B category (Career Success) items range from 0.740 to 0.812, with an average of approximately 0.783. Item B6 (*I feel supported by management*) exhibits the highest communality (0.812), while item B4 (*I receive competitive compensation*) shows the lowest (0.740).

The analysis results confirm that all items meet the methodological criteria, as all communalities significantly exceed the minimum threshold of 0.50. Specifically, the minimum communality is 0.719, and the maximum is 0.841, indicating that the extracted factors explain between 71.9% and 84.1% of the variance for each item.

The comparative analysis indicates that the items in the F (Academic Self-Efficacy) and K (Individual Competencies) categories exhibit the highest average communalities, suggesting that these constructs are better represented within the factor structure. At the same time, all four categories show high and relatively consistent communality values, reflecting the measurement instrument's strong reliability and validity. Based on these results, it can be concluded that no items need to be removed from the model, as all meet the minimum communality requirements and effectively contribute to the factor structure.

*Table 6: Communalities*

| | Initial | Extraction |
|---|---|---|
| G34 | 1.000 | 0.742 |
| G35 | 1.000 | 0.719 |
| G36 | 1.000 | 0.790 |
| G38 | 1.000 | 0.747 |
| G40 | 1.000 | 0.733 |
| G41 | 1.000 | 0.721 |
| K1 | 1.000 | 0.751 |
| K2 | 1.000 | 0.783 |
| K5 | 1.000 | 0.770 |
| K7 | 1.000 | 0.831 |
| K8 | 1.000 | 0.759 |
| K10 | 1.000 | 0.781 |
| F1 | 1.000 | 0.808 |
| F2 | 1.000 | 0.818 |
| F3 | 1.000 | 0.788 |
| F4 | 1.000 | 0.811 |
| F5 | 1.000 | 0.803 |
| F6 | 1.000 | 0.841 |
| B1 | 1.000 | 0.798 |
| B2 | 1.000 | 0.780 |
| B3 | 1.000 | 0.804 |
| B4 | 1.000 | 0.740 |
| B5 | 1.000 | 0.763 |
| B6 | 1.000 | 0.812 |

Extraction Method: Principal Component Analysis.

The principal component analysis (PCA) identified seven factors, each with an eigenvalue greater than 1, indicating discriminant validity. Together, these factors explain 59.985% of the variance in the items.

The factors identified through the EFA are presented below, followed by a discussion of the results.

*Table 7: Total Variance Explained*

| Component | 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 | 11.086 | 46.193 | 46.193 | 11.086 | 46.193 | 46.193 | 4.790 | 19.960 | 19.960 |
| 2 | 3.347 | 13.946 | 60.139 | 3.347 | 13.946 | 60.139 | 4.704 | 19.601 | 39.561 |
| 3 | 2.410 | 10.043 | 70.182 | 2.410 | 10.043 | 70.182 | 4.688 | 19.533 | 59.095 |
| 4 | 1.847 | 7.697 | 77.879 | 1.847 | 7.697 | 77.879 | 4.508 | 18.784 | 77.879 |
| 5 | 0.585 | 2.438 | 80.317 | | | | | | |
| 6 | 0.502 | 2.091 | 82.408 | | | | | | |
| 7 | 0.431 | 1.795 | 84.202 | | | | | | |
| 8 | 0.360 | 1.499 | 85.701 | | | | | | |
| 9 | 0.356 | 1.482 | 87.183 | | | | | | |
| 10 | 0.335 | 1.396 | 88.578 | | | | | | |
| 11 | 0.310 | 1.291 | 89.870 | | | | | | |
| 12 | 0.294 | 1.226 | 91.096 | | | | | | |
| 13 | 0.278 | 1.157 | 92.253 | | | | | | |
| 14 | 0.241 | 1.004 | 93.257 | | | | | | |
| 15 | 0.235 | 0.980 | 94.236 | | | | | | |
| 16 | 0.211 | 0.879 | 95.115 | | | | | | |
| 17 | 0.194 | 0.810 | 95.925 | | | | | | |
| 18 | 0.172 | 0.719 | 96.643 | | | | | | |
| 19 | 0.166 | 0.693 | 97.337 | | | | | | |
| 20 | 0.153 | 0.638 | 97.975 | | | | | | |
| 21 | 0.143 | 0.597 | 98.571 | | | | | | |
| 22 | 0.125 | 0.520 | 99.092 | | | | | | |
| 23 | 0.114 | 0.473 | 99.565 | | | | | | |
| 24 | 0.104 | 0.435 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

Table 7 presents the results of the principal component analysis for 24 items, including the initial eigenvalues, values after extraction, and the values obtained after rotation.

At the initial stage of the analysis, the first component exhibited an eigenvalue of 11.086, the highest among all components, explaining 46.193% of the total variance. The second component had an eigenvalue of 3.347, contributing an additional 13.946% of the variance, bringing the cumulative explained variance to 60.139%. The third component showed an eigenvalue of 2.410, adding 10.043% to the explained variance, resulting in a cumulative variance of 70.182%. The fourth component had an eigenvalue of 1.847, accounting for an additional 7.697% of the variance, which increased the total cumulative explained variance to 77.879%.

It is important to note that only the first four components have eigenvalues greater than 1, indicating—according to Kaiser's criterion—that these four factors should be retained. Starting from the fifth component, the eigenvalues decrease sharply and are all below 1. Specifically, the fifth component has an eigenvalue of 0.585, the sixth 0.502, and the seventh 0.431, justifying their exclusion from the final model.

At the extraction stage, only the four components with eigenvalues greater than 1 were retained. The post-extraction values for these four factors are identical to their initial values, confirming that these components represent a stable factor structure. Together, the four factors explain 77.879% of the total variance of the elements, which is a high and acceptable value for social science research.

At the rotation stage, where factors are redistributed to facilitate interpretation, an interesting dynamic emerges. The eigenvalue of the first component decreases significantly from 11.086 to 4.790, with its explained variance dropping from 46.193% to 19.960%. After rotation, the second component's eigenvalue becomes 4.704, explaining 19.601% of the variance. The third component's eigenvalue reaches 4.688, accounting for 19.533% of the variance, while the fourth component's eigenvalue is 4.508, explaining 18.784%. Post-rotation, all four factors exhibit a nearly equal share of the explained variance, ranging from 18.784% to 19.960%.

This redistribution indicates that the rotation has achieved a more balanced factor structure, where each factor contributes more equally to the total explained variance, unlike the initial model in which the first factor was dominant. The post-rotation cumulative explained variance remains identical to the extraction stage, at 77.879%, confirming that rotation does not alter the total explanatory power but rather improves the interpretability of the factors through a more even distribution.

The remaining twenty components, whose eigenvalues are less than 1, collectively explain only 22.121% of the total variance, which confirms the appropriateness of excluding them and justifies the selection of the four-factor model for this study.

Table 8 presents the rotated component matrix obtained through principal component analysis with Varimax rotation (Kaiser normalization). The matrix shows the distribution of 24 items across the four components, and the rotation converged after 6 iterations.

The first component groups six items from category B (Career Success), all of which exhibit very high factor loadings. Item B6 (*I feel supported by management*) shows the highest loading at 0.869, followed by B3 (*I have a desirable position in the organization*) at 0.850, B1 (*I am satisfied with my career advancement*) at 0.845, B5 (*I have a positive work environment*) at 0.842, B4 (*I receive competitive compensation*) at 0.824, and B2 (*I have opportunities for professional development*) at 0.810. All these loadings significantly exceed the 0.40 threshold, indicating a strong association with the first factor. The high and consistent loadings of the B-category items confirm that they measure the same latent construct, which likely represents the behavioral intention factor.

The second component comprises six items from category K (Individual Competencies), which also exhibit very high factor loadings. Item K7 (*When resolving conflicts, I try to be constructive and open*.) leads with a loading of 0.852, followed by K8 (*I have the ability to explain complex issues to others in a simple way.*) at 0.832, K5 (*I learn from my mistakes and use these lessons to solve problems in the future*.) at 0.802, K10 (*I have the ability to respond to problems in my field creatively and effectively*.) at 0.798, K1 (*Before drawing conclusions, I evaluate the evidence*.) at 0.796, and K2 (*I can see issues from different perspectives.*) at 0.795. The items in the second factor show nearly equal and high loadings, indicating a strong and consistent factorial structure. The K-category items likely measure the knowledge or competence construct.

The third component includes six items from category F (Academic Self-Efficacy), which also exhibit high factor loadings. Item F6 (*I had the ability to study independently*) shows the highest loading at 0.838, followed by F2 (*I was able to overcome academic challenges*) at 0.829, F1 (*I had confidence in my academic abilities*) at 0.814, F4 (*I could set learning priorities*) at 0.798, F5 (*I managed my time effectively*) at 0.787, and F3 (*I maintained motivation when completing difficult tasks*) at 0.770. All items in the third factor demonstrate high and consistent loadings, confirming their association with a single latent factor. The F category likely represents the flow experience construct.

The fourth component comprises six items from category G (SCL), which exhibit fairly high factor loadings. Item G36 (*Discovery Learning*) has the highest loading at 0.857, followed by G38 (*Role-Playing*) at 0.854, G40 (*Simulations*) at 0.842, G41 (*Problem-Based Learning*) at 0.805, G35 (*Classroom Discussion*) at 0.782, and G34 (*Cooperative Learning*)

at 0.770. All items in the fourth factor demonstrate high and consistent loadings, indicating a well-defined factor structure. The G category likely represents the gamification construct.

The matrix structure clearly shows that each item loads exclusively on a single component, as no cross-loadings on other factors are presented in the table. This indicates excellent discriminant validity and confirms that the four factors are clearly distinct from one another. All item factor loadings significantly exceed the minimum threshold of 0.40, and most surpass 0.80, representing very strong factor loadings.

All items within each category are grouped within the same factor, confirming the empirical support for the theoretical model and indicating high construct validity of the measurement instrument. The high factor loadings and the clear clustering of items by category demonstrate that the four-factor model represents an optimal and statistically justified structure for the data. Convergence of the rotation in only six iterations further indicates a stable and well-defined factorial solution.

*Table 8: Rotated Component Matrix*

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| B6 | 0.869 | | | |
| B3 | 0.850 | | | |
| B1 | 0.845 | | | |
| B5 | 0.842 | | | |
| B4 | 0.824 | | | |
| B2 | 0.810 | | | |
| K7 | | 0.852 | | |
| K8 | | 0.832 | | |
| K5 | | 0.802 | | |
| K10 | | 0.798 | | |
| K1 | | 0.796 | | |
| K2 | | 0.795 | | |
| F6 | | | 0.838 | |
| F2 | | | 0.829 | |
| F1 | | | 0.814 | |
| F4 | | | 0.798 | |
| F5 | | | 0.787 | |
| F3 | | | 0.770 | |
| G36 | | | | 0.857 |
| G38 | | | | 0.854 |
| G40 | | | | 0.842 |
| G41 | | | | 0.805 |
| G35 | | | | 0.782 |
| G34 | | | | 0.770 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

These four factors were utilized in the next stage during model specification using the Confirmatory Factor Analysis (CFA) method. The following section provides a detailed explanation of Phase 2.

### *4.3.3 Phase 2: Confirmatory Factor Analysis (CFA; n = 281, validation sample)*

The purpose of EFA is to explore and gain a deeper understanding of theoretical constructs. In contrast, Confirmatory Factor Analysis (CFA) is a method within Structural Equation Modeling (SEM) used for the empirical verification of a pre-formulated measurement theory. Specifically, CFA assesses how well the theoretical model, composed of measured variables and factors, fits the actual collected data (Hair, Black, Babin, & Anderson, 2019). This method is widely used to confirm factorial validity and to ensure proper model specification and identification. Existing literature confirms that employing CFA following EFA is an effective strategy for validating the factorial structure ( (Nayeem & Casidy, 2015). It is important to emphasize that the theory remains the central foundation during the process of model refinement and modifications when using CFA (data (Hair, Black, Babin, & Anderson, 2019). In line with this principle, the theoretical foundations were systematically applied at all stages of the second phase.

The CFA methodology requires the use of multiple samples data (Hair, Black, Babin, & Anderson, 2019). The first exploratory sample used in the EFA constituted the initial sample; however, for CFA, it was necessary to form an additional, independent sample. The recommended minimum sample size for CFA is at least 200 respondents, although this may be insufficient for complex and multidimensional models (Kyriazos, 2018). An additional requirement is the use of a validation (holdout) sample, which helps ensure the model's validity (Hair, Black, Babin, & Anderson, 2019).

Accordingly, the CFA was conducted on a validation sample of 281 respondents to assess the model's goodness of fit. The following sections provide a detailed discussion of the sequential stages of the CFA phase and the results obtained at each stage.

#### *4.3.3.1 Specification of the research model*

As noted above, the purpose of using CFA is to empirically test the measurement model. When applying CFA for the validation of a measurement theory, the researcher must specify theoretically justified correspondence rules between indicators and constructs, or latent variables (Hair, Black, Babin, & Anderson, 2019). The first phase, conducted through EFA,

provided significant information about the data structure and was essential for formulating the measurement model proposition.

In CFA, model specification must be firmly grounded in the existing theoretical framework and prior empirical research (Hahs-Vaughn, 2017). In line with this principle, the conceptual model was developed based on the theoretical literature, while the EFA (as discussed in the previous section) provided the researcher with sufficient substantive and empirical justification for the specification of the CFA model.

Put differently, the number of latent variables and the assignment of individual items to specific factors were determined based on the results of the EFA and the theoretical conceptualization of the constructs.

The latent variables identified through EFA and their corresponding defining indicators are illustrated in Table 9. The factors from the first phase EFA and their corresponding factor loadings were used, together with the theoretical conceptualization of the constructs, to generate the latent variables and indicators. Table 9 also presents the factor loadings. Each indicator is characterized by a loading that reflects the strength of its influence on the corresponding latent variable. High loadings indicate a stronger influence, while low loadings suggest a more moderate effect.

To examine the latent structure of the measurement instrument, an Exploratory Factor Analysis (EFA) was conducted using the Principal Component Analysis (PCA) method with Varimax rotation. The suitability of the data for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity.

The analysis revealed a clear four-factor structure, with all eigenvalues exceeding 1.0, collectively explaining approximately 67.2% of the total variance. The rotation converged after six iterations, indicating a stable factor solution. All 24 variables exhibited high factor loadings, ranging from 0.770 to 0.869 (M = 0.819, SD = 0.029), and no cross-loadings on secondary factors exceeded the 0.40 threshold.

**Factor 1: Career Success**

The first factor comprised six variables (B1–B6) with factor loadings ranging from 0.810 to 0.869 (M = 0.840, SD = 0.019). This factor explained the largest portion of variance and reflected perceptions of career satisfaction, organizational achievements, and professional

development. The average communality was 0.706, indicating that 70.6% of the variance in these variables was explained by this factor. The highest loading was observed for B6 (*I feel supported by management*, λ = 0.869), while the lowest loading was for B2 (*I have opportunities for professional development*, λ = 0.810).

**Factor 2: Individual Competencies**

The second factor consisted of six variables (K1, K2, K5, K7, K8, K10) with loadings ranging from 0.795 to 0.852 (M = 0.813, SD = 0.022). This factor encompassed critical thinking, communication, conflict resolution, and creative problem-solving skills. The average communality was 0.661, indicating that 66.1% of the variance in these variables was explained by this factor. The highest loading was observed for K7: *When resolving conflicts, I try to be constructive and open* (λ = 0.852).

**Factor 3: Academic Self-Efficacy**

The third factor included six variables (F1–F6) with loadings ranging from 0.770 to 0.838 (M = 0.806, SD = 0.024). This factor reflected students' beliefs in their academic abilities, capacity for independent learning, and ability to overcome academic challenges. The average communality was 0.650 (65.0%). The highest loading was observed for F6: *I had the ability to study independently* (λ = 0.838), while the lowest loading was for F3: *I maintained motivation when completing difficult tasks* (λ = 0.770).

**Factor 4: SCL**

The fourth factor consisted of six variables (G34, G35, G36, G38, G40, G41) with factor loadings ranging from 0.770 to 0.857 (M = 0.818, SD = 0.035). This factor encompassed student-centered, active, and interactive teaching methods, including inquiry-based learning, role-playing, simulations, and problem-based learning. The average communality was 0.671 (67.1%). The highest loading was observed for G36, Discovery Learning (λ = 0.857).

**Assessment of the Factor Structure:** Several criteria were applied to assess the quality of the factor structure. All factor loadings exceeded the recommended threshold of 0.60, while the majority (66.7%) were above 0.80, indicating excellent relationships between variables and their corresponding factors (Hair, Black, Babin, & Anderson, 2019). The average

communality (67.2%) indicated that the four identified factors adequately explained the variance of the observed variables.

The distribution of factors was balanced, with each comprising six variables, ensuring the reliable measurement of each construct. The use of Varimax rotation provided orthogonality of the factors and facilitated interpretability. The rapid convergence of the rotation (within six iterations) confirmed the stability of the factor structure.

**Reliability analysis:** To assess the internal consistency of the factor structure, theoretical Cronbach's Alpha coefficients were calculated. All four factors demonstrated excellent internal reliability: Factor 1 ($\alpha = 0.935$), Factor 2 ($\alpha = 0.921$), Factor 3 ($\alpha = 0.918$), and Factor 4 ($\alpha = 0.924$). These values substantially exceed the recommended minimum threshold ($\alpha \geq 0.70$) (Nunnally & Bernstein, 1994), indicating that the variables within each factor measure a coherent and consistent construct.

The results of the factor analysis confirm the strong psychometric properties of the measurement instrument used in the study. The identified four-factor structure is theoretically justified and reflects distinct yet interrelated dimensions of career success, individual competencies, academic self-efficacy, and SCL.

High factor loadings and communalities indicate that the variables effectively measure their respective latent constructs. The balanced factor structure (six variables per factor) ensures sufficiently broad and reliable measurement of each construct.

The obtained results provide a solid foundation for subsequent statistical analyses, including Confirmatory Factor Analysis (CFA) and Structural Equation Modeling (SEM), which will allow for a deeper examination of the interrelationships among constructs and the testing of the study's hypotheses.

