Emotional problems and academic performance of students in manufacturing

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Abstract

This paper presents some results of the project entitled “Improve your emotional skills” (I-YES), promoted in the framework of Erasmus+ program in a partnership of organizations from 6 European countries. The project concept started from the very poor vocational education and training student's performance in manufacturing. One of the main objectives of the I-YES project is to reduce school failure by increasing student's academic performance. In order to achieve the I-YES project objective, this paper sought to identify their main emotional and social skill needs and deficits. The research employed both quantitative and qualitative instruments, namely questionnaires and focus-groups. The research found the main predictors, the socio-emotional skills with the strongest impact that proved to be perseverance, self-control and self-esteem. Other variables also proved to be essential predictors of school related behaviors and perceptions: perception of the school atmosphere, perception of parental support and perception of teacher attitudes.

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1. Introduction

To create sustainable value through sustainable manufacturing will require transformational and innovative reforms in education with an overall paradigm shift to provide the future generation of engineers, the necessary

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technical knowledge, skills and capabilities [1]. Creative instruction on academic performance of manufacturing in vocational and technological students demonstrates that there is no striking effect of creative instruction on cognition in manufacturing courses [2]. While intelligence [3] and personality [4] predict significantly a wide range of life outcomes, the accumulating evidence suggest that socio-emotional skills also shape various outcomes, related to educational achievement [5], health [6], or job performance [7].

The objective of this paper is to present some results of the project entitled “Improve your emotional skills” (I-YES) [8], promoted in the framework Erasmus+ programme, by 6 organizations from France, Germany, Portugal, Greece Italy and Romania, the “Petru Maior” University of Tirgu Mures.

One of the main objectives of the I-YES project is to reduce study failure by increasing student's academic performance through the improvement of classroom behavior and social competence, the increasing of student's attentiveness, student's deeper commitment to school and the increased time devoted to school work. In order to achieve this objective, I-YES sought to identify how emotional problems interfere with academic performance.

The data analyzed in this paper was collected within the I-YES project by the six partners from France, Germany, Greece, Italy, Portugal and Romania in the vocational education and training manufacturing courses.

2. Instruments and Samples

The research employed both quantitative and qualitative instruments, namely questionnaires and focus-groups. The student questionnaire measured three sets of variables:
(a) Socio-emotional skills based on Goleman’s Four-Cluster Emotional Competency Model (i.e., self-management, relationship management, social-awareness, and self-awareness);
(b) Behavioral problems at school and school atmosphere;
(c) Students’ perception of the attitudes towards school and learning expressed by relevant social actors (i.e., parents, teachers, peers, and community).

The teacher questionnaire measured trainers’ perception of trainees’ socio-emotional skills: self-control, perseverance, relationships management, empathy, school interest, and self-awareness.

The focus groups measured the same variables but instead of closed ended items, they gathered more elaborate and detailed information and captured issues generated by the respondents.

In the study the following samples were used:

- **Trainee questionnaire sample**. The student questionnaires have been applied to a total of 263 teens. The national subsamples included 46 participants from France, 34 from Germany, 35 from Greece, 45 from Italy, 65 from Portugal and 38 from Romania. Of the 259 participants who specified their gender, 44.4% were males and 55.6% were females. Participants’ age ranged between 14 and 29, with a median of 18; 67.3% of them live in urban areas, whereas 30.4 reside in rural areas.
- **Trainee focus group sample**. The focus groups collected information from a total of 113 trainees. The national subsamples included 30 participants from France, 36 from Germany, 15 from Greece, 46 from Italy, 18 from Portugal and 10 from Romania.
- **Trainer questionnaire sample**. The teacher questionnaires have been applied to a total of 155 trainers. The national subsamples included 30 participants from France, 36 from Germany, 15 from Greece, 46 from Italy, 18 from Portugal and 10 from Romania.
- **Trainee focus group sample**. The focus groups collected information from a total of 38 trainers (9 from Germany, 5 from France, 7 from Italy, 10 from Portugal, 7 from Romania).

3. Analytic strategy

The scientific analysis of data is a complicated process that is prone to a series of errors. We sought to address
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