

A REVIEW OF PSYCHOSOCIAL FACTORS SHAPING MOTIVATION AND ACHIEVEMENT IN AUTOMOTIVE ENGINEERING STUDENTS

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Motivation fuels students' involvement, perseverance, and dedication in their studies, while achievement signifies the accomplishment of educational goals. Academic motivation and achievement play an important role in developing skilled engineers who can adapt to changing industry requirements and job markets, embrace advanced technologies, and maintain high standards of quality, safety, and sustainability. The present study explores the psychosocial factors that constitute academic motivation and achievement determinants among automotive engineering students. Drawing on theories such as Self-determination theory (SDT) by Deci and Ryan (1985), Achievement goal theory (AGT) by Dweck and Nicholls (1984), social cognitive career theory (SCCT) by Bandura (1986) and expectancy-value theory (EVT) by Vroom (1964), this literature review examines how motivation is shaped by factors like self-efficacy, intrinsic and extrinsic motivators, peer relationships, and curriculum relevance. The study employed three main databases such as Web of Science, Scopus, and ScienceDirect, which identified 2184 articles. Based on the inclusion criteria, such as the language being English, the last decade of publications, influencing factors on academic motivation and achievement, and the scope of automotive engineering, 42 articles are mainly included in this narrative review. Although previous research identified relevant cognitive abilities like problem-solving and spatial reasoning, as facilitators of success in science, technology, engineering and mathematics (STEM) fields, they lack specificity for automotive engineering. Non-cognitive factors were also recognized to include intrinsic motivation and the influence of social support systems, but these are underexplored in vocational settings like automotive engineering. This literature review has therefore revealed several key findings. Firstly, individual factors such as intrinsic motivation, self-efficacy, and personality traits significantly influence students' academic motivation and achievement. Secondly, social and environmental factors, including peer influence, teacher support, and school climate, play a crucial role in shaping students' motivation and achievement levels. Additionally, curriculum and program factors, cultural and societal factors, and methodological approaches also impact academic motivation and achievement in automotive engineering education. Cognitive factors like problem-solving skills and creativity contribute to academic success, while non-cognitive elements such as career aspirations and intrinsic/extrinsic motivations also drive student engagement. Therefore, the study implies that educators should enhance motivation through personalized support, curriculum relevance, and innovative teaching methods. These insights can inform strategies to improve educational outcomes and better prepare students for careers in the automotive industry.

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