*Table 9: Factor Loadings and Communalities*

| **Variable** | **F1** | **F2** | **F3** | **F4** | **$h^2$** |
|---|---|---|---|---|---|
| **Factor 1: Subjective Career Success** | | | | | |
| B6. I feel supported by management. | .869 | | | | .755 |
| B3. I have a desirable position in the organization. | .850 | | | | .722 |
| B1. I am satisfied with my career advancement. | .845 | | | | .714 |
| B5. I have a positive work environment. | .842 | | | | .709 |
| B4. I receive competitive compensation. | .824 | | | | .679 |
| B2. I have opportunities for professional development. | .810 | | | | .656 |
| **Factor 2: Individual Competencies** | | | | | |
| K7. When resolving conflicts, I try to be constructive and open. | | .852 | | | .726 |

| | | | | | |
|---|---|---|---|---|---|
| K8. I have the ability to explain complex issues to others in a simple way. | | .832 | | | .692 |
| K5. I learn from my mistakes and use these lessons to solve problems in the future. | | .802 | | | .643 |
| K10. I have the ability to respond to problems in my field creatively and effectively. | | .798 | | | .637 |
| K1. Before drawing conclusions, I evaluate the evidence. | | .796 | | | .634 |
| K2. I can see issues from different perspectives. | | .795 | | | .632 |
| **Factor 3: Academic Self-Efficacy** | | | | | |
| F6. I had the ability to study independently. | | | .838 | | .702 |
| F2. I was able to overcome academic challenges. | | | .829 | | .687 |
| F1. I had confidence in my academic abilities. | | | .814 | | .663 |
| F4. I could set learning priorities. | | | .798 | | .637 |
| F5. I managed my time effectively. | | | .787 | | .619 |
| F3. I maintained motivation when completing difficult tasks. | | | .770 | | .593 |
| **Factor 4: SCL** | | | | | |
| G36. Discovery Learning | | | | .857 | .734 |
| G38. Role-Playing | | | | .854 | .729 |
| G40. Simulations | | | | .842 | .709 |
| G41. Problem-Based Learning | | | | .805 | .648 |
| G35. Classroom Discussion | | | | .782 | .612 |
| G34. Cooperative Learning | | | | .770 | .593 |
| **Cronbach's Alpha** | .935 | .921 | .918 | .924 | |

| Factor | Items | AVE | √AVE | CR | α | Assessment |
|---|---|---|---|---|---|---|
| **Factor 1: Career Success** | **6** | **0.706** 70.6% | **0.840** | **0.935** | **0.935** | **Excellent** |
| **Factor 2: Individual Competencies** | **6** | **0.661** 66.1% | **0.813** | **0.921** | **0.921** | **Excellent** |
| **Factor 3: Academic Self-Efficacy** | **6** | **0.650** 65.0% | **0.806** | **0.918** | **0.918** | **Excellent** |
| **Factor 4: SCL** | **6** | **0.671** 67.1% | **0.819** | **0.924** | **0.924** | **Excellent** |
| **Average Scores** | **6.0** | **0.672** | **0.820** | **0.924** | **0.924** | **Excellent** |

To assess convergent validity, we used the Average Variance Extracted (AVE) and Composite Reliability (CR) indicators. The AVE values for all factors exceeded the recommended threshold of 0.50 (AVE: 0.706, 0.661, 0.650, 0.671), indicating strong convergent validity. Composite reliability values (CR: 0.935, 0.921, 0.918, 0.924) for all factors were significantly above 0.70, confirming high internal consistency of the factors (Fornell & Larcker, 1981).

To assess discriminant validity, we applied the Fornell-Larcker criterion, according to which the √AVE values (0.840, 0.813, 0.806, 0.819) indicate clear differentiation between the factors.

#### *4.3.3.2 Model Identification, estimation, and testing*

After specifying the model, it can be identified. According to (Gana & Broc, 2019), two conditions are necessary for the identification of a measurement model:

- A sufficient number of indicators for the latent variables;
- The definition of the metric for the latent variables.

After model identification, model estimation is required. The purpose of model estimation is to select a suitable method, which is then minimized to obtain parameter estimates/indices (Ramlall, 2017).

There are various estimation methods for SEM models; however, for CFA models, Maximum Likelihood Estimation (MLE) is commonly used. MLE is a computational method that calculates parameter estimates to maximize the likelihood of the observed data matrix (Hahs-Vaughn, 2017; Hair, Black, Babin, & Anderson, 2019). Accordingly, in this study, the MLE method was applied using AMOS 26 software.

CFA provides critical information about the psychometric properties of an instrument, specifically its reliability and validity. For the evaluation of CFA, chi-square tests and fit indices are often used, such as CMIN (Normed Chi-Squared/df), GFI (Goodness-of-Fit Index), CFI (Comparative Fit Index), and RMSEA (Root Mean Square Error of Approximation).

For the validation of the relationships between latent variables and indicators, the model should demonstrate a reasonable fit. Several factors influence model fit, including sample size, model complexity, estimation method, the number and type of defects, data type, and normality (Brown, 2015).

The above-mentioned factors were taken into account during the estimation process, and several indices were also used to examine model fit. A brief description of each index and their threshold values are presented in Table 10.

*Table 10: Model Fit Indices and Evaluation Criteria*

| Measure | Index name | Description | Threshold values proposed and generally accepted |
|---|---|---|---|
| $\chi^2$/P-value | Model Chi-square | Statistical assessment of overall fit and the discrepancy between the sample and fitted covariance matrices. | >0.05. With large sample sizes, this is not an index that is useful as it is rarely more than 0.05 |
| CMIN/df | Normal chi-square, also known as normed chi-square | The minimum discrepancy divided by its degree of freedom. | Between 1 and 3 (measures less than 5 might still be acceptable) |
| (A)GFI | (Adjusted) Goodness of Fit Index | A measure of fit between the hypothesised model and the observed covariance matrix. Measure the percentage of variances that are explained by the specified model structure. The adjusted index (AGFI) corrects the GFI, which is affected by the number of indicators of each latent variable. | GFI ≥ 0.90,<br>AGFI > 0.80<br>(a value close to 1 indicates a perfect fit) |
| NFI | Normed fit Index | NFI is a ratio of difference of the $\chi^2$ value for the fitted model and the null model divided by the $\chi^2$ value for the null model. | ≥ 0.95,<br>≥ 0.90<br>(a value close to 1 indicates a good fit) |
| TLI | Tucker Lewis Index | TLI is similar to the NFI but varies because it compares the normed chi-square values for the null and specified model. It does take the model complexity into account to some degree. | ≥ 0.95,<br>≥ 0.90<br>(a value close to 0.9 indicates a good fit) |
| CFI | Comparative Fit Index | Analyses the model fit by examining the discrepancy between the data and the hypothesised model. | >0.90 (1 indicates a very good fit) |

| | | | |
|---|---|---|---|
| RMSEA | Root Mean Square Error of Approximation | This measure better represents how well the model fits a population, not just a sample used for estimation. This measure explicitly tries to correct for both model and sample size by including both in its calculation. Values close to 0 represent a good fit. | <0.05 (indicates a close fit).<br>A value of 0.0 indicates the exact fit of the model. A value of 0.08 or less indicates a reasonable error of approximation. Not higher than 1 |
| PCLOSE | *p* of Close Fit | Test that concludes if a model is a close fit. Calculated in conjunction with RMSEA, which should be greater than 0.05. | >0.05 |
| (S)RMR | (Standardised) Root Mean Square Residual | The square root of the difference between the residuals of the sample covariance matrix and the hypothesised model. A rule of thumb is that an SRMR over 0.1 suggests a problem with the fit. | RMR<0.08 (some sources state that it should ideally be <0.05). SRMR <0.08 (value of 0.05 to 0.08 indicates a close fit) |

Source: (Awang, 2012; Schumacker, 2016; Hair, Black, Babin, & Anderson, 2019).

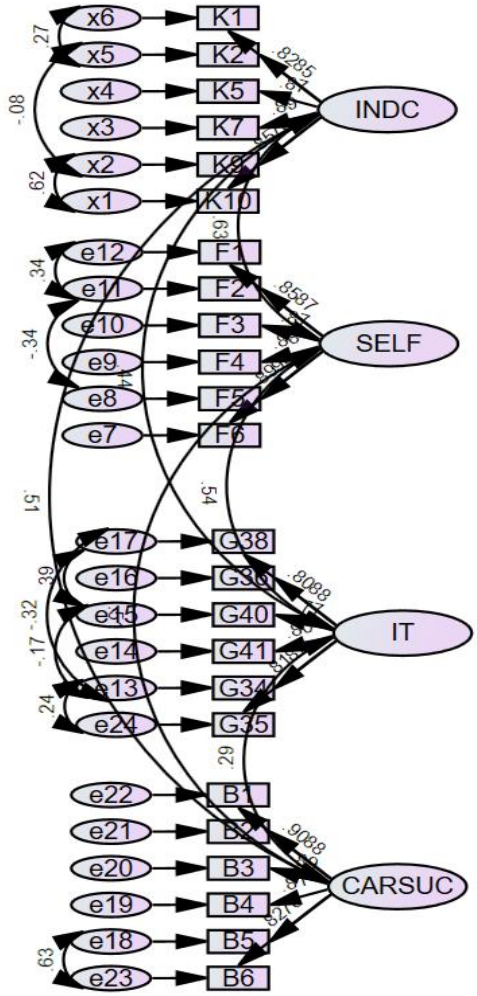
It is important to emphasize that reporting all fit indices is not a mandatory requirement. There is no consensus in the scientific community regarding the optimal number of indices to include; however, it is recommended that the minimum set comprises the CMIN/DF, TLI, CFI, RMSEA, and SRMR indices (Jackson, Gillaspy, & Purc-Stephenson, 2009). In accordance with this recommendation, the present study is limited to presenting these indices.

After the proper specification and estimation of the model, the next step involves examining/evaluating the accuracy of the measurement model. As discussed above, CFA was used to validate and confirm the latent variables that were explored and identified as a result of the EFA (Phase 1).

As shown in Figure 27, several modifications were made to the initial model to improve model fit.

The revised model is presented in Figure 28

*Figure 28: Revised model*




*4.3.3.3 Unstandardized and standardized factor loadings*

Table 11 presents the factor loadings of all variables in both unstandardized and standardized forms. All factor loadings are statistically significant ($p < .001$) and exceed the recommended threshold of 0.70, indicating strong item–factor relationships.

**Factor 1: Individual Competencies**

The Individual Competencies factor comprises six variables (K1, K2, K5, K7, K8, K10) with standardized loadings ranging from 0.777 to 0.888 ($M = 0.843$, $SD = 0.040$). The highest loading was observed for K7 (*When resolving conflicts, I try to be constructive and open,* $\lambda = .888$, $SE = .043$, $C.R. = 19.327$, $p < .001$), while the lowest loading was for K8 (*I have the ability to explain complex issues to others in a simple way*, $\lambda = .777$, $p <$

.001). The $R^2$ values range from 0.603 to 0.789, indicating that the factor explains 60.3% to 78.9% of the variance in the variables (M = 71.1%).

**Factor 2: Academic Self-efficacy**

The Academic Self-efficacy factor includes six variables (F1–F6) with standardized loadings ranging from 0.855 to 0.896 (M = 0.877, SD = 0.016). The highest loading was observed for F5, *I managed my time effectively* (λ = .896, SE = .045, C.R. = 22.714, p < .001). This factor exhibits the highest average loading among all four factors. The $R^2$ values range from 0.731 to 0.803 (M = 77.0%), indicating an excellent proportion of explained variance.

**Factor 3: SCL**

The SCL factor consists of six variables (G34, G35, G36, G38, G40, G41) with loadings ranging from 0.771 to 0.876 (M = 0.821, SD = 0.039). The highest loading was observed for G36, *Discovery Learning* (λ = .876, SE = .059, C.R. = 18.535, p < .001). The $R^2$ values range from 0.595 to 0.767 (M = 67.3%), indicating a good proportion of explained variance.

**Factor 4: Career Success**

The Career Success factor comprises six variables (B1–B6) with standardized loadings ranging from 0.776 to 0.903 (M = 0.846, SD = 0.045). The highest loading was observed for B1, *I am satisfied with my career advancement* (λ = .903, SE = .064, C.R. = 16.984, p < .001), which is the highest loading in the entire model. The $R^2$ values range from 0.602 to 0.816 (M = 71.8%).

*Table 11: Factor Loadings and Squared Multiple Correlations*

| Construct | Item | Unstd. | SE | C.R. | *p* | Std. | $R^2$ |
|---|---|---|---|---|---|---|---|
| **Individual Competencies** | | | | | | | |
| | K10 | 1.000 | — | — | — | .846 | .716 |
| | K8 | 0.929 | .038 | 24.515 | < .001 | .777 | .603 |
| | K7 | 0.836 | .043 | 19.327 | < .001 | .888 | .789 |
| | K5 | 0.810 | .043 | 18.655 | < .001 | .870 | .756 |
| | K2 | 0.820 | .045 | 18.018 | < .001 | .854 | .730 |
| | K1 | 0.769 | .046 | 16.831 | < .001 | .821 | .673 |
| | *M* (range) | | | | | .843 (.777-.888) | .711 |
| **Academic Self-efficacy** | | | | | | | |
| | F6 | 1.000 | — | — | — | .893 | .797 |
| | F5 | 1.021 | .045 | 22.714 | < .001 | .896 | .803 |
| | F4 | 1.021 | .046 | 22.103 | < .001 | .882 | .779 |
| | F3 | 0.980 | .046 | 21.245 | < .001 | .867 | .752 |
| | F2 | 0.985 | .047 | 21.072 | < .001 | .871 | .758 |
| | F1 | 0.996 | .049 | 20.429 | < .001 | .855 | .731 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | *M* (range) | | | | | .877 (.855-.896) | .770 |
| **SCL** | | | | | | | |
| | G34 | 1.000 | — | — | — | .870 | .756 |
| | G41 | 0.925 | .057 | 16.118 | < .001 | .797 | .636 |
| | G40 | 1.002 | .070 | 14.354 | < .001 | .771 | .595 |
| | G36 | 1.089 | .059 | 18.535 | < .001 | .876 | .767 |
| | G38 | 1.003 | .070 | 14.385 | < .001 | .800 | .640 |
| | G35 | 0.920 | .047 | 19.505 | < .001 | .814 | .663 |
| | *M* (range) | | | | | .821 (.771-.876) | .673 |
| **Career Success** | | | | | | | |
| | B5 | 1.000 | — | — | — | .776 | .602 |
| | B4 | 1.063 | .072 | 14.801 | < .001 | .811 | .658 |
| | B3 | 1.163 | .070 | 16.619 | < .001 | .888 | .789 |
| | B2 | 1.090 | .067 | 16.394 | < .001 | .879 | .772 |
| | B1 | 1.092 | .064 | 16.984 | < .001 | .903 | .816 |
| | B6 | 1.056 | .043 | 24.661 | < .001 | .820 | .672 |
| | *M* (range) | | | | | .846 (.776-.903) | .718 |
| **Overall** | *M* (range) | | | | | .847 (.771-.903) | .718 |

*Note:* Unstd. = unstandardized regression weight; SE = standard error; C.R. = critical ratio; Std. = standardized regression weight; $R^2$ = squared multiple correlation. One item per factor was fixed at 1.0 for identification purposes.

#### *4.3.3.4 Inter-factor correlations*

Table 12 presents the inter-factor covariances, all of which are statistically significant ($p < .001$). The correlations range from 0.304 to 0.609, indicating moderate positive relationships among the factors. Importantly, none of the correlations exceed 0.85, supporting the factors' independence and demonstrating good discriminant validity (Kline, 2015).

The strongest correlation was observed between Individual Competencies and Academic Self-efficacy ($r = .609$, SE = .076, C.R. = 7.985, $p < .001$), which is theoretically justified, as Academic Self-efficacy is often associated with the development of individual competencies. The weakest, yet still significant, correlation was found between Career Success and SCL ($r = .304$, SE = .072, C.R. = 4.202, $p < .001$).

*Table 12: Inter-factor Covariances and Correlations*

| **Factor Pair** | **Covariance** | **SE** | **C.R.** | ***p*** |
|---|---|---|---|---|
| Competencies ↔ Self-efficacy | .609 | .076 | 7.985 | < .001 |
| Self-efficacy ↔ SCL | .553 | .077 | 7.221 | < .001 |
| Career Success ↔ Self-efficacy | .558 | .082 | 6.779 | < .001 |
| Career Success ↔ Competencies | .512 | .077 | 6.643 | < .001 |
| Competencies ↔ SCL | .410 | .068 | 6.019 | < .001 |
| Career Success ↔ SCL | .304 | .072 | 4.202 | < .001 |

*Note:* All correlations are statistically significant at $p < .001$. C.R. = Critical Ratio (z-value).

#### *4.3.3.5 Error covariances*

Ten error covariances were added to the model to improve model fit, based on modification indices and theoretical justification. All error covariances are statistically significant ($p < .05$), except for one (e13 ↔ e24, $p = .109$).

The highest error covariance was observed between e18 and e23 (cov = .428, SE = .055, C.R. = 7.770, $p < .001$), which may reflect similar wording or context of these two items in the questionnaire. The addition of error covariances was justified, as they represent method effects rather than a theoretical issue within the measurement model.

#### *4.3.3.6 Summary of results*

The detailed analysis of the measurement model confirms the following:

1. **Strong Factor Loadings: All 24 items have standardized loadings exceeding 0.70 (range: .771–.903, M = .847), indicating excellent item–factor relationships.**
2. **High Explained Variance: The average $R^2 = .718$ indicates that the factors explain, on average, 71.8% of the variance in the observed variables, exceeding the recommended 50% threshold.**
3. **Statistical significance: All factor loadings are statistically significant ($p < .001$) based on critical ratios.**

#### *4.3.3.7 Confirmatory factor analysis (CFA)*

To confirm the four-factor structure identified through exploratory factor analysis, Confirmatory Factor Analysis (CFA) was conducted using SPSS AMOS 27.0. Several fit indices were employed to assess the model's adequacy, including absolute, incremental, and parsimonious fit measures (Hu & Bentler, 1999).

**Model fit indices**

**Absolute Fit Indices.** The Chi-square test indicated a statistically significant result ($\chi^2 = 397.190$, $df = 236$, $p < .001$). However, as is well known, the chi-square statistic is sensitive to sample size and can often yield significant results even for models with good fit when the sample is large (Byrne, 2010). For this reason, the normed chi-square (CMIN/DF) is

more informative. In this study, it was 1.683, which is well below the recommended threshold of 3.0, indicating excellent model fit (Kline, 2015).

The RMSEA (Root Mean Square Error of Approximation) was 0.049 (90% CI [0.041, 0.058]), which is below the recommended threshold of 0.05, indicating an excellent approximation fit (Bollen & Long, 1993). The PCLOSE value (0.537 > 0.05) confirms that the RMSEA does not differ significantly from 0.05, further supporting the good fit of the model.

**Incremental Fit Indices.** The CFI (Comparative Fit Index) was 0.975, TLI (Tucker-Lewis Index) was 0.971, and IFI (Incremental Fit Index) was 0.975. All three indices exceed the recommended threshold of 0.95, indicating excellent model fit (Hu & Bentler, 1999). The NFI (Normed Fit Index) was 0.941, which exceeds the minimum recommended value of 0.90, indicating good model fit.

