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Research Article

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THE INFLUENCE OF SELF-EFFICACY AND SELF-SCHEMAS ON THE FORMATION OF PROFESSIONAL IDENTITY IN ADULT LEARNING PROCESSES

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ABSTRACT

Today, people face many complex challenges, and one of the most important is the need to always adapt to changes in the environment. This means that a person must always be ready to learn and improve. Consequently, professional identity is not considered fixed or static, but rather as continuously developing through learning. The ability and willingness to grow professionally are key factors in achieving workplace success. The aim of this paper is to investigate the underlying mechanisms of professional identity formation, conceptualize it as a dynamic and continuous lifelong learning process, and to determine the importance of self-efficacy and self-schemas. A total of 258 adult respondents participated in the study, ranging in age from 18 to 60 years. The results revealed the crucial role of self-efficacy and self-schemas in the development of professional identity. The findings of this study hold significant theoretical and practical implications for the field of adult education and, more broadly, for educational psychology.

Keywords: professional identity, learning, self-efficacy, self-schemas.

INTRODUCTION

In the modern world, rapid changes are taking place against the backdrop of globalization and technological progress, leading to the diversification of the labor market. Alongside increased job opportunities, expectations and requirements are also rising, pushing individuals to continuously update their knowledge and develop relevant skills in order to remain competitive in dynamic and changing conditions. Consequently, individuals are increasingly engaged in the process of self-development, a process fundamentally grounded in learning.

At this stage, particular importance is attached to underlying psychological processes that determine an individual's self-perception in relation to their professional role and its integration into the professional context (Trede *et al.,* 2011). Professional identity is a complex construct and a central component of an individual's social identity (Creary, 2016). Importantly, the formation of professional identity takes place within the learning process and is influenced by multiple factors, including an individual's belief in their own skills and abilities - self-efficacy (Dinther *et al.,* 2011). Conversely, low levels of self-efficacy and an unclear professional identity often result in difficulties such as role confusion and professional uncertainty. Therefore, it is essential to assign special importance to the study of professional identity in the context of adults, since its development through learning, supported by self-efficacy and appropriate self-schemas, can serve as a basis for successful professional change and psychological well-being.

Professional Identity

Professional identity refers to an individual's self-perception within a professional role - a set of beliefs, motives, values, and experiences through which individuals define themselves in a professional context.

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Accordingly, professional identity serves as a central mechanism through which individuals construct meaning for themselves (Creary, 2016). Beyond its role in meaning-making, professional identity also influences psychological well-being, self-esteem, and behavioral patterns (Creary, 2016). Thus, its significance in shaping psychological and behavioral processes, both within and beyond the workplace, is considerable.

Professional identity is not a static construct; rather, it continuously evolves in accordance with accumulated experiences and knowledge. The social learning theory proposed by Jean Lave and Etienne Wenger (1991) conceptualizes learning not as an isolated individual act, but as a socially embedded process that plays a crucial role in identity formation. The authors further emphasize that professional identity should be understood in the broader context of social identity (Lave & Wenger, 1991).

In a later work, Wenger (1998) highlights the close relationship between learning and identity as a unified process. Learning is understood as a continuous social articulation of who we are, the groups to which we belong, and how we perceive our role in society. Accordingly, engagement in practical activities fosters the active construction of knowledge, which in turn provides the foundation for identity formation (Wenger, 1998).

The foundation of professional identity lies in the learning process, which occurs across both formal and informal settings. At the same time, this process is influenced by multiple factors, including individuals' beliefs in their own skills and abilities - self-efficacy (Dinther *et al.,* 2011).

Self-efficacy

The concept of self-efficacy was first introduced within Albert Bandura's social-cognitive theory of learning. Bandura defined self-efficacy as an individual's belief in their own ability to plan and carry out actions necessary to achieve a specific goal (Bandura, 1993).

Self-efficacy changes throughout adulthood in accordance with individual experiences and age-related challenges, and it is closely tied to developmental tasks. For example, during middle and late adulthood, self-efficacy plays a key role in processes of professional retraining and lifelong learning. Adults with high self-efficacy are more likely to participate actively in training programs, embrace technological innovations, and master new skills. In contrast, low self-efficacy discourages initiative and creates expectations of failure (Cervone *et al.,* 2006).

