

## The relationship between learning styles and motivation to transfer of learning in a vocational training programme<sup>☆</sup>

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### ABSTRACT

Although there is ample research about Kolb's learning styles, few studies have examined their relationship with motivations to transfer, a concept used to assess whether the content and competencies learned through professional training activities are transferred to the workplace context. Ninety-six students ( $M = 24.58$  years old; 99% males) from three vocational training institutes participated in laboratory activities at the Renewable Energy Research Institute of the University of Castilla-La Mancha, Spain. They completed a self-administered questionnaire that included the Kolb's Learning Styles Inventory; two scales adapted to measure student motivation to transfer their learning from training experiences; and a scale of satisfaction with the activities. A correlation analysis showed positive and moderately strong correlations ( $r = .708$ ;  $p < .01$ ) between motivations to transfer and "the relevance of the activities to academic performance". A discriminant analysis between transfer and learning styles revealed that the "Student training motivation" item resulted in a distinct difference between assimilators and convergers, explaining 97.1% of the model variance (Wilks'  $\lambda = .459$ ;  $\chi^2 = 21.028$ ; Sig. = .002) and classifying 56.4% of the cases. A discussion is presented as to the implications of these results for the theory of learning styles and the ways in which the design of the educational activities described in the study can be improved.

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## Relación entre estilos de aprendizaje y motivación para transferir aprendizajes en formación profesional

### R E S U M E N

#### Palabras clave:

Estilos de aprendizaje  
Motivación para transferir  
Formación profesional

Aunque abundan investigaciones sobre los estilos de aprendizaje de Kolb, escasean estudios sobre su relación con la motivación para el transfer, un concepto utilizado para evaluar la transferencia de contenidos y competencias adquiridas en actividades de formación al contexto laboral. Noventa y seis estudiantes ( $M = 24.58$  años de edad; el 99% varones) de 3 institutos de formación profesional participaron en actividades de laboratorio en el Instituto de Energías Renovables de la Universidad de Castilla-La Mancha, España. Completaron un cuestionario autoadministrado que incluía el Inventario de Estilos de Aprendizaje de Kolb; 2 escalas adaptadas para medir la motivación para el transfer de los estudiantes; y una escala de satisfacción con las actividades. Se observan correlaciones positivas y moderadamente fuertes ( $r = .708$ ;  $p < .01$ ) entre el transfer y la «valoración de la utilidad de las prácticas para sus actividades académicas». Un análisis discriminante entre el transfer y los estilos de aprendizaje reveló que «la motivación de los estudiantes» diferencia claramente entre asimiladores y convergentes; lo que explica el 97.1% de la varianza modelo (Wilks  $\lambda = .459$ ;  $\chi^2 = 21.028$ ; Sig. = .002) y una clasificación del 56.4% de los casos. Se discuten las implicaciones para la teoría de los estilos de aprendizaje y las mejoras en el diseño de este tipo de actividades.

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## Learning styles and education

The changes implemented to improve higher education instruction include the shift from a teacher-focused paradigm to a student-focused one. The student-focused classroom was once a more theoretical than practical concept (Biggs, 2003; Morales, 2006; Yániz, 2006), and as such, educators need concepts, theories and strategies that will help them make the pedagogical transition.

The learning styles proposed by David Kolb (1976) offer a previously validated theoretical-conceptual model that is particularly useful for understanding students' motives and learning needs. A student's learning style is determined using the Learning Style Inventory (LSI); this a successful scale that has been widely applied and validated in many studies (e.g., Beutell & Kressel, 1984; Boyatzis & Kolb, 1991; Chen & Chiou, 2012; Cornwell & Manfredro, 1994; Garner, 2000; Healey & Jenkins, 2000; Kolb & Kolb, 2005, 2012; Manolis, Burns, Assudani, & Chinta, 2013; Richardson, 2011; Williams, Brown, & Etherington, 2013; Yeboah & Sarpong, 2012).

The theory proposes a method for describing how students solve problems and apply new knowledge from personal experience within their learning environment. It considers the psychological processes of perception and processing. Students' experiences are classified along two axes; one whose poles represent *concrete experience* and *abstract conceptualisation* and another that represents a continuum between *active experimentation* and *reflective observation*. The combined scores on each axis indicate which of the four categories of learning styles best describes the student (Fig. 1).

Each style describes a type of learning behaviour. The *divergent* style describes students that primarily engage in concrete

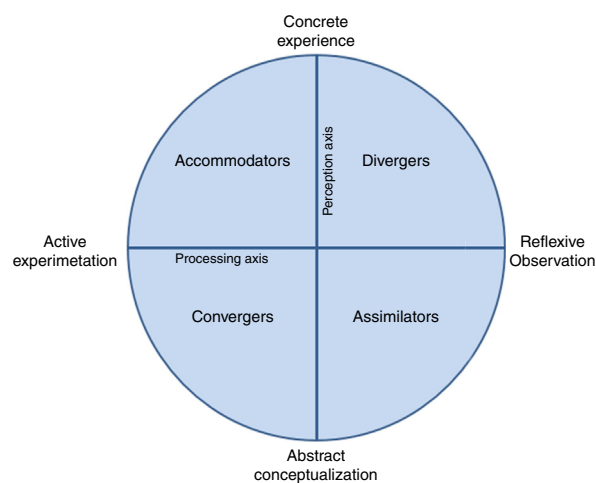


Fig. 1 – Quadrant Model of Kolb's Learning Styles (own elaboration from theory).

thinking and process information reflectively. Such students are committed to learning activities and trust their intuition. In contrast, students belonging to the *convergent* style prefer abstract thinking and active processing and are motivated to discover the practical utility of the learning material. Assimilators combine abstract thinking and reflective processing, preferring to learn in stages. These students are able to comprehend a substantial amount of information because they can easily and systematically organise it. Accommodators, however, combine concrete thinking and active processing. They are more involved in activities because they enjoy taking more risks with their learning experiences and testing

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