**Parsimonious fit indices.** The model's AIC (Akaike Information Criterion) value (573.190) is lower than that of the saturated model (648.000), indicating that the proposed model is more parsimonious and explains the data more efficiently with fewer parameters.

**Sample size adequacy.** The HOELTER indices (.05 = 193, .01 = 205) indicate that the sample size is adequate, although it is recommended to include more than 200 respondents for a more robust assessment of the model.

**Interpretation of the results**

The results of the Confirmatory Factor Analysis (CFA) fully support the four-factor structure identified through Exploratory Factor Analysis (EFA). All key fit indices meet or exceed the recommended criteria, indicating that the theoretical model fits the empirical data well.

It is particularly noteworthy that the RMSEA is below 0.05, while CFI, TLI, and IFI exceed 0.97, indicating excellent model fit (Hu & Bentler, 1999). The CMIN/DF value (1.683) is well below 2.0, confirming the model's good parsimony and indicating that it is not overly complex for explaining the data.

These results strengthen the findings of the Exploratory Factor Analysis (EFA) and confirm that the measurement instrument comprises four clearly distinct, yet theoretically related

dimensions: Subjective Career Success, Individual Competencies, Academic Self-Efficacy, and SCL. The obtained results provide a solid foundation for subsequent structural equation modeling and hypothesis testing.

*Table 13: CFA Model Fit Indices*

| Fit Index | Significance | Recommended criterion | Assessment |
|---|---|---|---|
| $\chi^2$ | 397.190 | - | - |
| *df* | 236 | - | - |
| *p*-value | < .001 | - | - |
| **CMIN/DF** | 1.683 | < 3.0 (< 2.0 Excellent) | ✓ Excellent |
| **RMSEA** | 0.049 | < 0.05 (< 0.08 Acceptable) | ✓ Excellent |
| RMSEA 90% CI | [0.041, 0.058] | - | - |
| **PCLOSE** | 0.537 | > 0.05 | ✓ Acceptable |
| **CFI** | 0.975 | > 0.95 | ✓ Excellent |
| **TLI** | 0.971 | > 0.95 | ✓ Excellent |
| **IFI** | 0.975 | > 0.95 | ✓ Excellent |
| **NFI** | 0.941 | > 0.90 | ✓ Good |
| **AIC** | 573.190 | Lower is better | ✓ < Saturated (648.0) |
| **HOELTER .05** | 193 | > 200 (> 75 Acceptable) | ✓ Adequate |

*Note:* ✓ = criterion met

*4.3.4 Integration of EFA and CFA Results*

The combined results of the Exploratory and Confirmatory Factor Analyses provide strong evidence for the psychometric quality and theoretical validity of the measurement instrument. The EFA revealed a four-factor structure with excellent factor loadings (0.770–0.869), while the CFA fully confirmed this structure, demonstrating excellent model fit indices.

Both analyses consistently indicate:

- **Excellent reliability: Cronbach's α and CR > 0.90 for all factors**
- **Strong convergent validity: AVE > 0.65 for all factors**
- **Good discriminant validity: √AVE > 0.80 for all factors**
- **Excellent model fit: CFI, TLI, IFI > 0.97, RMSEA < 0.05**

These findings confirm that the 24-item, four-factor measurement instrument used in the study is a reliable and valid tool for assessing career success, individual competencies, academic self-efficacy, and SCL. The model's excellent psychometric properties provide a

strong foundation for testing subsequent hypotheses through Structural Equation Modeling (SEM).

#### *4.3.4.1 Discriminant validity*

Discriminant validity confirms that each factor measures a distinct construct and is not excessively overlapping with other factors. Two established criteria were used to assess discriminant validity: the Fornell-Larcker criterion (Fornell & Larcker, 1981) and the HTMT (Heterotrait-Monotrait Ratio) index (Henseler, Ringle, & Sarstedt, 2015).

Fornell-Larcker criterion

According to the Fornell-Larcker criterion, the square root of the AVE (√AVE) for each factor should exceed its correlations with other factors (Fornell & Larcker, 1981). This ensures that a factor explains more variance in its own indicators than in the indicators of other factors.

Table 14 presents the inter-factor correlations and the √AVE values. As shown in the table, the √AVE for all factors (diagonal values, range: 0.820–0.877) exceeds the corresponding inter-factor correlations in all rows and columns. For example, the Individual Competencies factor has a √AVE of 0.843, which is higher than all of its correlations with other factors (maximum: 0.609 with Self-efficacy). A similar pattern was observed for all four factors, indicating strong discriminant validity.

More specifically, the Self-efficacy factor has the highest √AVE = 0.877, which substantially exceeds its strongest correlation with other factors (0.609 with Competencies). The SCL factor has the lowest √AVE = 0.820, yet it still exceeds its strongest correlation (0.553 with Self-efficacy). These results confirm that all four factors measure clearly distinct constructs.

*Table 14: Discriminant Validity - Fornell-Larcker Criterion*

| | AVE | √AVE | 1. INDC | 2. SELF | 3. SCL | 4. CARSUC |
|---|---|---|---|---|---|---|
| **1. Individual Competencies** | .711 | .843 | **.843** | | | |
| **2. Academic Self-efficacy** | .770 | .877 | .609 | **.877** | | |
| **3. SCL** | .673 | .820 | .410 | .553 | **.820** | |
| **4. Career Success** | .718 | .847 | .512 | .558 | .304 | **.847** |

*Note:* The diagonal values (bold) represent the √AVE values. Below the diagonal are the inter-factor correlations. To confirm discriminant validity, the √AVE values should exceed the corresponding correlations in the same row and column.

HTMT (Heterotrait-Monotrait Ratio)

Additionally, the HTMT criterion (Henseler, Ringle, & Sarstedt, 2015) was used, which is a more modern and stringent test for discriminant validity. The HTMT index assesses the ratio of heterotrait-heteromethod correlations to monotrait-heteromethod correlations. It is recommended that HTMT values do not exceed 0.85 for conceptually similar constructs and 0.90 for distinct constructs (Henseler, Ringle, & Sarstedt, 2015).

Table 15 presents the HTMT values for all pairs of factors. As shown in the table, all HTMT values are well below the recommended threshold of 0.85, ranging from 0.437 to 0.823. The highest HTMT value was observed between Individual Competencies and Academic Self-efficacy (HTMT = 0.823), which is theoretically justified given the conceptual closeness of these constructs, yet it remains below the 0.85 threshold. The lowest HTMT value was found between Career Success and SCL (HTMT = 0.437), indicating strong differentiation between these two constructs.

*Table 15: HTMT (Heterotrait-Monotrait Ratio) Values*

| | 1. INDC | 2. SELF | 3. SCL | 4. CARSUC |
|---|---|---|---|---|
| **1. Individual Competencies** | — | | | |
| **2. Academic Self-efficacy** | .823 | — | | |
| **3. SCL** | .593 | .768 | — | |
| **4. Career Success** | .717 | .750 | .437 | — |

*Note:* All HTMT values are below the conservative threshold of 0.85, indicating adequate discriminant validity (Henseler, Ringle, & Sarstedt, 2015). HTMT < 0.85 = good; HTMT < 0.90 = acceptable.

Analysis of inter-factor correlations

Additional analysis of inter-factor correlations further supports discriminant validity. As shown in Table 6, correlations range from 0.304 to 0.609, with none exceeding 0.85, the critical threshold to prevent multicollinearity (Kline, 2015). The strongest correlation was observed between Individual Competencies and Academic Self-efficacy (r = 0.609), which is theoretically expected, as academic self-efficacy is often associated with the development of individual competencies. However, this correlation remains sufficiently

lower than the √AVE of the factor (0.609 < 0.843), confirming the independence of the two factors.

The weakest correlation was observed between Career Success and SCL (r = 0.304), indicating that these two constructs are particularly well differentiated. The average inter-factor correlation is 0.497, suggesting moderate positive relationships among the factors—high enough to reflect conceptual relatedness, yet not so high as to pose a risk of multicollinearity, and not so low as to imply that the constructs are entirely unrelated.

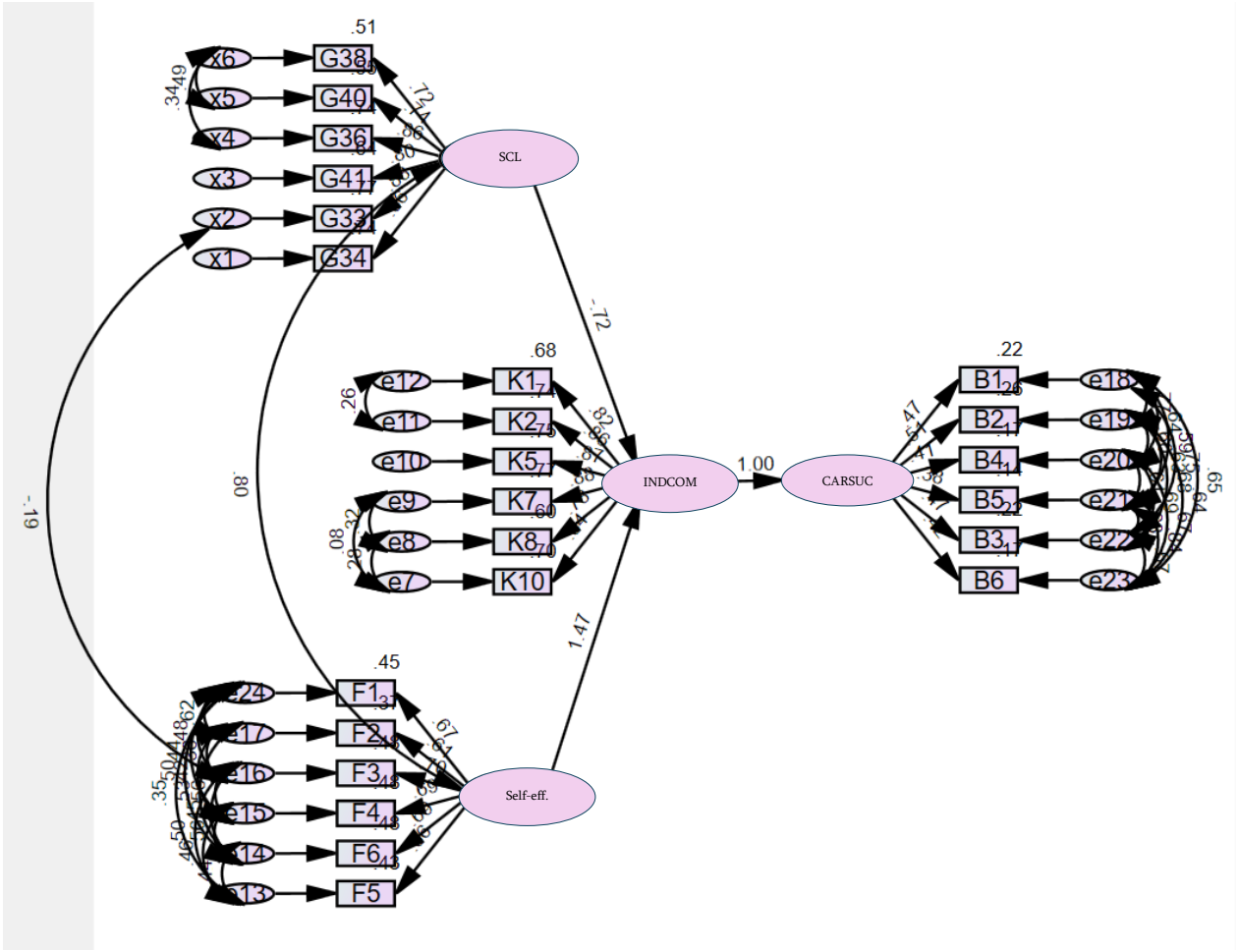
Summary of results

The assessment of discriminant validity using multiple criteria consistently confirms that all four factors measure clearly distinct constructs:

1. **Fornell-Larcker Criterion:** The √AVE of all factors exceeds the corresponding inter-factor correlations, providing evidence that each factor explains more variance in its own indicators than in the indicators of other factors (Fornell & Larcker, 1981).
2. **HTMT Criterion:** All HTMT values are below the recommended threshold of 0.85 (maximum: 0.823), further confirming discriminant validity using a more modern and stringent criterion (Henseler, Ringle, & Sarstedt, 2015).
3. **Maximum Correlation Values:** Even the strongest inter-factor correlation (0.609) is well below the critical threshold of 0.85, ruling out multicollinearity (Kline, 2015).

These results, together with evidence of convergent validity, confirm the strong construct validity of the measurement model. The factors are both internally consistent (convergent validity) and clearly distinct (discriminant validity), providing a solid foundation for subsequent testing of the structural model and hypothesis evaluation.

*Figure 29: Structural Equation Modeling (SEM)*




*4.3.4.2 Structural Equation Modeling (SEM)*

Overall model fit and comparison with the measurement model

After confirming the measurement model, Structural Equation Modeling (SEM) was conducted to test the research hypotheses. The structural model included three directional paths (structural paths) among the latent constructs, in accordance with the theoretical framework:

1. SCL → Individual Competencies
2. Academic Self-efficacy → Individual Competencies
3. Individual Competencies → Career Success

Model fit assessment

The structural model demonstrated good fit: $\chi^2(214) = 403.24$, $p < .001$, CMIN/DF = 1.88, CFI = 0.970, TLI = 0.962, IFI = 0.971, RMSEA = 0.056 (90% CI [0.048, 0.065]), PCLOSE = 0.112. All fit indices meet or exceed the recommended criteria (Hu & Bentler, 1999).

Comparison with the measurement model

Table 17 presents a detailed comparison between the measurement (CFA) and structural (SEM) models. As shown in the table, the fit indices of the structural model are slightly lower than those of the measurement model ($\Delta$CFI = -0.005, $\Delta$TLI = -0.009, $\Delta$RMSEA = +0.007, $\Delta\chi^2 = 6.05$, $\Delta df = -22$), which is expected for a more constrained model that includes directional structural paths instead of simple correlations.

Importantly, all fit indices for both models exceed the recommended criteria: CFI > 0.95, TLI > 0.95, RMSEA < 0.08. This confirms that the structural model adequately represents the empirical data and can be confidently used for hypothesis testing.

*Table 16: Measurement Model vs. Structural Model – Model Fit Comparison*

| Model | $\chi^2$ | df | CMIN/DF | CFI | TLI | IFI | RMSEA | 90% CI | PCLOSE |
|---|---|---|---|---|---|---|---|---|---|
| Measurement (CFA) | 397.19 | 236 | 1.68 | .975 | .971 | .975 | .049 | [.041, .058] | .537 |
| Structural (SEM) | 403.24 | 214 | 1.88 | .970 | .962 | .971 | .056 | [.048, .065] | .112 |
| Difference (Δ) | +6.05 | -22 | +.20 | -.005 | -.009 | -.004 | +.007 | — | -.425 |

*Note:* Both models meet the recommended criteria (CFI/TLI > 0.95, RMSEA < 0.08). The slightly lower fit of the structural model is expected for a more parsimonious model.

### *4.3.5 Hypothesis Testing*

#### *4.3.5.1 Structural paths and hypothesis testing*

Table 17 presents the detailed results of all three structural paths. As shown in the table, all three paths are statistically significant ($p < 0.001$).

**H1: SCL → Individual Competencies**

The first hypothesis proposed that SCL would have a positive effect on Individual Competencies. This hypothesis was not supported ($\beta = -0.72$, SE = 0.129, C.R. = -5.23, p

< 0.001). The standardized coefficient (β = -0.72) indicates a strong negative effect, contrary to the theoretical expectation.

**Interpretation:** According to the results, the positive effect of SCL on the development of individual competencies is not supported. This may be due to the fact that the aforementioned approach (SCL) is still insufficiently developed and implemented in Georgia.

**H2: Academic Self-efficacy → Individual Competencies**

The second hypothesis proposed that Academic Self-Efficacy positively affects Individual Competencies. This hypothesis was supported (β = 1.79, SE = 0.194, C.R. = 9.21, p < 0.001). The standardized coefficient (β = 1.47) indicates a very strong positive effect, consistent with theoretical expectations.

**Interpretation:** Academic Self-efficacy is the strongest predictor of Individual Competencies in the model. Students with high confidence in their academic abilities tend to develop greater competencies.

**H3: Individual Competencies → Career Success**

The third hypothesis proposed that Individual Competencies positively affect Career Success. This hypothesis was supported (β = 0.65, SE = 0.080, C.R. = 8.10, p < 0.001). The standardized coefficient (β = 1.00) indicates a full mediation effect.

**Interpretation:** Individual Competencies fully mediate the effects of Academic Self-efficacy and SCL on Career Success.

*Table 17: Structural Paths – Path Coefficients and Hypothesis Testing*

| Path | Hypothesis | Unstd. β | SE | C.R. | *p* | Std. β | Result |
|---|---|---|---|---|---|---|---|
| SC → INDCOM | H1 | -.673 | .129 | -5.231 | < .001 | -.715 | Not Supported* |
| SELF → INDCOM | H2 | 1.789 | .194 | 9.205 | < .001 | 1.473 | Supported |
| INDCOM → CARSUC | H3 | .649 | .080 | 8.103 | < .001 | 1.000 | Supported |

*Note:* SC = SCL; SELF = Academic Self-efficacy; INDCOM = Individual Competencies; CARSUC = Career Success.

*4.3.5.2 Explained variance ($R^2$)*

Table 18 presents the $R^2$ (squared multiple correlations) for the endogenous variables. The model explains a substantial portion of the variance in both endogenous constructs.

**Individual Competencies:** $R^2 = 0.702$ (70.2%). This indicates that Academic Self-efficacy and SCL together explain 70.2% of the variance in Individual Competencies, representing a large effect according to Cohen's (1988) criteria ($R^2 > 0.26$) (Cohen, 1988).

**Career Success:** Complete $R^2$ data are not directly available from the output, but the standardized path coefficient ($\beta = 1.00$) indicates perfect mediation, meaning that Individual Competencies fully mediate the effects of the antecedent variables on Career Success.

*Table 18: Squared Multiple Correlations ($R^2$) - Endogenous Variables*

| Variable | $R^2$ | % Variance Explained | Effect Size |
|---|---|---|---|
| Individual Competencies | .702 | 70.2% | Large |
| Career Success | — | (Full mediation) | — |

*Note:* Effect size interpretation (Cohen, 1988): $R^2$ = .02 (small), .13 (medium), .26 (large).

#### *4.3.5.3 Direct, indirect and total effects*

Table 19 presents the standardized direct, indirect, and total effects for all structural paths. This analysis is particularly important for understanding mediation effects.