The relationship between self-efficacy and learning is particularly evident in the context of academic self-efficacy. Bandura emphasized that self-efficacy is not a global construct expressed uniformly across all domains, but rather a differentiated belief system closely tied to specific activities (Bandura, 2006). Academic self-efficacy refers to an individual's belief in their ability to perform particular tasks in a learning environment. High academic self-efficacy predicts adaptive behaviors such as making effective learning choices, showing initiative, and completing tasks in a timely and efficient manner. Learners who believe in their abilities allocate resources more effectively, remain committed to their goals, are less likely to procrastinate, and are more actively engaged in the learning process (Nielsen *et al.,* 2018).

Self-efficacy and Cognitive Schemas

Bandura considered self-efficacy not only as a determinant of motivation but also as a central factor in human thought processes. Self-efficacy shapes how individuals perceive challenges, interpret difficulties, and respond to stressful situations. Those with high self-efficacy develop positive and stable cognitive frameworks, envision success-oriented scenarios, and thereby increase their likelihood of achieving success. In contrast, individuals with low self-efficacy tend to focus on negative expectations and imagined failures. The content of these mental scenarios is directly shaped by one's level of self-efficacy and strongly influences both thoughts and behaviors (Bandura, 1993).

While self-efficacy partly determines an individual's style of thinking, cognitive patterns in turn influence the sense of self-efficacy. In particular, self-efficacy is formed and regulated through self-schemas. A self-schema acts as a cognitive filter that integrates abstract and generalized experiences, thereby shaping and reinforcing levels of self-efficacy (Bruch, 1989).

Self-schema

Schemas are fundamental concepts in cognitive psychology, defined as mental structures that shape human perception, thinking, memory, and behavior. The term was first introduced by Bartlett (1932) to explain how memory is constructed: individuals do not simply memorize information, but actively retrieve and reconstruct it in relation to existing schemas (Brewer & Nakamura, 1984).

Recent research has increasingly focused on self-schemas, which are defined as "cognitive generalizations" about the self, based on past experience, that function as filters for organizing and selectively processing information (Marschall & Watson, 2022).

Importantly, self-schemas-particularly how individuals perceive their intellectual abilities as either developing or static-shape emotional and behavioral responses in learning contexts. This relationship is evident in the work of Blackwell and colleagues (2007), who investigated implicit theories of intelligence. They distinguished between two main cognitive frameworks: the fixed theory and the growth theory of intelligence. According to the fixed theory, intelligence is perceived as an unchangeable trait, which often leads to reduced motivation and a tendency to give up quickly after failure. In contrast, the growth theory views intelligence as a malleable capacity that can be improved through effort and learning, thereby fostering higher motivation and sustained effort (Blackwell *et al.,* 2007).

Research Objectives

The purpose of this study is to identify the factors that influence the formation of professional identity. This aim will be pursued through the following research objectives:

- To examine the structure of the professional identity construct;
- To determine the structure of the self-efficacy concept and its role in adult learning;
- To assess the influence of factors contributing to the formation of professional identity, with particular attention to the roles of self-efficacy and self-schemas.

Research Questions

- To what extent do general self-efficacy and academic self-efficacy predict professional identity, and which has the strongest predictive value?
- What is the relationship among self-efficacy, academic self-efficacy, and self-schemas, and how do these variables influence professional identity?

RESEARCH METHODOLOGY

Research Participants

A total of 258 adult respondents participated in the study. The age range of the participants was 18 to 60 years. The mean age of participants was *M = 36.19, SD = 14.19*. A convenience sampling method was employed.

Procedure

The study was conducted online. Each respondent was given detailed information about the study. Prior to participation, respondents were provided with information regarding the purpose, procedure, and confidentiality of the study. After providing informed consent, participants received the questionnaire electronically, presented in Google Docs format. Completing the questionnaire took approximately 10–15 minutes.