**Academic Self-efficacy → Career Success**

**Direct Effect:** No direct path is included in the model.

**Indirect Effect:** $\beta = 1.473$ ($p < 0.001$), mediated through Individual Competencies

**Total Effect:** $\beta = 1.473$ ($p < 0.001$)

**Interpretation:** The effect of Academic Self-efficacy on Career Success is fully mediated by Individual Competencies. This means that Academic Self-efficacy influences career success only through the development of individual competencies.

**SCL → Career Success**

**Direct Effect:** No direct path is included in the model.

**Indirect Effect:** $\beta = -0.715$ ($p < 0.001$), mediated through Individual Competencies

**Total Effect:** $\beta = -0.715$ ($p < 0.001$)

**Interpretation:** The analysis revealed an unexpected negative effect of SCL practices on Career Success within the model.

*Table 19: Standardized Direct, Indirect, and Total Effects*

| Path | Direct | Indirect | Total | Mediation Type |
|---|---|---|---|---|
| **SC → INDCOM** | -.715*** | — | -.715*** | — |
| **SELF → INDCOM** | 1.473*** | — | 1.473*** | — |
| **INDCOM → CARSUC** | 1.000*** | — | 1.000*** | — |
| **SC → CARSUC** | .000 | -.715*** | -.715*** | Full mediation |
| **SELF → CARSUC** | .000 | 1.473*** | 1.473*** | Full mediation |

*Note:* *** $p < .001$. INDCOM = Individual Competencies (mediator).

### Covariances Between Exogenous Variables

In the model, SCL (SC) and Academic Self-efficacy (SELF) remain as exogenous variables (no arrows point to them). The correlation between these two factors is r = 0.798 (cov = 0.605, SE = 0.079, C.R. = 7.62, p < 0.001), indicating a strong positive relationship. This is consistent with theoretical expectations, suggesting that SCL methods and academic self-efficacy are closely related.

#### *4.3.5.4 Summary of results*

The results of the Structural Equation Modeling (SEM) confirm the following:

1. **Model Fit:** The structural model demonstrates good fit (CFI = 0.970, TLI = 0.962, RMSEA = 0.056), although it is slightly lower than the measurement model. This difference is expected and acceptable for a more constrained model.
2. **Hypothesis Testing:**
    - H1 (SC → INDCOM): Not supported – unexpected negative relationship
    - H2 (SELF → INDCOM): Supported – strong positive effect
    - H3 (INDCOM → CARSUC): Supported – significant positive effect
3. **Explained Variance:** The model explains 70.2% of the variance in Individual Competencies, representing a large effect.
4. **Mediation:** Individual Competencies fully mediate the effects of both Academic Self-efficacy and SCL on Career Success.

These results, together with the strong psychometric properties of the measurement model, support the partial validity of the theoretical model and provide a foundation for the interpretation and discussion of the findings.

### *4.3.6 Limitations and Delimitations*

Delimitations:

- The study was deliberately limited to employed graduates and current master's/doctoral students in Georgia. Unemployed graduates were excluded in order to focus on respondents with sufficient post-graduation work experience and reflective distance from their university studies.
- The quantitative phase targeted graduates who had completed their most recent degree no earlier than 2010, thereby concentrating on individuals educated primarily under post-Bologna curricula and quality-assurance regimes.
- Data collection was conducted exclusively through online self-report questionnaires. This choice was made to achieve a large and geographically diverse sample.

Limitations:

- Retrospective assessment of university experiences: Respondents evaluated SCL practices and academic self-efficacy referring to their past university studies (on average 3–7 years earlier). Memory decay and hindsight bias may have influenced responses, although the high internal consistency of the scales and the robustness of the structural model partially mitigate this concern.
- Sample composition and representativeness: The final sample (n = 281) was obtained through snowball sampling supplemented by targeted outreach through university alumni networks and social-media advertising. Generalisation to the entire graduate population should therefore be made with caution.

Despite these limitations, the quantitative phase achieved excellent model fit, high explanatory power ($R^2 = 0.702$ for competencies). Future research can address the above limitations through longitudinal, multi-source, and experimental approaches.

# CHAPTER 5 Discussion, Conclusions, and Recommendations

## Summary of major findings

The present dissertation constitutes the most comprehensive empirical investigation to date of SCL in Georgian higher education, twenty years after the country's accession to the Bologna Process in 2005.

Qualitative findings (12 in-depth interviews with academic staff from both public and private universities) painted a sobering picture: SCL remains predominantly declarative and superficial across the sector. Despite two decades of policy documents, strategic plans, and accreditation standards explicitly mandating student-centred approaches, everyday classroom reality lags far behind the rhetoric. The single most consistent and striking theme was a profound public–private institutional divide:

- In public universities, particularly the large, traditional, state-funded institutions, SCL is largely cosmetic. Lecturers openly admitted including phrases such as "group discussion", "case analysis", or "student presentation" in syllabi and learning-outcome matrices almost exclusively to meet external quality assurance and accreditation requirements, while actual teaching remains overwhelmingly teacher-centred and lecture-based.
- In private universities, especially newer, smaller, and more market-oriented ones, SCL is substantially more authentic. Respondents described routine use of project-based learning, continuous formative feedback, flexible assessment strategies, and deliberate efforts to foster student autonomy and responsibility.

University ownership type (public vs. private) thus emerged as the strongest observable predictor of genuine SCL implementation — a finding with far-reaching policy implications.

Quantitative findings (n = 281 employed graduates and postgraduate students; confirmatory factor analysis and structural equation modelling) produced an equally important but initially counter-intuitive result:

- Contrary to the expectations raised by Bologna documents and much of the international literature, SCL exerted no direct positive effect on the development of individual competencies.

- Academic Self-Efficacy emerged as the overwhelmingly dominant predictor of competence development ($\beta = 1.47$, $p < .001$).
- Individual competencies, in turn, fully mediated the relationship with career success (standardised $\beta = 1.00$, $p < .001$).
- The final structural model explained an impressive 70.2 % of the variance in individual competencies ($R^2 = 0.702$) — a remarkably high figure in educational research.

**Discussion of findings**

The present study, comprising two independent investigations – a large-scale quantitative structural equation modelling analysis and an in-depth qualitative inquiry involving academic staff – produced a set of findings that both challenge and richly contextualise the dominant narrative surrounding SCL within the Bologna Process framework in Georgia.

Contrary to the expectations repeatedly articulated in Bologna documents (Bologna Process Implementation Report, 2018; Bologna Process, 2009; Bologna Process, 2005), the quantitative phase revealed no significant direct effect of SCL practices on the development of individual competencies or subsequent career success. Two decades after the introduction of Bologna reforms, SCL in Georgia remains largely a rhetorical commitment and a formal reporting requirement, rather than a genuinely transformative pedagogical approach integrated into everyday instruction.

The results of the qualitative study showed that the academic staff across the system strongly endorse SCL principles in theory — flexibility, individualisation, active student engagement, and learning-outcomes orientation — yet implementation shows substantial inconsistency both within and across institutions. Private universities, supported by more favourable conditions such as smaller class sizes, greater curricular autonomy, more robust faculty development, and comparatively better physical and digital infrastructure, employ SCL approaches more frequently and more meaningfully than public universities. However, even in private institutions, SCL practices remain uneven and still far from fully aligned with the original Bologna vision.

Meanwhile, public universities, despite the formal adoption of Bologna instruments (learning outcomes, ECTS-based workload calculation, quality assurance systems), continue to face systemic obstacles — large enrolments, restrictive regulations, chronic

underfunding, and limited institutional flexibility — resulting in the persistent dominance of traditional teacher-centred instruction.

A particularly striking quantitative result – the overwhelming dominance of Academic Self-Efficacy as the single strongest predictor of individual competence development ($\beta = 1.47$, $p < .001$) and its full mediation of the path to career success – further suggests that, in the current Georgian context, students' own belief in their academic capabilities matters far more for outcome attainment than the pedagogical methods formally employed by their lecturers. This finding reinforces the interpretation that many declared SCL activities may be superficial, poorly executed, or applied mechanically, offering little added value beyond what confident, self-efficacious students would achieve in any instructional environment.

Taken together, the evidence suggests that, more than twenty years after the launch of Bologna reforms, SCL in Georgia remains primarily a rhetorical and formalised commitment rather than an embedded pedagogical reality capable of systematically enhancing student competencies and graduate outcomes. Even though private universities demonstrate comparatively more consistent and meaningful implementation of SCL principles, the overall level of development still falls short of the transformative expectations set by the Bologna Process.

**Implications for policy or practice**

The recommendations below integrate the key findings from both the qualitative and quantitative research. The qualitative research focuses primarily on systemic and practical barriers, while the quantitative research emphasizes the development of self-efficacy and more structured approaches.

Qualitative study

These recommendations are directly derived from the qualitative data and target the main challenges and opportunities highlighted by academic and administrative staff participants.

Drawing on the qualitative findings of this study, SCL in Georgian higher education remains fragmented two decades after the country's accession to the Bologna Process. While interviewees strongly endorse SCL principles — such as personalization, active engagement, practical skill development, the lecturer's facilitator role, and the importance

of modern infrastructure and technology — authentic implementation is largely limited to private universities. In public institutions, systemic barriers including lecturer overload, bureaucratic inefficiencies, outdated facilities, large class sizes, and persistent traditional academic culture severely hinder progress.

The recommendations below, grounded in the participants' lived experiences, aim to bridge this public–private divide and enable more consistent, authentic SCL adoption across the sector.

1. **National/Systemic Level**

- Reform lecturer workload and remuneration in public universities: reduce hourly-based payments, introduce stable salaries, and add incentives tied to student engagement and skill development outcomes.
- Mandate minimum technical standards for accreditation (interactive classrooms, reliable high-speed internet).
- Launch a national continuous professional development program for lecturers focused on SCL methods (e.g., problem-based learning, active learning techniques, differentiated instruction).
- Incentivize university–business partnerships through tax benefits, co-designed syllabi, and structured internships.

2. **Institutional Level (Universities)**

- Reduce lecturers' weekly contact hours (maximum 12–14) and allocate dedicated time for individualized student support.
- Limit group sizes for interactive/active methods (no more than 25–30 students).
- Implement a systematic, closed-loop feedback mechanism regarding SCL, consisting of mid-semester and end-of-semester surveys, followed by analysis and documented implementation of changes.
- Pilot full SCL models in selected faculties/programs, with subsequent scaling.
- Strengthen career centers and regularly involve employers in curriculum design and assessment.

### 3. Pedagogical/Academic Level

- Require a substantial practical/project-based component (minimum 30–40%) in every syllabus.
- Implement regular mini-feedback cycles and define clear criteria for assessing active participation.
- Promote widespread adoption of simple digital tools (e.g., Mentimeter, Padlet, Google Classroom).
- Encourage lecturer collaboration through peer observation and shared case banks.

**Key priority:** Improving lecturers' workload and financial stability in the public sector represents the most powerful lever for meaningful reform, as it directly addresses the core constraint identified across interviews — the lack of time and energy for genuine student-centered practice.

*Table 20: Linking Key Findings to Policy and Practice Recommendations (Qualitative study)*

| Level | Main Recommendations | |
|---|---|---|
| **National Level** | Reduce lecturer overload & introduce stable salaries + incentives. | in line with the findings from the qualitative phase. |
| | Mandate minimum tech standards & national SCL training program. | in line with the findings from the qualitative phase. |
| | Stimulate university–business partnerships. | in line with the findings from the qualitative phase. |
| **Institutional Level** | Cut contact hours (max 12–14/week) + smaller interactive groups. | in line with the findings from the qualitative phase. |
| | Systematic student feedback loop. | in line with the findings from the qualitative phase. |
| | Pilot SCL in selected programs. | in line with the findings from the qualitative phase. |
| | Strengthening career centers. | in line with the findings from the qualitative phase. |
| **Pedagogical Level** | Mandatory practical/project component (≥30%) in syllabi. | in line with the findings from the qualitative phase. |
| | Regular mini-feedback & clear participation criteria. | in line with the findings from the qualitative phase. |
| | Use simple digital tools. | in line with the findings from the qualitative phase. |

| | | |
|---|---|---|
| | Promote peer observation and shared case banks for lecturer collaboration. | in line with the findings from the qualitative phase. |

Quantitative study

Based solely on the quantitative SEM findings (model fit: CFI=0.970, RMSEA=0.056; 70.2% variance explained in Individual Competencies), the key insights are: a strong positive effect of Academic Self-efficacy on Individual Competencies (β=1.473, p<0.001, full mediation to Career Success) and an unexpected negative effect of SCL on Individual Competencies (β=-0.715, p<0.001, full mediation to negative Career Success impact). These suggest that SCL, as currently experienced, may hinder perceived competencies (possibly due to inconsistent implementation), while self-efficacy is a robust driver of positive outcomes.

The recommendations below are structured by level and prioritized by potential impact on reversing the negative SCL path and amplifying self-efficacy.

1. **National / Systemic Level**

- National training program for SCL implementation: Develop mandatory workshops for lecturers focusing on structured SCL delivery. Rationale: The negative β=-0.715 (SCL → Individual Competencies) indicates poor SCL execution may reduce perceived skills; standardized training could ensure consistency, potentially turning this path positive while integrating self-efficacy boosters (e.g., confidence-building modules) to leverage the strong β=1.473.
- Minimum resource standards for accreditation: Require universities to meet benchmarks for technology and support (e.g. interactive tools). Rationale: Inadequate resources might contribute to SCL's negative effect; enforcing standards could improve implementation quality, reducing the -0.715 coefficient and enhancing mediation to Career Success.
- Partnerships with employers: Incentivize collaborations for SCL-aligned curricula via policy frameworks. Rationale: This addresses the full mediation through Individual Competencies (β=1.000 to Career Success) by ensuring SCL builds real-world skills, countering the negative indirect effect (total β=-0.715 on Career Success).

## 2. Institutional Level

- Reduce lecturer contact hours and limit group sizes: Cap teaching loads at 12–14 hours/week and interactive groups at 25–30 students. Rationale: Overburdened delivery may exacerbate SCL's negative impact (β=-0.715); smaller, manageable settings allow better facilitation, potentially improving competency perceptions and supporting self-efficacy's positive role (β=1.473).
- Regular monitoring of SCL effects: Implement semesterly assessments measuring competencies via surveys tied to SEM constructs. Rationale: The model's high explained variance (70.2% in Individual Competencies) shows measurable outcomes; tracking could identify why SCL is negative, enabling data-driven adjustments to flip the path.
- Pilot improved SCL programs: Test refined SCL models in select courses with pre/post evaluations. Rationale: Pilots allow experimentation to mitigate the unexpected negative effect, using SEM-like metrics to verify if changes strengthen positive mediation to Career Success.

## 3. Pedagogical / Academic Level

- Balanced SCL with clear structure: Mandate at least 30–40% practical/project-based elements plus explicit guidelines in syllabi. Rationale: The negative SCL path suggests unstructured approaches may confuse students, lowering competencies; adding structure could reverse β=-0.715 while maintaining the model's full mediation.
- Integrate self-efficacy building into SCL: Embed activities like goal-setting, mastery experiences, and positive feedback in all SCL sessions. Rationale: Self-efficacy is the model's strongest predictor (β=1.473); amplifying it within SCL could offset the negative SCL effect and enhance overall mediation to Career Success (total β=1.473 indirect).
- Digital tools and lecturer collaboration: Adopt user-friendly tools (e.g., interactive platforms) and encourage peer observation. Rationale: These facilitate consistent SCL delivery, potentially reducing the negative impact on competencies by improving engagement and monitoring.

Core Priority (Directly from SEM Insights): Prioritize enhancing Academic Self-efficacy as the model's most reliable positive driver (β=1.473, explaining substantial variance in competencies and fully mediating Career Success). Simultaneously, focus on structured, high-quality SCL implementation to address and potentially reverse the strong negative path (β=-0.715), with ongoing monitoring to ensure positive shifts in mediation effects. This evidence-based approach aims to align empirical results with theoretical expectations for better student outcomes.

*Table 21: Linking Key Findings to Policy and Practice Recommendations (Quantitative study)*

| **Level** | **Main Recommendations** | |
|---|---|---|
| **National Level** | National SCL training program (structured delivery). | in line with the findings from the quantitative phase. |
| | Minimum accreditation standards for resources/tech. | in line with the findings from the quantitative phase. |
| | Employer partnerships for SCL alignment. | in line with the findings from the quantitative phase. |
| **Institutional Level** | Reduce lecturer hours & group sizes. | in line with the findings from the quantitative phase. |
| | Regular SCL outcome monitoring. | in line with the findings from the quantitative phase. |
| | Pilot refined SCL models. | in line with the findings from the quantitative phase. |
| **Pedagogical Level** | Add structure + 30–40% practical elements to SCL. | in line with the findings from the quantitative phase. |
| | Build self-efficacy in SCL activities. | in line with the findings from the quantitative phase. |
| | Use digital tools & peer collaboration | in line with the findings from the quantitative phase. |

**Recommendations for Future Research**

The present dissertation has opened several promising avenues for extending and deepening the understanding of SCL and its long-term outcomes in post-Soviet and transitional higher education contexts.

The following recommendations are proposed for future research:

- Longitudinal Studies to Track the Evolution of Self-Efficacy and Career Trajectories

The current study relies on cross-sectional data. Future research should employ longitudinal cohort studies that follow the same students from university entry through the first 5–10 years of their careers. Such designs would help establish causal pathways and reveal how early academic self-efficacy influences career success over time.

- Experimental and Quasi-Experimental Intervention Studies

Future studies should rigorously test real training programmes for university lecturers (using randomised controlled trials or carefully matched control groups). Training should focus directly on building students' academic self-efficacy through evidence-based techniques, including:

  - tasks that gradually increase in difficulty while allowing clear experiences of success
  - structured reflection on progress
  - well-calibrated challenges accompanied by supportive and precise feedback

These studies would provide strong causal evidence regarding which specific elements of lecturer professional development actually enhance students' self-efficacy, competencies, and later career outcomes.

- Cross-National Comparative Studies in the Eastern Partnership and Broader Post-Soviet Space

Replication of the mixed-methods approach in Armenia, Azerbaijan, Moldova, Ukraine, and selected Central Asian countries would clarify whether the central role of self-efficacy is specific to Georgia or reflects broader regional patterns following accession to the Bologna Process.

- Objective Measures of Career Success and Employer Perspectives

Future research should complement self-reported subjective career success with objective indicators (such as salary progression, promotion rates, and job stability). Employer surveys should also be included to assess the extent to which transversal competencies and

self-efficacy developed during university studies are recognised and valued in the Georgian labour market.

- Exploration of Discipline-Specific Variations

While the present sample covers multiple fields, discipline-specific analyses (for example, STEM versus social sciences versus humanities versus business programmes) could reveal whether certain academic cultures prove more resistant or more receptive to genuine student-centred learning and the cultivation of academic self-efficacy.