Instrument

Participants were given a questionnaire that included a demographic section as well as scales measuring professional identity, general self-efficacy, academic self-efficacy, and cognitive schemas. To assess professional identity, two instruments were employed: Clarke's scale, which focuses on the personal and emotional components of professional identity, and Wu and Henfield's adapted scale, which concentrates on its behavioral and evaluative dimensions. The substantive and structural characteristics of these instruments enable a more comprehensive and multidimensional analysis of professional identity.

Instruments used:

1. Macleod Clark Professional Identity Scale (MCPIS) To assess professional identity, the Macleod Clark Professional Identity Scale developed by Adams and colleagues (2006) was used.

This 9-item instrument is designed to evaluate the quality of professional identity in health and social work students. Of the nine items, three (III, IV, and V) are reverse-scored. Items are rated on a 5-point Likert-type scale (Bilgin & Çetinkaya, 2025).

2. Professional Identity Scale In line with the study objectives, a modified version of the Professional Identity Scale in Counseling (PISC) developed by Hongryun Wu and Malik Henfield (2015) was also used. The original instrument consists of six subscales (engagement behaviors, knowledge about the profession, attitude towards the profession, professional roles and competence, professional philosophy, and professional values) and 53 items (Woo & Henfield, 2015). Based on expert evaluation, 29 items were selected, slightly modified, and adapted to the aims of the present study. These items correspond to the six subscales originally developed by Wu and Henfield.
3. General Self-Efficacy Scale General self-efficacy was measured using the scale developed by Schwarzer and Jerusalem (1995). This instrument consists of 10 items rated on a 4-point Likert-type scale (Scholz *et al.,* 2002).
4. Academic Self-Efficacy Scale Academic self-efficacy was assessed using the General Academic Self-Efficacy Scale developed by Nielsen (2018). This instrument consists of 5 items rated on a 5-point Likert-type scale (van Zyl *et al.,* 2022).
5. Implicit Theory of Intelligence Scale (ITIS) The Implicit Theory of Intelligence Scale (ITIS) developed by Abd-El-Fattah and Yates (2013) was used to measure participants' beliefs about the nature of intelligence and skills. The instrument consists of 14 items divided into two subscales:

- Fixed Intelligence Subscale (Items I, II, IV, VII, VIII, XII, XIV): reflects beliefs that intelligence is an innate and stable trait not subject to change.
- Incremental (Developing) Intelligence Subscale (Items III, V, VI, IX, X, XI, XIII): reflects beliefs that intelligence can develop through experience, effort, and learning. Items are rated on a 4-point Likert-type scale. Subscale scores are calculated as the mean or sum of the scores on the respective seven items (Abd-El-Fattah & Yates, 2013).

RESEARCH RESULTS

The research data were analyzed using SPSS version 27. In accordance with the research objectives, descriptive statistics, regression analysis, and Cronbach's alpha were employed to examine the reliability of the scale items.

Cronbach's Alpha As there are no Georgian-adapted versions of the scales used in this study, their reliability was assessed using Cronbach's alpha. This statistic evaluates how effectively the items of each scale measure the corresponding construct (Table N1).

Table N1 Cronbach's alpha for the scales included in the questionnaire

Scale	N	Number of provisions	Cronbach's alpha
General Self-Efficacy	258	10	.932
Academic Self-Efficacy	258	5	.877
Professional Identity _1[1]	258	9	.827
Professional Identity_2	258	29	.972

[1] Macleod Clark Professional Identity Scale (MCPIS)

Regarding the Implicit Theory of Intelligence Scale, it comprises two subscales - fixed and developing intelligence - which measure two distinct constructs. Consequently, the subscales were analyzed separately, and the internal consistency of each subscale was also assessed (Table N2).

Table N2 Cronbach's alpha for the subscales of the implicit theory of intelligence

Subscale	N	Number of provisions	Cronbach's alpha
Fixed Intelligence	258	7	.843
Incremental (Developing) Intelligence	258	7	.861

Multiple regression

McLeod Clark Professional Identity Scale - General Self-Efficacy, Academic Self-Efficacy, and Self-Schemas

The first model examined the role of general self-efficacy and academic self-efficacy in the formation of professional identity, as measured by the McLeod Clark Professional Identity Scale. Specifically, it assessed the extent to which general and academic self-efficacy predict professional identity indicators.