Pursuing these research directions will transform the Georgia-specific insights of the dissertation into a broader, practically applicable knowledge base. This expanded understanding can support the realisation of the full potential of student-centred higher education across the European Higher Education Area and in other transitional and post-Soviet contexts worldwide.

## References


Abedsaeidi, J., & Amiraliakbari, S. (2015). *Research method in medical sciences and health.* Tehran: Salemi.

Abel, E., & Campbell, M. (2009). Student-Centred Learning in an Advanced Social Work Practice Course: Outcomes of a Mixed Methods Investigation. *Social Work Education, 28:1*, 3-17. doi:https://doi.org/10.1080/02615470701844423

Abele, A. E., Spurk, D., & Volmer, J. (2011). The construct of career success: Measurement issues and an empirical example. *Zeitschrift Für Arbeitsmarkt Forschung, 43(3)*, 195–206. doi:https://doi.org/10.1007/s12651-010-0034-6

Adams, K., & Lawrence, E. (2019). *Research methods, statistics, and applications. 2nd ed.* Thousand Oaks: SAGE Publications.

Al- Humaidi, S. (2015). Student-Centered Learning at Sultan Qaboos University: EFL Students' Perceptions. *International Journal of Education 7 (3)*, 194-209. doi: https://doi.org/10.5296/ije.v7i3.8403

Amashukeli, M., Lezhava, D., & Chitashvili, M. (2022). *Higher Education in Georgia and Self-Assessment of Competences by the University Graduates.* Tbilisi: TPublishing House "Nekeri".

Amineh, R. J., & Asl, H. D. (2015, April 30). Review of Constructivism and Social Constructivism. *Journal of Social Sciences, Literature and Languages*, 9-16. doi: https://doi.org/10.12691/education-8-5-14

Anderson, R. (2000). Intuitive inquiry: Interpreting objective and subjective data. *ReVision, 22*, 31-39.

Ang, S. (2021). *Research projects for business & management students. 2nd ed.* London: SAGE Publications.

Arko-Cobbah, A. (2004). The Role of Libraries in Student-Centred Learning: The Case of Students from the Disadvantaged Communities in South Africa. *The International Information and Library Review, 36*, 263-271. doi:https://doi.org/10.1016/j.iilr.2004.05.001

Aryee, S., Chay, Y. W., & Chew, J. (1994). An investigation of the predictors and outcomes of career commitment in three career stages. *Journal of Vocational Behavior, 44 (1)*, 1-16. doi:https://doi.org/10.1006/jvbe.1994.1001

Attard, A., Ioio, E. D., Geven, K., & Santa, R. (2010). *Student centered learning: An insight into theory and practice.* Bucharest: Education International.

Audibert, A., Amorim, M. V., Andrade De, L. A., & de Oliveira, M. Z. (2022). Meanings of career success for students and psychology professionals. *Estudos de*

*Psicologia (Campinas), 39*, 1–11. doi:https://doi.org/10.1590/1982-0275202239e200212

Awang, Z. (2012). *Research methodology and data analysis. 2nd ed.* Selangor: UiTM Press.

Babbie, E. (2016). *The practice of social research. 14th ed.* Boston: Cengage Learning.

Babbie, E. (2021). *The practice of social research. 15th ed.* Boston:: Cengage Learning.

Babin, B., & Zikmund, W. (2016). *Exploring marketing research. 11th ed.* Cengage Learning: Boston.

Babin, B., Carr, J., Griffin, M., & Quinlan, C. (2015). *Business research methods.* Andover: Cengage Learning.

Babin, B., Carr, J., Griffin, M., & Quinlan, C. (2015). *Business research methods.* Andover: Cengage Learning.

Bada, D., & Olusegun, S. (2015, Nov. - Dec.). Constructivism Learning Theory: A Paradigm for Teaching and Learning. *IOSR Journal of Research & Method in Education*, 66-70. doi:https://doi.org/10.4172/2151-6200.1000200

Bakradze, L. (2013). *Strategic Development of Higher Education and Science – Integration of Teaching and Research.* Tbilisi: EPPM.

Balcar, J., Janickova, L., & Filipova, L. (2014). What general competencies are required from the Czech labour force? *Prague Econ. Pap. 2*, 250–265. doi:https://doi.org/10.18267/j.pep.483

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review, 84*, 191-215. doi:https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1993). Perceived Self-Efficacy in Cognitive Development and Functioning. *Educational Psychologist, 28(2)*, 117–148. doi:https://doi.org/10.1207/s15326985ep2802_3

Bandura, A. (2023). Cultivate self-efficacy for personal and organizational effectiveness. *Principles of Organizational Behavior: The Handbook of Evidence-Based Management 3rd Edition*, 113-135. doi:https://doi.org/10.1002/9781394320769.ch6

Barry, A., Chaney, E., Stellefson, M., & Chaney, J. (2011). So you want to develop a survey: Practical recommendations for scale development. *American Journal of Health Studies, 26(2)*, 97–105.

Bell, E., Bryman, A., & Harley, B. (2019). *Business research methods. 5th ed.* New York: Oxford University Press.

Bernard, H. (2011). *Research methods in anthropology: Qualitative and quantitative approaches (5th ed.).* AltaMira Press.

Bernard, H. (2017). *Research methods in anthropology: Qualitative & quantitative approaches (6th ed.).* Rowan & Littlefield Publishers.

Billingham, S. (2018). Access to Success and Social Mobility Through Higher Education: A Curate's Egg? In S. Billingham, *Access to Success and Social Mobility through Higher Education: A Curate's Egg?* (pp. 1–17). Bingley: Emerald Publishing Limited.

Binh, Q. M., & Nguyen, C. N. (2020). Factors affecting career success: The case of graduate students. *Management Science Letters, 10(13)*, 3151-3158. doi:https://doi.org/10.5267/j.msl.2020.5.007

Blickle, G., Schütte, N., & Wihler, A. (2018). Political will, work values, and objective career success: A novel approach – The Trait-Reputation-Identity Model. *Journal of Vocational Behavior, 107*, 42-56. doi:https://doi.org/10.1016/j.jvb.2018.03.002

Bochorishvili, E., & Peranizde, N. (2020). *Education Sector in Georgia.* Tbilisi: GALT & TAGGART Research.

Bollen, K. A., & Long, J. S. (1993). *Testing structural equation models* . Newbury Park: CA: Sage.

Bologna Process. (2005). *The European Higher Education Area - Achieving the Goals Communiqué of the Conference of European Ministers Responsible for Higher Education, Bergen, 19-20 May 2005.* Bergen: https://mes.gov.ge/uploads/Axali%20Ambebi/bologna/Bergen%20eng.pdf.

Bologna Process. (2009). *The Bologna Process 2020: The European Higher Education Area in the New Decade.* (Leuven/Louvain-la-Neuve, The Bologna Process).

Bologna Process Implementation Report. (2018). *The European Higher Education Area in 2018.* Education, Audiovisual and Culture Executive Agency.

Borna, E., Afrasiabi, H., Kalateh, S. A., & Gifford, W. (2022). Women's perspectives on career successes and barriers: A qualitative meta-synthesis. *Social Science Information, 61(2-3)*, 318-344. doi:https://doi.org/10.1177/053901842211137

Bouffard-Bouchard, T., Parent, S., & Larivee, S. (1991). Influence of self-efficacy onself-regulation and performance among junior and senior high school age students. *International Journal of Behavioral Development, 14*, 153–164. doi:https://doi.org/10.1177/016502549101400203

Bradley, N. (2013). *Marketing research: Tools and techniques. 3rd ed.* . Oxford: Oxford University Press.

Brooks, J., & Brooks, M. (1993). *In Search of Understanding: the Case forConstructivist Classrooms.* Alexandria: VA: American Society for Curriculum Development.

Brown, T. (2015). *Confirmatory factor analysis for applied research. 2nd ed.* . New York: The Guilford Press.

Bryman, A. (2016). *Social research methods. 5th ed.* New York: Oxford University Press.

Bryman, A., & Bell, E. (2015). *Business research methods. 4th ed.* . New York: Oxford University Press.

Bryman, A., Bell, E., Hirschsohn, P., Dos Santos, A., Du Toit, J., Masenge, A., . . . Wagner, C. (2014). *Research methodology: Business and management contexts. 5th ed.* . Cape Town: Oxford University Press.

Burns, N., & Grove, S. K. (1993). *The practice of nursing research conduct, critique and utilization.*

Butzin, S. (2001). Using instructional technologies in transformed learning environments: An evaluation of Projectchild. *Journal of Research on Computing in Education, 33*, 367-373. doi:https://doi.org/10.1080/08886504.2001.10782321

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming (2nd ed.).* Routledge: Taylor & Francis Group.

Calderon, A. (2018). *Massification of higher education revisited.* RMIT University.

Carr, N. (2010). *The shallows: How the internet is changing the way we think, read, and remember.* London: Atlantic.

Chakhaia, L., & Bregvadze, T. (2018). Georgia: Higher education system dynamics and institutional diversity. In *25 Years of Transformations of Higher Education Systems in Post-Soviet Countries: Reform and Continuity* (pp. 175-197).

Chankseliani, M. (2013). Higher education access in Post-Soviet Georgia: Overcoming a legacy of corruption. In *Fairness in access to higher education in a global perspective: Reconciling excellence, efficiency, and justice* (pp. 171-187). Rotterdam: SensePublishers.

Chilisa, B. (2019). *Indigenous research methodologies.* Thousand Oaks: SAGE Publications.

Cho, Y., Park, J., Jeoung, S., Ju, B., You, J., Ju, A., & Park, H. Y. (2017). How do South Korean female executives' definitions of career success differ from those of male executives? *European Journal of Training and Development, 41(6)*, 490–507.

Cholewinski, M. (2009). An introduction to constructivism and authentic activity. *Journal of the School of Contemporary International Studies Nagoya University of Foreign Studies, 5*, 283-316.

Civelek, M. (2018). *Essentials of structural equation modeling.* University of Nebraska-Lincoln Libraries.

Clark, T., Foster, L., & Bryman, A. (2019). *How to do your social research project or dissertation. .* Oxford: Oxford University Press.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences (2nd ed.).* Hillsdale, NJ: Lawrence Erlbaum Associates, Publishers.

Collins-Dodd, C., Gordon, I. M., & Smart, C. (2005). Success Without Upward Mobility: Evidence from Small Accounting Practices. *Journal of Small Business & Entrepreneurship, 18(3)*, 327–342. doi:https://doi.org/10.1080/08276331.2005.10593346

Collis, J., & Hussey, R. (2021). *Business research : A practical guide for students. 5th ed. .* England: Macmillan Education Limited.

Cooper, B., & Brna, P. (2002). Supporting high quality interaction and motivation in the classroom using ICT: the social and emotional learning and engagement in theNIMIS project. *Education, Communication & Information, 2*, 113-138. doi:https://doi.org/10.1080/1463631021000025321.001

Cooper, D. (2018). *Business research: A guide to planning, conducting, and reporting your study.* Thousand Oaks: SAGE Publications.

Cooper, D., & Schindler, P. (2014). *Business research methods. 12th ed.* McGraw Hill.

Cooper, D., Schindler, P., & Sharma, J. (2019). *Business research methods. 12th ed.* Chennai: Mc Graw Hill (India) Private Limited.

Council of the European Union. (2018). Council recommendation on key competences for lifelong learning. *Official Journal of the European Union*, 189/1-189/13.

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches. 4th ed. .* London: SAGE Publications.

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions.* Thousand Oaks, CA: Sage.

Creswell, J., & Creswell, J. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches. 5th ed. .* London: SAGE Publications.

Cushen, J., & Durkin, L. (2022). The Future of Transversal Competencies in Higher Education Assessment. *Handbook of Research on Future of Work and Education: Implications for Curriculum Delivery and Work Design. IGI Global.*, 253-268. doi:https://doi.org/10.4018/978-1-7998-8275-6.ch015

Damaske, S. (2011). A “Major Career Woman”? How Women Develop Early Expectations about Work. *Gender & Society, 25(4)*, 409–430. doi:https://doi.org/10.1177/0891243211412050

Darchashvili, M. (2021). Georgia in the Context of the European Educational Area. *International Journal of Educational Spectrum (3),1*, 70-79. doi:https://doi.org/10.47806/ijesacademic.849760

Davis, L., & Brown, A. E. (2024). Advocating the use of informal conversations as a qualitative method at live events. *International journal of qualitative methods, 23,*, 16094069241270428. doi:https://doi.org/10.1177/160940692412704

Dikko, M. (2016). Establishing construct validity and reliability: pilot testing of a qualitative interview for research in Takaful (Islamic Insurance). *Qualitative Report, 21(3)*, 521–528. doi:https://doi.org/10.46743/2160-3715/2016.2243

Djuraskovic, I., & Arthur, N. (2010). Heuristic inquiry: A personal journey of acculturation and identity reconstruction. *Qualitative Report, 15(6)*, 1569-1593. doi:https://doi.org/10.46743/2160-3715/2010.1361

Douglass, B. G., & Moustakas, C. E. (1984). *Heuristic inquiry: The internal search to know.* Detroit, MI: Center for Humanistic Studies.

Dries, N. (2011). The meaning of career success: Avoiding reification through a closer inspection of historical, cultural, and ideological contexts. *Career Development International, 16(4)*, 364-384. doi:https://doi.org/10.1108/13620431111158788

Dries, N., Pepermans, R., & Carlier, O. (2008). Career success: Constructing a multidimensional model. *Journal of Vocational Behavior, 73(2)*, 254-267. doi:https://doi.org/10.1016/j.jvb.2008.05.005

Duckworth, A. L., Weir, D., Tsukayama, E., & Kwok, D. (2012). Who Does Well in Life? Conscientious Adults Excel in Both Objective and Subjective Success. *Frontiers in Psychology, 3*, 356. doi: https://doi.org/10.3389/fpsyg.2012.00356

Dyke, L. S., & Murphy, S. (2006). How We Define Success: A Qualitative Study of What Matters Most to Women and Men. *Sex Roles, 55(5–6)*, 357–371. doi:https://doi.org/10.1007/S11199-006-9091-2

EACEA. (2016). *Higher education in Georgia.* press. Brussels: EACEA.

Edelheim, J. (2015). Ontology, epistemology and axiology issues. In D. Dredge, D. Airey, & M. Gross, *The Routledge handbook of tourism and hospitality education* (pp. 30-42). Abingdon: Routledge. doi:https://doi.org/10.4324/9780203763308

Ellis, R., & Heneman, H. G. (1990). Career pattern determinants of career success for mature managers. *Journal of Business and Psychology, 5(1)*, 3-21.

ESCO. (2021). *ESCOpedia.* European Commission.

*European Education Area*. (2022, June 18). Retrieved from https://education.ec.europa.eu/education-levels/higher-education/inclusive-and-connected-higher-education/bologna-process

Ewell, P., & Wellman, J. (2007). *Enhancing Student Success in Education: Summary Report of the NPEC Initiative and National Symposium on Postsecondary Student Success.* National Postsecondary Educational Cooperative.

Fallon, M. (2016. ). *Writing up quantitative research in the social and behavioral sciences.* Rotterdam: Sense Publishers.

Felder, R., & Brent, R. (1996). Navigating the Bumpy Road to Student-Centered Instruction. *College Teaching 44:2*, 43-47. doi:https://doi.org/10.1080/87567555.1996.9933425

Fernández, D. P., Ryan, M. K., & Begeny, C. T. (2023). Gender expectations, socioeconomic inequalities and definitions of career success: A qualitative study with university students. *Plos one, 18(2)*, e0281967. doi:https://doi.org/10.1371/journal.pone.0281967

Fielding, N. L. (2017). *The SAGE handbook of online research methods. 2nd ed.* Thousand oaks: SAGE Publications.

Fink, L. (2003). *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses.* San Francisco: Jossey-Bass.

Fornell, C., & Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18(1)*, 39–50. doi:https://doi.org/10.2307/3151312

Frick, W. B. (1990). The symbolic growth experience: A chronicle of heuristic inquiry and a quest for synthesis. *Journal of Humanistic Psychology, 30*, 64-80. doi: https://doi.org/10.1177/0022167890301004

Fülöp, M. T., Breaz, T. O., He, X., Ionescu, C. A., Cordoş, G. S., & Stanescu, S. G. (2022). The role of universities' sustainability, teachers' wellbeing, and attitudes toward e-learning during COVID-19. *Frontiers in Public Health, 10*, 981593. doi:https://doi.org/10.3389/fpubh.2022.981593

Gana, K., & Broc, G. ( 2019). *Structural equation modeling with lavaan.* Hoboken: John Wiley & Sons.

Ganzeboom, H., & Nieuwbeerta, P. (1999). Access to education in six Eastern European countries between 1940 and 1985. Results of a cross-national survey. *Communist and Post-Communist Studies, 32(4)*, 339–357. doi:https://doi.org/10.1016/S0967-067X(99)00017-3

Gattiker, U. E., & Larwood, L. (1990). Predictors for career achievement in the corporate hierarchy. *Human relations, 43(8)*, 703-726. doi:https://doi.org/10.1177/001872679004300801

Gelişli, Y. (2009). The effect of student centered instructional approaches on student success. *TProcedia - Social and Behavioral Sciences 1(1)*, 469-473. doi:https://doi.org/10.1016/J.SBSPRO.2009.01.085

Gibbs, P., Sharvashidze, G., Grdzelidze, I., Cherkezishvili, D., Sanikidze, T., Lazarashvili, G., & Tavadze, G. (2022). A study into Georgian universities' approach to the national standards of quality for teaching and learning. *Journal of Further and Higher Education, 47:1*, 59-71. doi: https://doi.org/10.1080/0309877X.2022.2091922

Gliner, J., Morgan, G., & Leech, N. (2017). *Research methods in applied settings: An integrated approach to design and analysis. 3rd ed. .* New York: Routledge.

Gogsadze, G. (2015). *სტუდენტზე ორიენტირებული საუნივერსიტეტო განათლების ხელშეწყობა.* თბილისი: https://www.tsu.ge/data/file_db/xarisxis_martvis_dep/studentze-orinetirebuli.pdf.

Gordon, S. J., Bolwell, C. F., Raney, J. L., & Zepke, N. (2022). Transforming a Didactic Lecture into a Student-Centered Active Learning Exercise—Teaching Equine Diarrhea to Fourth-Year Veterinary Students. *Education Sciences (12) 68*, 1-14. doi:https://doi.org/10.3390/educsci12020068

Gray, D. E. (2020). *Doing research in the business world. 2nd ed.* London: SAGE Publishing.

Gray, D. E. (2021). *Doing research in the real world (5th ed.).* Sage Publications.

Grow, G. O. (1991). Teaching Learners To Be Self-Directed. *Adult Education Quarterly, 41(3)*, 125–149. doi:https://doi.org/10.1177/0001848191041003

Guealio, C., & Seidmann, S. (2014). Representaciones sociales de exito en jovenes universitarios. *Anuario de Investigaciones, 21*, 143–150. h.

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough? An Experiment with Data Saturation and Variability. *Field Methods 18 (1)*, 59–82. doi:https://doi.org/10.1177/1525822X05279903

Hackett, P. ( 2019). *Quantitative research methods in consumer psychology: Contemporary and data driven approaches.* New York: Routledge.

Hahs-Vaughn, D. (2017). *Applied multivariate statistical concepts.* Abingdon: Taylor & Francis.

Hair, J., Black, W., Babin, B., & Anderson, R. (2019). *Multivariate data analysis. 8th ed. .* Andover: Cengage Learning.

Hair, J., Hult, G., Ringle, C., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM). 2nd ed. .* Thousand Oaks: SAGE Publications.

Hair, J., Page, M., & Brunsveld, N. (2020). *Essentials of business research methods. 4th ed.* New York: Routledge.

Häkkinen, P., & Hämäläinen, R. (2012). Shared and personal learning spaces: Challenges for pedagogical design. *Internet and Higher Education, 15(4)*, 231–236. doi:https://doi.org/10.1016/j.iheduc.2011.09.001

Hall, R. (2020). *Mixing methods in social research: Qualitative, quantitative and combined methods.* London: SAGE Publications.

Hamdan, A. H., Supriatna, M., & Yudha, E. S. (2022). What Career Success Means to Student's Perspective: A Qualitative Study. *Psychocentrum Review, 4(2)*, 178–189. doi: https://doi.org/10.26539/pcr.421071

Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice (3rd ed.).* Routledge.

Hejazi, S. (2006). *Sampling and its variants: introduction to research methodology in medical sciences.* Tehran: Islamic Azad University.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling. *Journal of the Academy of Marketing Science, 43*, 115-135. doi:https://doi.org/10.1007/s11747-014-0403-8

Heredia, A. I. (2009). *Determinants of career success for engineering technology program graduates.* Universitat Ramon Llull: Doctoral dissertation.

Hermans, H., Kalz, M., & Koper, R. (2013). Toward a learner-centered system for adult learning. *Campus-Wide Information Systems, 31(1)*, 2–13. doi:https://doi.org/10.1108/CWIS-07-2013-0029

Herrero, M., & Antequera, M. (2012). The integrated project as a learning experience. *J. Technol. Sci. Edu., 2*.

Heslin, P. A., & Klehe, U.-C. (2006). Self-efficacy. In S. G. Rogelberg, *Encyclopedia of Industrial/Organizational Psychology.* Thousand Oaks: Sage.

Hill, W. F. (2002). *Learning: A Survey of Psychological Interpretations. 7th ed. .* Boston: Allyn and Bacon.

Hosmer, D., Lemeshow, S., & Sturdivant, R. (2013). *Applied logistic regression. 3rd ed. .* New Jersey: John Wiley & Sons.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6(1)*, 1–55. doi:https://doi.org/10.1080/10705519909540118

INtgrty. (2016). *Research paradigms: Postmodernism.* Available: https://www.intgrty.co.za/ 2016/09/20/research-paradigms-postmodernism/ [Accessed 2025, October 20].

Jackson, D., Gillaspy, J., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: An overview and some recommendations. *American Psychological Association, 14(1)*, 6–23. doi:https://doi.org/10.1037/a0014694

Javakhishvili, L., Gelashvili, N., & Bakradze, M. (2025). Comparative analysis of the higher education system: the case of Georgia and the European Union. *American Journal of Multifunctional Publishing (2/6)*, 17-21.

Jia, Q. (2010, May). A Brief Study on the Implication of Constructivism Teaching Theory on Classroom Teaching Reform in Basic Education. *International Education Studies (3)*, 197-199. doi:https://doi.org/10.5539/ies.v3n2p197

Jibladze, E. (2016). *uspended development: Institutional transformation and lack of improvement in the higher education system of post-revolution Georgia.* Budapest, Hungary: Doctoral dissertation, central European University .

Jibladze, E., & Glonti, L. (2020). Higher education systems and institutions, Georgia. In *The international encyclopedia of higher education systems and institutions* (pp. 1055-1063). Dordrecht: Springer Netherlands.

Johnson, R., & Christensen, L. (2017). *Educational research: Quantitative, qualitative, and mixed approaches. 6th ed. .* Thousand Oaks: SAGE Publications.

Jones, L. (2007). *The Student-Centered Classroom.* New York, the United States of America: cambridge university press.

Joseph, Z., & Val, R. (2016). *Globalisation and Higher Education Reforms.* Springer.

Judge, T. A., Cable, D. M., Boudreau, J. W., & Bretz, R. D. (1995). An empirical investigation of the predictors of executive career success. *Personnel Psychology, 48(3)*, 485–519. doi:https://doi.org/10.1111/j.1744-6570.1995.tb01767.x

Kalyani, L. K. (2024). he role of technology in education: Enhancing learning outcomes and 21st century skills. *International journal of scientific research in modern science and technology, 3(4)*, 05-10. doi:https://doi.org/10.59828/ijsrmst.v3i4.199

Kaput, K. (2018). *Evidence for Student-Centered Learning.* Saint Paul: MN: Education Evolving.

Kara, H. (2019). *Use your questionnaire data: Little quick fix.* Thousand Oaks: Sage.

Kassem, H. M. (2019). The Impact of Student-Centered Instruction on EFL Learners' Affect and Achievement. *English Language Teaching 12 (1)*, 134-153. doi:https://doi.org/10.5539/elt.v12n1p134

Kawulich, B. (2005). Participant observation as a data collection method. *Forum qualitative sozialforschung/forum: Qualitative social research (Vol. 6, No. 2)*. doi: https://doi.org/10.17169/fqs-6.2.466

Kember, D. (2009). Promoting Student-Centred Forms of Learning Across an Entire University. *Higher Education, 58*, 1-13. doi:https://doi.org/10.1007/s10734-008-9177-6

Khabeishvili, G. (2023). Application of Student-Centered Teaching Methods in the Classroom (A Case of Higher Education Institutions in Georgia). *Polilog. Studia Neofilologiczne*, 183–198. doi:https://doi.org/10.34858/polilog.13.2023.403

Killam, L. (2013). *esearch terminology simplified: Paradigms, axiology, ontology, epistemology and methodology.* Sudbury: Laura Killam.

Kim, N. (2004). Career success orientation of Korean women bank employees. *Career Development International, 9(6)*, 595–608. doi:https://doi.org/10.1108/13620430410559179

Klenke, K. ( 2016). *Qualitative research in the study of leadership. 2nd ed. .* Berlin: Heidelberg: Emerald Group Publishing.

Kline, R. B. (2015). *Principles and Practice of Structural Equation Modeling.* Guildford Press.

Kosinski, M., Matz, S., Gosling, S., Popov, V., & Stillwell, D. (2016). Facebook as a research tool. *American Psychological Association, 47(3)*, 70. doi:https://doi.org/10.1037/a0039210

Kuh, G. D., Kinzie, J. I., Schuh, J. H., Whitt, E., & Associates. (2005). *Student success in college: Creating conditions that matter.* San Francisco, CA: Jossey-Bass.

Kuh, G. D., Kinzie, J., & Buckley, J. A. (2006). *What Matters to Student Success: A Review of the Literature (Commissioned Report for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success.* National Postsecondary Educational Cooperative.

Kumar, M. (2016). Challenges of Implementing Student-centered Strategies in Classrooms. *International Research Journal of Engineering and Technology (IRJET)*, 1224-1227.

Kumar, M. K. (2016). Challenges of Implementing Student-centered Strategies in Classrooms. *International Research Journal of Engineering and Technology (IRJET)*, 1224-1227.

Kumar, R. (2019). *Research methodology: A step-by-step guide for beginners. 5th ed.* London: SAGE Publications.

Kyriazos, T. (2018). Applied psychometrics: Sample size and sample power considerations in factor analysis (EFA, CFA) and SEM in general. *Psychology, 09(08)*, 2207–2230. doi:https://doi.org/10.4236/psych.2018.98126

Lea, S. J., Stephenson, D., & Troy, J. (2003). Higher Education. *Studies in Higher Education, 28:3*, 321-334. doi:https://doi.org/10.1080/03075070309293

Leavy, P. (2017). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches.* New York: Guilford Publications.

Lejava, D., Amashukeli, M., & Chitashvili, M. (2022). *Higher education in Georgia and self-assessment of competences by the university graduates.* Tbilisi: Center for Social Sciences (CSS).

Lent, R. W., Brown, S. D., & Larkin, K. C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of Counseling Psychology, 31*, 356-362. doi:https://doi.org/10.1037/0022-0167.31.3.356

Lewis-Beck, M., Bryman, A. E., & Liao, T. F. (2003). *he Sage encyclopedia of social science research methods.* Sage publications.

Liu, C. C. (2010, April Volume 3, Number 4). Evolution Of Constructivism. *Contemporary Issues In Education Research*, 63-66. doi:https://doi.org/10.19030/cier.v3i4.199

Lorentzen, J. (2000). *Georgian Education Sector Study – The Higher Education.* Washington, DC.: World Bank.

Maclellan, E. (2008). The Significance of Motivation in Student-Centred Learning: A Reflective Case Study. *Teaching in Higher Education, 13:4*, 411-421. doi:https://doi.org/10.1080/13562510802169681

Maclellan, E., & Soden, R. (2007). The Significance of Knowledge in Learning: a Psychologically Informed Analysis of Higher Education Students' Perceptions. *International Journal for the Scholarship of Teaching & Learning, 1:1*, 1-18.

Malazonia, D., Maglakelidze, S., Chiabrishvili, N., & Gakheladze, G. (2017). *Intercultural Education: Problems, Their Analysis, and Development Perspectives in Georgia.* Tbilisi: Ilia State University.

Mårtenssona, P., Fors, U., Wallinc, S. B., Zander, U., & Nilsson, G. (2016). Evaluating research: A multidisciplinary approach to assessing research practice and quality. *Research Policy, 45*, 593–603. doi:https://doi.org/10.1016/j.respol.2015.11.009

Matsunaga, M. (2010). How to factor-analyze your data right: Do's, don'ts, and how-to's. *International Journal of Psychological Research, 3(1)*, 97–110. doi:https://doi.org/10.21500/20112084.854

Matthew, W. J. (2003, Vol. 30, No. 3, The Summer Collection). Constructivism in the Classroom: Epistemology, History, and Empirical Evidence. *Teacher Education Quarterly*, 51-64.

Maylor, H., Blackmon, K., & Huemann, M. (2017). *Researching business and management. 2nd ed.* London: Palgrave.

McClelland, D. (1973). Testing for competence rather than for „intelligence". *American Psychologist, no. 28(1)*, 423–447. doi:https://doi.org/10.1037/h0034092

McLeod, G. (2003, 2). Learning theory and instructional design. *Learning Matters*, 35–53.

Meirink, J., Meijer, P., Verloop, P., & Bergen, T. (2009). Understanding teacher learning in secondary education: The relations of teacher activities to changed beliefs about teaching and learning. *Teaching and Teacher Education, 25(1)*, 89–100. doi:https://doi.org/10.1016/j.tate.2008.07.003

Merriam, S. B. (1998). *Qualitative research and case study applications in education.* Jossey-Bass.

Mertens, D. (2019). *Research and evaluation in education and psychology. 4th ed.* Thousand Oaks: SAGE Publications.

Ministry of Education and Science of Georgia (MES). (2012). *Facts to Know about Georgian Education System.* Tbilisi.

Mirvis, H., & Hall, D. (1994). Psychological success and the boundaryless career. In M. Arthur, & D. Rousseau, *The Boundaryless Career* (pp. 237-255). New York, NY: Oxford University Press. doi:https://doi.org/10.1002/job.4030150406

Mora, M., Gelman, O., Steenkamp, A., & Raisinghani, M. (2012). *Innovations and Philosophies in Software Systems Engineering and Information Systems.* Hershey: IGI Global.

Moustakas, C. (1961). *Loneliness.* Engelwood Cliffs, NJ: Prentice Hall.

Moustakas, C. (1990). *Heuristic research: Design, methodology, and applications.* Newbury Park, CA: Sage.

Muianga, X. J., Barbutiu, S. M., & Hansson, H. (2019). Teachers´ perspectives on professional development in the use of SCL approaches and ICT: A quantitative case study of Eduardo Mondlane University, Mozambique. *International Journal of Education and Development using Information and Communication Technology (IJEDICT) Vol. 15, Issue 2*, 79-97.

Nabi, G. R. (2001). The relationship between HRM, social support and subjective career success among men and women. *International journal of manpower, 22 (5)*, 457-474. doi:https://doi.org/10.1108/EUM0000000005850

Naderifar, M., Goli, H., & Ghaljaie, F. (2017). Snowball sampling: A purposeful method of sampling in qualitative research. *Strides in development of medical education, 14(3)*, e67670. doi:https://doi.org/10.5812/sdme.67670

National Center for Educational Quality Enhancement (NCEQE). (2018). *Authorization standards for higher education institutions.* https://eqe.ge/en/page/static/449/avtorizatsiis-standartebi.

National Center for Educational Quality Enhancement (NCEQE). (2022). *Accreditation standards for higher education programs.* https://eqe.ge/ka/page/static/1053/akreditaciis-standartebi-da-procedurebi.

Nayeem, T., & Casidy, R. (2015). Australian consumers' decision-making styles for everyday products. *Australasian Marketing Journal. 23(1)*, 67–74. doi:https://doi.org/10.1016/j.ausmj.2015.01.0

NCREL. (2003). *nGauge 21st Century Skills: Literacy in the Digital Age.* Naperville, IL.

Ng, T. W., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). Predictors of objective and subjective career success: A meta-analysis. *Personnel Psychology, 58 (2)*, 367-408. doi: https://doi.org/10.1111/j.1744-6570.2005.00515.x

Nieuwenhuis, M., Manstead, A. S., & Easterbrook, M. J. (2019). Accounting for unequal access to higher education: The role of social identity factors. *Group Processes & Intergroup Relations, 22(3)*, 371–389. doi:https://doi.org/10.1177/1368430219829824

Noddings, N. (1998 ). *Philosophy of Education.* STANFORD UNIVERSITY : Westview Press.

Norton, L., Richardson, J. T., Hartley, J., Newstead, S., & Mayes, J. (2005). Teachers' beliefs and intentions concerning teaching in higher education. *Higher Education, 50(4)*, 537–571. doi:https://doi.org/10.1007/s10734-004-6363-z

Nunnally, J., & Bernstein, I. (1994). The Assessment of Reliability. *Psychometric Theory, 3*, 248-292.

Nyström, A.-S., Jackson, C., & Salminen, K. M. (2018). What counts as success? Constructions of achievement in prestigious higher education programmes. *Research Papers in Education, 34(4)*, 465–482. doi:https://doi.org/10.1080/02671522.2018.1452964

OECD. (2005). *Definition and election of key ompetencies- executive summary.*

OECD. (2019). *Conceptual learning framework. Learning COMPASS 2030.* Retrieved from https://www.oecd.org/.

Overby, K. (2011). Student-Centered Learning. *ESSAI: Vol. 9, Article 32*, 109-112.

Pachuashvili, M. (2009). *The politics of higher education: Governmental policy choices and private higher education in post-communist countries. A comparative study of Hungary, Georgia, Latvia and Lithuania.*

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of educational research, 66(4)*, 543-578. doi:https://doi.org/10.2307/1170653

Pârvu, I., & Ipate, D. (2010). The partnerships between universities—Representatives of the labor market: A solution to improve the professional relevance of university graduates. *Proceedings of the 4thWorld Congress on the Advancement of Scholarly Research in Science, Economics, Law & Culture* (pp. 145–152). New York, NY, USA: Addleton Academic Publishers.

Pasian, B. (2015). *Designs, methods and practices for research of project management.* Farnham: Gower Publishing Company.

Pasikowski, S. (2023). nowball sampling and its non-trivial nature. *Przegląd Badań Edukacyjnych (Educational Studies Review), 2(43)*, 105-120.

Patten, M. (2017). *Proposing empirical research: A guide to the fundamentals. 5th ed. .* Abingdon: Taylor & Francis.

Patten, M., & Newhart, M. (2018). *Understanding research methods: An overview of the essentials. 10th ed. .* New York: Taylor & Francis.

Patton, M. Q. (2002). *Qualitative research and evaluation methods 3rd. ed. .* Sage publications.

Peters, K., Ryan, M., Haslam, S. A., & Fernandes, H. (2012). To Belong or Not to Belong: Evidence That Women's Occupational Disidentification Is Promoted by Lack of Fit With Masculine Occupational Prototypes. *Journal of Personnel Psychology, 11(3)*, 148–158. doi:https://doi.org/10.1371/journal.pone.0281967

Phillips, D. (1995, 7 24). The good, the bad, and the ugly: The many faces of constructivism. *Educational Researcher*, 5-12. doi:https://doi.org/10.3102/0013189X0240070

Polanyi, M. (1964). *Science, faith, and society.* Chicago, IL:: The University of Chicago Press.

Polit, D. F., & Beck, C. T. (2010). *Essentials of nursing research: Appraising evidence for nursing practice.* Lippincott: Williams & Wilkins.

Polit, D., & Beck, C. (2012). Essentials of nursing research. *Ethics, 23(2)*, 145-160. doi:https://doi.org/10.1016/j.aorn.2011.10.009

Putwain, D., Nicholson, L. J., Pekrun, R., Becker, S., & Symes, W. (2019). Expectancy of success, attainment value, engagement, and Achievement: A moderated mediation

analysis. *Learning and Instruction, 60*, 117–125. doi:https://doi.org/10.1016/j.learninstruc.2018.11.005

Raghvan, A. (2021). *Research and evaluation in education and psychology.* Burlington: Society Publishing.

Ramlall, I. (2017). *Applied structural equation modelling for researchers and practitioners: Using R and Stata for behavioural research.* Bingley: Emerald Group Publishing.

Reicher, S. (2004). The Context of Social Identity: Domination, Resistance, and Change. *Political Psychology, 25(6)*, 921–945. doi:https://doi.org/10.1111/j.1467-9221.2004.00403.x

Roller, M., & Lavrakas, P. (2015). *Applied qualitative research design: A total quality framework approach.* New York: The Guilford Press.

Roschelle, J. (2013). Discussion [Special Issue]. *Educational Psychologist, 48(1)*, 67–70. doi:https://doi.org/10.1080/00461520.2012.749445

Rosenberg, A. (2018). *Philosophy of social science. 5th ed.* New York: Routledge.