Multiple regression analysis revealed that general and academic self-efficacy accounted for 26.2% of the variance in professional identity ($R^2 = .262$; $F(2, 255) = 45.31$, $p < .05$). Notably, academic self-efficacy demonstrated the highest predictive value. An increase of one standard unit in academic self-efficacy corresponded to an increase in professional identity by 0.60 units ($B = .60$; $t(255) = 5.30$; $p < .05$), whereas a one-unit increase in general self-efficacy led to a 0.16-unit increase in professional identity ($B = .16$; $t(255) = 2.28$; $p < .05$).

In the second model, the influence of self-schemas was also considered alongside general and academic self-efficacy, allowing for an assessment of the moderating effect of self-schemas on professional identity formation. Multiple regression analysis indicated that general self-efficacy, academic self-efficacy, and self-schemas together accounted for 31.4% of the variance in professional identity ($R^2 = .314$; $F(4, 253) = 29.02$; $p < .05$).

Again, academic self-efficacy exhibited the highest predictive value. A one-unit increase in academic self-efficacy was associated with a 0.50-unit increase in professional identity ($B = .50$; $t(253) = 4.37$; $p < .05$), while a one-unit increase in general self-efficacy resulted in a 0.16-unit increase ($B = .16$; $t(253) = 2.31$; $p < .05$).

Furthermore, a one-unit increase in the developing intelligence index led to a 0.43-unit increase in professional identity ($B = .43$; $t(253) = 3.71$; $p < .05$). Conversely, fixed intelligence negatively impacted professional identity, with a one-unit increase in fixed intelligence associated with a 0.37-unit decrease in professional identity ($B = -.37$; $t(253) = -4.05$; $p < .05$).

Professional Identity Measurement Scale - General Self-Efficacy, Academic Self-Efficacy, and Self-Schemas

As two scales were used to assess professional identity, multiple regression analysis was conducted for this measure as well. The analysis revealed that general and academic self-efficacy accounted for 55.7% of the variance in professional identity ($R^2 = .557$; $F(2, 255) = 160.3$; $p < .05$).

Among these variables, academic self-efficacy demonstrated the highest predictive value. A one-unit increase in academic self-efficacy corresponded to a 3.49 - unit increase in professional identity ($B = 3.49$; $t(255) = 9.39$; $p < .05$), while a one-unit increase in general

self-efficacy resulted in a 1.16 - unit increase (B = 1.16; t(255) = 4.96; p< .05).

Regarding self-schemas, a one-unit increase in the developing intelligence index was associated with a 1.54-unit increase in professional identity (B = 1.54; t(253) = 4.08; p< .05). In contrast, fixed intelligence was not a statistically significant predictor of professional identity (B = .214; t(253) = .71; p> .05).

Analysis of the Results

The aim of this study was to identify a model underlying the formation of professional identity in adults and to examine the key variables - self-efficacy and self-schemas - that influence this process.

As mentioned, two instruments were used to assess professional identity: the McLeod Clark Professional Identity Scale and a Professional Identity Measurement Scale developed for this study, based on Wu and Henfield (2015). Accordingly, two regression models were considered for each scale.

The findings indicate that the formation of professional identity within the learning process is largely influenced by self-efficacy. For the Professional Identity Measurement Scale developed specifically for this study, general and academic self-efficacy accounted for 55.7% of the variance in professional identity, whereas for the McLeod Clark scale, they accounted for only 26.2%. This substantial difference may be attributed to the multidimensional nature of Wu and Henfield's adapted scale, which comprises six subscales reflecting distinct components of professional identity. The reliability indices (Cronbach's alpha) of the two scales further underscore their psychometric properties: Clark's scale demonstrated α = .87 (N = 9), while Wu and Henfield's adapted scale exhibited a notably higher reliability of α = .97 (N = 29). These results highlight the utility and robustness of employing a multidimensional instrument for a comprehensive assessment of professional identity.

In both regression models, academic self-efficacy exhibited a higher predictive value than general self-efficacy. This is likely because general self-efficacy does not manifest equally across all domains or situations, limiting its predictive power. In contrast, academic self-efficacy represents a differentiated belief system closely tied to the learning process. Since professional identity develops through learning, academic self-efficacy appears to play a central role in successful self-identification with the professional role.

In the second regression model, the inclusion of self-schemas alongside general and academic self-efficacy significantly improved the model's explanatory power (for the McLeod Clark scale, R^2 increased from .262 to .314; for the new scale, from .557 to .604). This suggests that self-schemas act as moderating variables, influencing both the strength and direction of the relationship between self-efficacy and professional identity.

Specifically, self-schemas oriented toward incremental (developing) intelligence enhanced the effect of self-efficacy on professional identity in the McLeod Clark scale. Positively formulated schemas, emphasizing the possibility of developing one's intelligence beyond existing knowledge or innate abilities, increased the impact of self-efficacy on successful professional identity formation. Conversely, fixed intelligence schemas reduced the predictive value of professional identity, limiting the influence of self-efficacy and hindering professional identity formation.

For Wu and Henfield's adapted scale developing intelligence similarly acted as a moderating variable, positively affecting the relationship between self-efficacy and professional identity. In this case, however, fixed intelligence did not function as a predictor.

Although both scales aim to measure professional identity, their content and structural features may account for observed differences. Clark's scale emphasizes the personal and emotional components of professional identity, such as identification with the profession, pride or shame in one's professional role, and emotional attachment to colleagues. In this context, developing intelligence schemas support the belief in the possibility of professional growth, whereas fixed intelligence schemas act as invisible barriers.

In contrast, Wu and Henfield's adapted scaleis multidimensional, assessing professional knowledge, attitudes, engagement behaviors, ethical competence, and values. It focuses more on behavioral and evaluative aspects of professional identity. Here, fixed intelligence schemas do not act as obstacles; for example, individuals may perform in accordance with professional requirements and adapt to professional roles even if they hold fixed intelligence beliefs. Conversely, developing intelligence schemas promote engagement behaviors (e.g., participation in professional associations, training courses) and professional responsibility. This distinction underscores that the measurement of professional identity depends not only on the construct itself but also on the specificity of the instrument used to assess it.

CONCLUSION

This study produced valuable results, allowing for a comprehensive evaluation of the construct of professional identity. Based on the findings, the main conclusions are as follows:

- The formation of professional identity is significantly influenced by self-efficacy, particularly academic self-efficacy.
- Self-schemas play an important role in shaping professional identity. Specifically, developing intelligence schemas act as positive moderators, enhancing the effect of self-efficacy on professional identity. In contrast, fixed intelligence schemas limit the impact of self-efficacy on the emotional component of professional identity, while leaving behavioral and evaluative components largely unaffected.

These findings suggest a model in which adult learning is not merely a process of acquiring knowledge, but a dynamic, multifactorial process of identity reconstruction, influenced by beliefs in one's abilities and existing cognitive "generalizations" about the self.

These findings suggest a model in which professional identity formation (or it's development) is not merely a process of acquiring new knowledge, but a dynamic, multifactorial process of identity reconstruction, influenced by beliefs in one's abilities and existing cognitive "generalizations" about the self.

Research Limitations

Within the framework of this study, we can talk about several limitations, which are recommended to be taken into account for future research.

First, within the framework of the study, the main variables were assessed using self-assessment scales, which increases the risk of subjectivity, social desirability, and response bias. Accordingly, it is important to use different methods to study the variables in the research process, which will allow us to obtain more objective data around the construct.

It is also worth noting that to assess professional identity, it is important to use a multidimensional instrument that is not limited to

only the emotional or behavioral component. This will help improve the assessment of professional identity.

Finally, one of the limitations of the study may be the questionnaires filled out online, since in this case we do not have information about possible distracters, such as inappropriate environmental conditions (noise, insufficient lighting, etc.), the mood or physical condition of the individual. Also, within the framework of the study, it is important to obtain feedback from respondents regarding whether they encountered difficulties with the content and meaning of the provisions included in the questionnaire, which, of course, affects the results of the study.

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