Rott. (2006). *Guidance and Counselling Services as Part of a Learner-Centred Approach Making Bologna Work .3.8-1.*

Ruel, E., Wagner, W., & Gillespie, B. (2016). *The practice of survey research: Theory and applications* . Thousand Oaks: SAGE Publications.

Sá, M. J., & Serpa, S. (2018). Transversal competences: Their importance and learning processes by higher education students. *Education Sciences, 8(3)*, 1-12. doi:https://doi.org/10.3390/educsci8030126

Sablonnière, R. d., Taylor, D. M., & Sadykova, N. (2009). Challenges of applying a student-centered approach to learning in the context of education in Kyrgyzstan. *International Journal of Educational Development*, 1-7. doi:https://doi.org/10.1016/j.ijedudev.2009.01.001

Salomon, G. (1984). Television is "easy" and print is "tough": The differential investment of mental effort in learning as a function of perceptions and attributions. *Journal of Educational Psychology, 76*, 647- 658. doi:https://doi.org/10.1037/0022-0663.76.4.647

Samaranayake, P. N. (2022). How technology supports student-centered learning. *EdMedia+ Innovate Learning* (pp. 304-309). Association for the Advancement of Computing in Education (AACE).

Saulnier, B. M. (2009). From “Sage on the Stage” to “Guide on the Side” Revisited: (Un)Covering the Content in the Learner-Centered Information Systems Course. *Information Systems Education Journal; Volume 7, Number 60*, 3-10.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students. 8th ed.* New York: Pearson Education.

Schein, E. H. (1978). *Career dynamics: Matching individual and organizational needs (Vol. 6834).* Addison Wesley Publishing Company.

Schumacker, R. &. (2016). *A beginner's guide to structural equation modeling. 4th ed. .* New York: Routledge.

Schunk, D., & Pajares, F. (2002). The development of academic self-efficacy. In A. W. Eccles, *Development of Achievement Motivation* (pp. 15–31). San Diego: Academic Press.

Schweisfurth, M., & Elliott, J. (2019). When 'best practice' meets the pedagogical nexus: recontextualisation, reframing and resilience. *Comparative Education 55(1)*, 1-8. doi:https://doi.org/10.1080/03050068.2018.1544801

Sekaran, U., & Bougie, R. ( 2016). *Research methods for business: A skill building approach. 7th ed.* Chichester: John Wiley & Sons.

Sekaran, U., & Bougie, R. (2020). *Research methods for business: A skill building approach. 8th ed. .* Danvers: John Wiley & Sons.

Sela-Smith, S. (2002). Heuristic research: A review and critique of Moustakas's method. *Journal of Humanistic Psychology, 42*, 53-88. doi:https://doi.org/10.1177/0022167802423004

Seltzer, L. (2021). How do you define success? *Psychology Today*.

Serin, H. (2018). A Comparison of Teacher-Centered and Student-Centered Approaches in Educational Settings. *International Journal of Social Sciences & Educational Studies Vol.5, No.1*, 164-167. doi:https://doi.org/10.23918/ijsses.v5i1p164

Sharvashidze, G. (2005). *Private higher education in Georgia.* Paris: International Institute for Educational Planning.

Sikandar, A. (2015, December Vol. 2 No. 2). John Dewey and his philosophy of education. *Journal of Education and Educational Development*, 191-201. doi:https://doi.org/10.22555/joeed.v2i2.446

Sikorska, I. (2023). Europeanization And Reformation Of Higher Education Sector In The Eastern Partnership Countries Through Bologna Process In Pursuit Of The European Integration. *Eastern European Journal for Regional Studies (EEJRS), Center for Studies in European Integration (CSEI), Academy of Economic Studies of Moldova (ASEM), vol. 9(2)*, 6-23. doi:https://doi.org/10.53486/2537-6179.9-2.01

Singh, N. (2011). Student-centered learning (SCL) in classrooms—A comprehensive overview. *ducational Quest-An International Journal of Education and Applied Social Sciences, 2(2)*, 275-282.

Smith, T. (2014). Elementary science instruction: Examining a virtual environment for evidence of learning, engagement, and 21st century competencies. *Edu. Sci., 4*, 122–138. doi:https://doi.org/10.3390/educsci4010122

Speziale, H. S., Streubert, H. J., & Carpenter, D. R. (2011). *Qualitative research in nursing: Advancing the humanistic imperative.* Lippincott : Williams & Wilkins.

Stoffle, C., & Cuillier, C. (2010). Student Centred Service and Support: A Case Study of Arizona Libraries Information Commons. *Journal of Library Administration, 50*, 117-134. doi: https://doi.org/10.1080/01930820903455065

Stokes, P., & Wall, T. (2014). *Research methods.* London: Palgrave Macmillan.

Sturges, J. (1999). What it Means to Succeed: Personal Conceptions of Career Success Held by Male and Female Managers at Different Ages. *British Journal of Management, 10(3)*, 239–252. doi:https://doi.org/10.1111/1467-8551.00130

Swain, J. M., & Spire, Z. D. (2020). The role of informal conversations in generating data, and the ethical and methodological issues. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research (Vol. 21, No. 1)*.

Swain, J., & King, B. (2022). Using informal conversations in qualitative research. *International Journal of Qualitative Methods, 21*. doi:https://doi.org/10.1177/16094069221085056

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The social psychology of intergroup relations*, 33–37.

Thamraksa, C. (2003). Student-Centered Learning: Demystifying the Myth . *Studies in language and language teaching*, 1-6.

Thomson, K. (2015). Informal conversations about teaching and their relationship to a formal development program: Learning opportunities for novice and mid-career academics. *International Journal for Academic Development, 20(2)*, 137–149. doi:https://doi.org/10.1080/1360144X.2015.1028066

Thomson, K., & Trigwell, K. R. (2018). The role of informal conversations in developing university teaching? *Studies in Higher Education, 43(9)*, 1536–1547. doi:https://doi.org/10.1080/03075079.2016.1265498

Tlaiss, H. A. (2019). Contextualizing the career success of Arab women entrepreneurs. *Entrepreneurship & Regional Development, 31(3–4)*, 226–241. doi:https://doi.org/10.1080/08985626.2018.1551790

Tsankov, N. (2017). Development of transversal competences in school education (a didactic interpretation). *Int. J. Cogn. Res. Sci. Eng. Edu., 5*, 129–144. doi:https://doi.org/10.5937/ijcrsee1702129T

Tsui, L. (2002). Fostering Critical Thinking through Effective Pedagogy: Evidence from Four Institutional Case Studies. *The Journal of Higher Education, 73:6*, 740-763. doi:https://doi.org/10.1353/jhe.2002.0056

Turner, J. C. (1975). Social comparison and social identity: Some prospects for intergroup behaviour. *European Journal of Social Psychology, 5(1)*, 1–34. doi:https://doi.org/10.1002/ejsp.2420050102

Tvaltchrelidze, N., & Aleksidze, N. (2019). Georgian Teachers' Awareness of the Importance of Student-centered Classroom Management Tendencies. *International Journal of Social Sciences & Educational Studies*, 207-215. doi:https://doi.org/10.23918/ijsses.v5i3p207

UNDP, U. N. (2004). *Millennium development goals in Georgia.* Tbilisi.

Van Eekelen, I., Boshuizen, H., & Vermunt, J. (2005). Self-Regulation in Higher Education Teacher Learning. *Higher Education, 50*, 447-471. doi:https://doi.org/10.1007/s10734-004-6362-0

Van Huyssteen, N. (2022). *A consumer purchase decision model for the South African personal motor vehicle insurance industry.* University of South Africa: Doctoral dissertation.

Vermeiren, S., Duchatelet, D., & Gijbel, D. (2022). Assessing students' self-efficacy for negotiating during a role-play simulation of political decision-making. In *Taking student characteristics and simulation features into account. Studies in Educational Evaluation. 72* (p. 101124). doi:https://doi.org/10.1016/j.stueduc.2022.101124

Virkus, S., & Metsar, S. (2004). General Introduction to the Role of the Library for University Education. *LIBER QUARTERLY, ISSN 1435-5205*, 290-305. doi: https://doi.org/10.18352/lq.7780

Weatherton, M., & Schussler, E. E. (2021). Success for All? A Call to Re-examine How Student Success Is Defined in Higher Education. *CBE—Life Sciences Education, 20(1)*, es3. doi:https://doi.org/10.1187/cbe.20-09-0223

Weimer, M. (2002). *Learner-Centered Teaching: Five Key Changes to Practice.* San Francisco: Jossey-Bass.

Westerheijden, D. F. (2008). Excellence in European higher education: Bologna and Beyond. *Internationalization and the Move Towards Excellence in Higher Education 2008: Conference.*

Whittemore, S. (2018). *Transversal competencies essential for future proofing the workforce.* . White Paper, July. SkillaLibrary. cornerstoneondemand.com.

Wigfield, A., & Eccles, S. J. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology, 25(1)*, 68–81. doi:https://doi.org/10.1006/ceps.1999.1015

Williamson, K., & Johanson, G. (2018). *Research methods: Information, systems, and contexts. 2nd ed.* Cambridge: Chandos Publishing.

Wilson, J. (2014). *Essentials of business research: A guide to doing your research project. 2nd ed.* London: SAGE.

Wood, L., & Olivier, M. A. (2004). A self-efficacy approach to holistic student development. *South African Journal of Education, 24*, 289–94. doi:https://doi.org/10.4314/SAJE.V24I4.25003

Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision making. *Journal of Personality and Social Psychology, 56(3)*, 407. doi:https://doi.org/10.1037//0022-3514.56.3.407

Wulf, C. (2017). "From Teaching to Learning": Characteristics and Challenges of a Student-Centered Learning Culture. In H. A. Mieg, *Inquiry-Based Learning – Undergraduate Research; The German Multidisciplinary Experience* (pp. 47-55). SpringerOpen.

Xian, H., & Meng-Lewis, Y. (2018). *Business research methods for Chinese students: A practical guide to your research project.* London: SAGE Publications.

Xin, L., Zhou, W., Li, M., & Tang, F. (2020). Career Success Criteria Clarity as a Predictor of Employment Outcomes. *Frontiers in Psychology, 11*, 540. doi: https://doi.org/10.3389/fpsyg.2020.00540

Zhang, Y., & Wildemuth, B. M. (2009). Qualitative analysis of content. *Applications of social research methods to questions in information and library science, 308(319)*, 1-12.

Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2013). *Business research methods. 9th ed.* Mason: South-Western Cengage Learning.

Zikmund, W., D'Allesandro, S., Lowe, B., Winzar, H., & Babin, B. (2017). *Marketing research. 4th ed.* Sydney: Cengage Learning.

Zimmerman, B. (2002). Becoming a Self-Regulated Learner. *heory into Practice, 21:2*, 64-70. doi:https://doi.org/10.1207/s15430421tip4102_2

## APPENDIX: Survey questionnaire

### სტუდენტზე ორიენტრიებული სწავლება საქართველოში და მისი გავლენა კარიერულ წარმატებზე

**კვლევის მიზანი:** კვლევის მიზანია, შევისწავლოთ სტუდენტზე ორიენტირებული სწავლების გავლენა კარიერულ წარმატებაზე.

**კვლევაში მონაწილეობის სავარაუდო ხანგრძლივობა:** 15-20 წუთი.

**კვლევაში მონაწილეობის მნიშვნელობა:** თქვენი გამოცდილება და შეხედულებები დაგვეხმარება, უკეთ გავიგოთ სტუდენტზე ორიენტირებული სწავლების თავისებურებები და მისი გავლენა კარიერულ წარმატებაზე. თქვენი წვლილი ხელს შეუწყობს ამ საკითხის სიღრმისეულ ანალიზს, რამაც, შესაძლებელია, გავლენა იქონიოს მომავალ საგანმანათლებლო პოლიტიკაზე.

**პროცედურები:** კვლევა მოიცავს თანხმობის ფორმისა და კითხვარის შევსებას.

**რისკები:** კვლევაში მონაწილეობა არ წარმოადგენს რაიმე სახის რისკს თქვენთვის.

**დამატებითი ინფორმაცია:** დამატებითი კითხვების შემთხვევაში, გთხოვთ, დაუკავშირდეთ კვლევის ხელმძღვანელს (ნათია გეგელაშვილს) შემდეგ ელექტრონულ მისამართზე: n.gegelashvili@eeu.edu.ge

**მონაწილის უფლებები:** თქვენი მონაწილეობა ნებაყოფლობითია. თქვენ უფლება გაქვთ, პროცესის ნებისმიერ ეტაპზე უარი თქვათ კვლევაში მონაწილეობაზე ყოველგვარი ახსნა-განმარტების გარეშე.

**კონფიდენციალურობა და ანონიმურობა:** მოწოდებული ინფორმაცია და კვლევის შედეგები სრულად იქნება კონფიდენციალური. აღნიშნული კვლევის შედეგები გამოქვეყნდება მონოგრაფიასა და სამეცნიერო სტატიებში, სადაც განხილული იქნება მხოლოდ შედეგების განზოგადებული მონაცემები.

**მონაწილეობის თანხმობა:** გთხოვთ, დაადასტუროთ თქვენი თანხმობა კვლევაში მონაწილეობაზე შესაბამისი თანხმობის ფორმის შევსებით.

## თანხმობის ფორმა

**მე ვაცნობიერებ, რომ:**

- კითხვარიდან მიღებული ინფორმაცია გამოყენებული იქნება მხოლოდ კვლევის მიზნებისთვის.
- ჩემს შესახებ მოწოდებული ინფორმაცია განიხილება როგორც კონფიდენციალური და არ იქნება ხელმისაწვდომი სხვა პირებისთვის, მათ შორის საუნივერსიტეტო საზოგადოებისთვის.
- ინდივიდუალური პასუხები არ გადაეცემა მონაწილეებს ან სხვა პირებს.
- გაანალიზდება მხოლოდ კვლევის შედეგებში გამოვლენილი ზოგადი ტენდენციები და არა კონკრეტული, ინდივიდუალური შედეგები.

- **ვეთანხმები**
- **არ ვეთანხმები**

## A ზოგადი ინფორმაცია

**A1. ასაკი**

- 20-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
- 51 წელი და მეტი

**A2. სქესი**

- მამრობითი
- მდედრობითი

**A3. გთხოვთ, მიუთითოთ თქვენი აკადემიური ხარისხი, რომელიც მიიღეთ საქართველოში**

- ბაკალავრის ხარისხი (საქართველოში მიღებული)
- აქტიური მაგისტრანტი (საქართველოში)
- მაგისტრის ხარისხი (საქართველოში მიღებული)
- დოქტორანტი (საქართველოში)
- დოქტორის ხარისხი (საქართველოში მიღებული)

**A.4 რომელ წელს დაასრულეთ სწავლის ის საფეხური, რომელშიც უკვე ფლობთ აკადემიურ ხარისხს? (მაგ. დოქტორანტის შემთხვევაში, მიუთითეთ მაგისტრატურის დასრულების წელი, ხოლო მაგისტრანტის შემთხვევაში - ბაკალავრიატის დასრულების წელი).**

<u>ყურადღება: კვლევის გაგრძელება შეგიძლიათ მხოლოდ იმ შემთხვევაში, თუ სწავლის რომელიმე საფეხური (ბაკალავრიატი, მაგისტრატურა, დოქტორანტურა) დაასრულეთ **2010** წლის შემდგომ პერიოდში საქართველოში.</u>

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**A5. გთხოვთ მიუთითოთ უნივერსიტეტის ფორმა, რომელიც დაამთავრეთ:**

- სახელმწიფო უნივერსიტეტი საქართველოში
- კერძო უნივერსიტეტი საქართველოში
- როგორც სახელმწიფო, ასევე კერძო უნივერსიტეტი საქართველოში

**A6. გთხოვთ, მიუთითოთ თქვენი აკადემიური დისციპლინა ან სფერო:**

| | | |
|---|---|---|
| 1 | აგრარული მეცნიერებები | |
| 2 | ბიზნესის ადმინისტრირება | |
| 3 | განათლება | |
| 4 | ინჟინერია | |
| 5 | საბუნებისმეტყველო მეცნიერებები | |
| 6 | სამართალი | |
| 7 | სოციალური მეცნიერებები | |
| 8 | ხელოვნება | |
| 9 | ჯანდაცვა | |
| 10 | ჰუმანიტარული მეცნიერებები | |
| 11 | არქიტექტურა | |
| 12 | ეკოლოგია/ -გარემოსმცოდნეობა | |
| 13 | კულტურის კვლევები | |
| 14 | რეგიონმცოდნეობა | |
| 15 | ანთროპოლოგია | |
| 16 | საჯარო მმართველობა | |

**A7. ხართ თუ არა დაოჯახებული?**

- დიახ
- არა

**A8. გყავთ თუ არა შვილი/ შვილები?**

- დიახ
- არა

**A9. გთხოვთ, მიუთითოთ მშობლების განათლების დონე:**

- საშუალო განათლება
- პროფესიული განათლება
- არასრული უმაღლესი განათლება
- უმაღლესი განათლება
- დოქტორის ხარისხი
- სხვა

**A10. გთხოვთ, მიუთითოთ თქვენი GPA ბოლოს დასრულებული აკადემიური პროგრამის მიხედვით:**

0.0 – 1.0

1.1 – 2.0

2.1 – 3.0

3.1 – 4.0

**A11. ხართ თუ არა დასაქმებული?**

- დიახ
- არა

**A12. ხართ თუ არა პროფესიით დასაქმებული?**

- დიახ
- არა

**A13. რამდენი წელია, რაც ხართ პროფესიით დასაქმებული?**

- 0-5 წელი
- 6-10 წელი
- 11-15 წელი
- 16-20 წელი
- 21 -25 წელი
- 26 წელი და ზემოთ

**A14. გთხოვთ, მიუთითოთ თქვენი როლი ორგანიზაციაში:**

- ზედა რგოლის მენეჯერი
- საშუალო რგოლის მენეჯერი
- ქვედა რგოლის მენეჯერი

**A15. ეთანხმებით თუ არა მოსაზრებას, რომ უნივერსიტეტის კურსდამთავრებული უნივერსიტეტში მიღებული ცოდნითა და კომპეტენციებით მზად არის შრომის ბაზარზე წარმატების მისაღწევად?**

გთხოვთ, გამოიყენოთ 10 ბალიანი სკალა: 1=საერთოდ არ ვეთანხმები; 10=სრულიად ვეთანხმები.

<u>თუ სწავლის რომელიმე საფეხური გაიარეთ საზღვარგარეთ (მაგ. ბაკალავრიატი საქართველოში, მაგისტრატურა უცხოეთში) გთხოვთ, კითხვარის შევსებისას იხელმძღვანელოთ ქართული სიტუაციით.</u>

## B. Career Success (SUB) = დამოკიდებული ცვლადი

**B1. გთხოვთ, 5 ბალიან სკალაზე შეაფასოთ ქვემოთ მოცემული დებულებები:**

| | დებულებები | 1 სრულიად არ ვეთანხმები | 2 | 3 | 4 | 5 სრულიად ვეთანხმები |
|---|---|---|---|---|---|---|
| 1 | ვარ კმაყოფილი ჩემი კარიერული წინსვლით. | | | | | |
| 2 | მაქვს პროფესიული განვითარების შესაძლებლობები. | | | | | |
| 3 | მაქვს სასურველი პოზიცია ორგანიზაციაში. | | | | | |
| 4 | ვიღებ კონკურენტულ ანაზღაურებას. | | | | | |
| 5 | მაქვს პოზიტიური სამუშაო გარემო. | | | | | |
| 6 | ვგრძნობ მენეჯმენტის მხარდაჭერას. | | | | | |

## K. Individual competences (COM)

**K1. რამდენად ეთანხმებით მოსაზრებას, რომ უნივერსიტეტმა მოგცათ ქვემოთ ჩამოთვლილი უნარები:**

| დებულებები | 1 სრულიად არ ვეთანხმები | 2 | 3 | 4 | 5 სრულიად ვეთანხმები |
|---|---|---|---|---|---|
| **კრიტიკული აზროვნება:** | | | | | |
| დასკვნების გამოტანამდე ვაფასებ მტკიცებულებებს. | | | | | |
| შემიძლია საკითხების დანახვა სხვადასხვა პერსპექტივიდან. | | | | | |
| **კრეატიული აზროვნება:** | | | | | |
| ხშირად მომდის პრობლემების ახლებური გადაწყვეტის იდეები. | | | | | |
| **პრობლემის გადაჭრის უნარი:** | | | | | |
| რთულ პრობლემებს სისტემურად ვუდგები. | | | | | |
| ვსწავლობ ჩემი შეცდომებიდან და ვიყენებ ამ გაკვეთილებს მომავალში პრობლემების გადასაჭრელად. | | | | | |
| **გუნდური მუშაობის უნარი** | | | | | |
| გუნდის წევრებთან ყოველთვის ვსაუბრობ და ვუზიარებ ჩემს იდეებს. | | | | | |
| კონფლიქტების მოგვარებისას ვცდილობ, ვიყო კონსტრუქციული და ღია | | | | | |
| **კომუნიკაციის უნარები** | | | | | |
| მაქვს უნარი, რთული საკითხები მარტივად ავუხსნა სხვებს. | | | | | |
| **დარგობრივი უნარი (პროფესია)** | | | | | |
| ჩემს სფეროში მიმდინარე ტენდენციებსა და სიახლეებს მუდმივად ვადევნებ თვალს. | | | | | |
| მაქვს უნარი, ჩემს სფეროში არსებულ პრობლემებს კრეატიულად და ეფექტურად ვუპასუხო. | | | | | |

## F. Academic Self-efficacy

**F1. გთხოვთ, გაიხსენოთ თქვენი სტუდენტობის პერიოდი და 5-ბალიან სკალაზე შეაფასოთ შემდეგი წინადადებები:**

| | დებულებები | 1 სრულიად არ ვეთანხმები | 2 | 3 | 4 | 5 სრულიად ვეთანხმები |
|---|---|---|---|---|---|---|
| 1 | მქონდა რწმენა ჩემი აკადემიური შესაძლებლობების. | | | | | |
| 2 | შემეძლო დამეძლია აკადემიური გამოწვევები. | | | | | |
| 3 | ვახერხებდი დროის ეფექტიან მართვას. | | | | | |
| 4 | შემეძლო სასწავლო პრიორიტეტების განსაზღვრა. | | | | | |
| 5 | ვინარჩუნებდი მოტივაციას რთული დავალებების შესრულებისას. | | | | | |
| 6 | მქონდა დამოუკიდებელი სწავლის უნარი. | | | | | |

## G. SCL - Institutional conditions

**G1. გაიხსენეთ უნივერსიტეტში სწავლის პერიოდი და გთხოვთ, 5 ბალიან სკალაზე შეაფასოთ ქვემოთ მოცემული დებულებები:**

| | დებულებები | 1 სრულიად არ ვეთანხმები | 2 | 3 | 4 | 5 სრულიად ვეთანხმები |
|---|---|---|---|---|---|---|
| 1 | სასწავლო აუდიტორიები კარგად იყო აღჭურვილი და იყო კომფორტული. | | | | | |
| 2 | ბიბლიოთეკა უზრუნველყოფილი იყო საჭირო სასწავლო მასალებით და საერთაშორისო ელექტრონული საბიბლიოთეკო ბაზებით. | | | | | |
| 3 | კომპიუტერული ლაბორატორიები თანამედროვე ტექნიკით (კომპიუტერული ტექნიკა, პროგრამული უზრუნველყოფა, ინტერნეტი) იყო აღჭურვილი. | | | | | |
| 4 | უნივერსიტეტი აქტიურ მხარდაჭერას უწევდა სტუდენტებს კარიერული განვითარების კუთხით (მაგ. დასაქმების ფორუმების ორგანიზება, შეხვედრა დამსაქმებლებთან). | | | | | |
| 5 | მქონდა შესაძლებლობა მონაწილეობა მიმეღო ადგილობრივ და საერთაშორისო | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | პროექტებში, კონფერენციებსა და საფეხურის დონის შესაბამის კვლევებში. | | | | | |
| 6 | სანიტარულ-ჰიგიენური პირობები იყო დამაკმაყოფილებელი. | | | | | |

## G. SCL - Innovative teaching

**G2. რამდენად ხშირად იყენებდნენ თქვენი ლექტორები ქვემოთ ჩამოთვლილ სწავლის მეთოდებს და სტრატეგიებს?**

| დებულებები | 1 არასდროს | 2 | 3 | 4 | 5 ძალიან ხშირად |
|---|---|---|---|---|---|
| **ლექცია:** ლექტრი კითხულობს ლექციას და ბოლოს უტოვებს სტუდენტებს მცირე დროს შეკითხვებისთვის. | | | | | |
| **ლექცია-დისკუსია:** ლექტორისა და სტუდენტების ინტერაქცია ლექციის დროს. | | | | | |
| **შემთხვევის ანალიზი:** ცხოვრებისეული სიტუაცია ან წარმოსახვითი სცენარი. სტუდენტებს მოეთხოვებათ გაანალიზონ დადგენილი შემთხვევები და წარმოადგინონ თავიანთი ინტერპრეტაციები ან გადაწყვეტილებები, რომლებიც მხარდაჭერილია გონივრული მსჯელობით და ვარაუდებით. | | | | | |
| **კოოპერაციული სწავლება:** სტუდენტების ჯგუფები, რომლებიც ერთად მუშაობენ დავალების შესასრულებლად. | | | | | |
| **საკლასო დისკუსია:** სტუდენტების მსჯელობა წყვილებში/ჯგუფებში. | | | | | |
| **აღმოჩენითი სწავლება:** კვლევაზე/ დაკვირვებაზე დაფუძნებული სასწავლო მეთოდი, რომლის დროსაც სტუდენტები იყენებენ წინარე ცოდნასა და გამოცდილებას ახალი ინფორმაციის აღმოსაჩენად, რომელსაც შემდეგ სწავლების პროცესში იყენებენ. | | | | | |
| **თვითსწავლება:** სტუდენტები მუშაობენ დამოუკიდებლად ან მცირე ჯგუფებში; ზოგჯერ პედაგოგის დასწრების გარეშე და და ეყრდნობიან სხვადასხვა ინფორმაციის წყაროს. | | | | | |
| **როლური თამაში:** კონკრეტული პირის როლის მორგება ან კონკრეტული სიტუაციის განსახიერება. | | | | | |
| **პრეზენტაცია:** სტუდენტები ინდივიდუალურად ან ჯგუფურად ამუშავებენ თემას და წარადგენენ მას ჯგუფის წინაშე. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **სიმულაციები:** სტუდენტი მოხვედრილია „რეალურ“ სიტუაციაში ან იმიტირებულ ვირტუალურ/რეალურ სიტუაციაში. | | | | | |
| **პრობლემაზე დაფუძნებული სწავლება:** ლექტორი სტუდენტებს წარუდგენს პრობლემას გადასაჭრელად. | | | | | |

## Student-Centered Learning in Georgia and Its Effect on the Career Success

**Purpose of the Study**

The purpose of this study is to examine the effect of Student-Centered Learning (SCL) on career success.

**Estimated Duration of Participation:** Participation in the study will take approximately 15–20 minutes.

**Significance of Participation**

Your experience and perspectives will help us better understand the characteristics of SCL and its effect on career success. Your contribution will support an analysis of this topic, which may potentially influence future educational policies.

**Procedures:** The study involves completing a consent form and a questionnaire.

**Risks:** Participation in this study does not involve any risks.

**Additional Information:** If you have any additional questions, please contact the researcher (Natia Gegelashvili) at the following email address: n.gegelashvili@eeu.edu.ge

**Participant Rights:** Your participation is voluntary. You have the right to withdraw from the study at any stage without providing any explanation.

**Confidentiality and Anonymity:** All information provided and the results of the study will remain fully confidential. The results of this research will be published in a monograph and scientific articles, where only aggregated and generalized data will be presented.

**Consent to Participate:** Please confirm your consent to participate in the study by completing the appropriate consent form.

**Consent Form**

**I understand that:**

- The information obtained from the questionnaire will be used solely for research purposes.
- The information provided about me will be treated as confidential and will not be accessible to other individuals, including members of the university community.
- Individual responses will not be shared with participants or third parties.
- Only general trends identified through the analysis of research results will be examined, not individual outcomes.

- **I agree**
- **I do not agree**

## A General Information

**A1. Age**

- 20-25
- 26-30
- 31-35
- 36-40
- 41-45
- 46-50
- 51 and above

**A2. Gender**

- Male
- Female

**A3. Please indicate the academic degree you obtained in Georgia:**

- Bachelor's degree (obtained in Georgia)
- Current Master's student (in Georgia)
- Master's degree (obtained in Georgia)
- Doctoral student (in Georgia)
- Doctoral degree (obtained in Georgia)

**A.4 In which year did you complete the level of study for which you already hold an academic degree?**

**(For doctoral students, indicate the year of completion of the Master's degree; for Master's students, indicate the year of completion of the Bachelor's degree.)**

**Note: You may continue the survey only if you completed at least one level of higher education (Bachelor's, Master's, or Doctoral) in Georgia after 2010.**

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**A5. Please indicate the type of university you graduated from:**

- Public university in Georgia
- Private university in Georgia
- Both public and private universities in Georgia

**A6. Please indicate your academic discipline or field:**

| | | |
|---|---|---|
| 1 | Agricultural Sciences | |
| 2 | Business Administration | |
| 3 | Education | |
| 4 | Engineering | |
| 5 | Natural Sciences | |
| 6 | Law | |
| 7 | Social Sciences | |
| 8 | Arts | |
| 9 | Healthcare | |
| 10 | Humanities | |
| 11 | Architecture | |
| 12 | Ecology / Environmental Studies | |
| 13 | Cultural Studies | |
| 14 | Regional Studies | |
| 15 | Anthropology | |
| 16 | Public Administration | |

**A7. Are you married?**

- o Yes
- o No

**A8. Do you have a child /children?**

- o Yes
- o No

**A9. Please indicate your parents' level of education:**

- o Secondary education
- o Vocational education
- o Incomplete higher education
- o Higher education
- o Doctorate degree
- o Other

**A10. Please indicate your GPA based on the most recently completed academic program:**

- 1.0
- 2.0
- 3.0
- 4.0

**A11. Are you currently employed?**

- Yes
- No

**A12. Are you employed in your profession?**

- Yes
- No

**A13. How many years have you been employed in your profession?**

- 0–5 years
- 6–10 years
- 11–15 years
- 16–20 years
- 21–25 years
- 26 years and above

**A14. Please indicate your role in the organization:**

- Senior-level manager
- Middle-level manager
- Lower-level manager

**A15. Do you agree with the statement that university graduates are prepared for success in the labor market based on the knowledge and competencies acquired at university?**

**Please use a 10-point scale, where 1 = Strongly disagree and 10 = Strongly agree.**

**If you completed any level of study abroad (e.g., Bachelor's in Georgia and Master's abroad), please answer the questionnaire based on your experience in Georgia.**

## B. Career Success (SUB) = Dependent Variable

**B1. Please rate the following statements on a 5-point scale:**

| | Statements | 1 Strongly disagree | 2 | 3 | 4 | 5 Strongly agree |
|---|---|---|---|---|---|---|
| 1 | I am satisfied with my career advancement. | | | | | |
| 2 | I have opportunities for professional development. | | | | | |
| 3 | I hold a desirable position in the organization. | | | | | |
| 4 | I receive competitive compensation. | | | | | |
| 5 | I have a positive working environment. | | | | | |
| 6 | I feel supported by management. | | | | | |

## K. Individual competences (COM)

**K1. To what extent do you agree that the university provided you with the following skills?**

| Statements | 1 Strongly disagree | 2 | 3 | 4 | 5 Strongly agree |
|---|---|---|---|---|---|
| **Critical Thinking** | | | | | |
| I evaluate evidence before drawing conclusions. | | | | | |
| I am able to view issues from different perspectives. | | | | | |
| **Creative Thinking** | | | | | |
| I often generate innovative ideas for solving problems. | | | | | |
| **Problem-Solving Skills** | | | | | |
| I approach complex problems systematically. | | | | | |
| I learn from my mistakes and apply these lessons to future problem-solving. | | | | | |
| **Teamwork Skills** | | | | | |
| I communicate and share my ideas with team members. | | | | | |
| I strive to be constructive and open when resolving conflicts. | | | | | |
| **Communication Skills** | | | | | |
| I am able to explain complex issues in a simple and clear manner. | | | | | |
| **Field-Specific (Professional) Skills** | | | | | |
| I continuously follow trends and developments in my field. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| I am able to respond creatively and effectively to problems in my field. | | | | | |

## F. Academic Self-efficacy

**F1. Please recall your period of study and rate the following statements on a 5-point scale:**

| | Statements | 1 Strongly disagree | 2 | 3 | 4 | 5 Strongly agree |
|---|---|---|---|---|---|---|
| 1 | I had confidence in my academic abilities. | | | | | |
| 2 | I was able to overcome academic challenges. | | | | | |
| 3 | I managed my time effectively. | | | | | |
| 4 | I was able to set academic priorities. | | | | | |
| 5 | I maintained motivation when completing difficult tasks. | | | | | |
| 6 | I had the ability to study independently. | | | | | |

## G. SCL - Institutional conditions

**G1. Please recall your period of study at university and rate the following statements on a 5-point scale:**

| | Statements | 1 Strongly disagree | 2 | 3 | 4 | 5 Strongly agree |
|---|---|---|---|---|---|---|
| 1 | Classrooms were well equipped and comfortable. | | | | | |
| 2 | The library was provided with necessary learning materials and access to international electronic databases. | | | | | |
| 3 | Computer laboratories were equipped with modern technology (hardware, software, internet). | | | | | |
| 4 | The university actively supported students' career development (e.g., organizing employment forums, meetings with employers). | | | | | |
| 5 | I had opportunities to participate in local and international projects, conferences, and level-appropriate research activities. | | | | | |
| 6 | Sanitary and hygienic conditions were satisfactory. | | | | | |

## G. SCL - Innovative teaching

**G2. How often did your lecturers use the following teaching methods and strategies?**

| Statements | 1 Strongly disagree | 2 | 3 | 4 | 5 Strongly agree |
|---|---|---|---|---|---|
| **Lecture:** the lecturer delivers the lecture and allows limited time for questions at the end. | | | | | |
| **Lecture–discussion:** interaction between the lecturer and students during the lecture. | | | | | |
| **Case study:** real-life or hypothetical scenarios requiring analysis and reasoned solutions. | | | | | |
| **Cooperative learning:** students work in groups to complete tasks. | | | | | |
| **Classroom discussion:** students discuss topics in pairs or groups. | | | | | |
| **Discovery-based learning:** research- and observation-based learning using prior knowledge to discover new information. | | | | | |
| **Self-directed learning:** students work independently or in small groups, sometimes without instructor presence. | | | | | |
| **Role-playing:** assuming specific roles or acting out particular situations. | | | | | |
| **Presentation:** students prepare and present topics individually or in groups. | | | | | |
| **Simulations:** students engage in real or simulated virtual/real-life situations. | | | | | |
| **Problem-based learning:** the lecturer presents a problem for students to solve. | | | | | |

**VITA: Natia Gegelashvili**

**Contact Information**
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Tel: 599 014411

**Biographical Summary**

Natia Gegelashvili is a doctoral candidate in the faculty of Education Sciences at **East European University (Georgia)**, where she has been pursuing her PhD since 2022. Her academic and research interests lie at the intersection of SCL, higher education policy, educational quality assurance, student and academic staff well-being, and career outcomes of higher education graduates.

She holds a **Master's degree in Communication Research** from **Johannes Gutenberg University of Mainz (Germany)**, conferred in 2016, and **Bachelor's degrees in Publicistics/Sociology** (Johannes Gutenberg University of Mainz, 2013) and **Television and Radio Journalism** (Ivane Javakhishvili Tbilisi State University, Georgia, 2006). Her academic background reflects strong interdisciplinary training across education sciences, sociology, communication, and media studies.

Ms. Gegelashvili has extensive professional experience in **qualitative and quantitative research**, both in academic and applied research settings. From 2014 to 2021, she worked in Germany as a research project manager and researcher at **IFAK – Institute for Market and Social Research**, where she managed international research projects, developed research instruments, coordinated fieldwork, conducted data analysis, and prepared evidence-based recommendations for institutional stakeholders. Since 2021, she has continued her collaboration with IFAK as a freelancer.

Since 2022, she has been affiliated with **East European University**, serving as a Senior Specialist at the Research and Development Department, where she supports scientific research activities, participates in grant proposal development, and fosters international academic collaboration. Since 2024, she has also been working as an **Authorization and Accreditation Expert** at the **National Center for Educational Quality Enhancement of Georgia**, contributing to the evaluation of higher education institutions against national quality standards and supporting institutional quality improvement.

Her research output includes peer-reviewed journal articles, conference proceedings, and contributions to international edited volumes, including publications indexed by **Springer** and journals affiliated with **Sorbonne University**. She is also an active participant in local and international scientific conferences.

Ms. Gegelashvili has received multiple academic awards and research grants, including a **Doctoral Research Grant from Shota Rustaveli National Science Foundation of Georgia** and the **Young Researcher Award** from the international research network *Health, Wellness and Society*. She is fluent in **Georgian**, **German**, and **English**, and actively engages in interdisciplinary research projects at the national and international levels.