

# 25 Comparing the development of transversal skills between virtual and physical exchanges

Bart van der Velden<sup>1</sup>, Sophie Millner<sup>2</sup>,  
and Casper van der Heijden<sup>3</sup>

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## Abstract

This paper aims to compare the impact on the development of transversal skills, such as self-esteem, of virtual and physical exchanges. This is done by comparing the Europe on the Edge programme to the results of the Erasmus Impact Study. In doing so it fills the need that has been expressed in the telecollaboration field to study the impact of online education programmes “outside of students’ and educators’ beliefs” (Helm, 2015, p. 212). We shall argue that it is indeed possible to compare physical and virtual exchanges by measuring the impact on so-called transversal skills.

**Keywords:** virtual exchange, transversal skills, Erasmus, impact study, curiosity, self-efficacy.

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## 1. Introduction

With the rise of the internet we also see a rise in online education. At the same time we see that employers attach great value to international experiences (Brandenburg et al., 2014, p. 14). Virtual Exchanges (VE) intend to provide this

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1. Sharing Perspectives Foundation, Amsterdam, The Netherlands; bart@sharingperspectivesfoundation.com

2. Sharing Perspectives Foundation, Amsterdam, The Netherlands; sophie@sharingperspectivesfoundation.com

3. Sharing Perspectives Foundation, Amsterdam, The Netherlands; casper@sharingperspectivesfoundation.com

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international experience in an online setting. The question arises as to how well these virtual exchanges compare to physical ones.

The Virtual Exchange Coalition (VEC) defines VEs as technology-enabled, sustained, people-to-people education programmes ([Virtual Exchange Coalition, n.d.](#)). They differ from telecollaboration as the acquirement of foreign language is not the primary objective. We use the definition of the VEC, meaning that VEs are (1) technology-enabled, i.e. take place over the internet; (2) people-to-people, thus primarily focused on facilitated interaction between learners; and (3) sustained, meaning curriculum based over a set period of time. In this way they can be seen as the online equivalent of physical exchanges facilitated through the ERASMUS programme.

The stated goals of the VEC invite one to make a direct comparison between their impact and the impact of Physical Exchanges (PEs). One of the broadest studies to date on this subject is the Erasmus Impact Study (EIS) ([Brandenburg et al., 2014](#)). The EIS makes use of the Monitoring Exchange Mobility Outcomes (MEMO) tool. The MEMO-tool was developed to measure the effects of international mobility on the development of students' personality traits which are closely linked to employability and intercultural competence ([CHE Consult, n.d.](#), p. 3). These are classed as 'transversal skills'. The MEMO-tool consists of ten factors, but for the EIS only those factors pertaining to employability were kept: *confidence*, *curiosity*, *decisiveness*, *serenity*, *tolerance of ambiguity*, and *vigour* ([Brandenburg et al., 2014](#), p. 15). It is against these transversal skills that we compare physical exchanges and virtual ones.

## 2. Methodology

This study looked at the impact of the Sharing Perspectives Foundation programme 'EUROPE ON THE EDGE', which ran in the fall semester of 2015. In the programme, students from ten different European countries met online in facilitated video conference sessions in subgroups of ten students for two hours

per week over ten weeks to discuss current European socio-political issues. The setup of this impact study was developed by the Sharing Perspectives Foundation research team as part of the evaluation of the programme. The evaluation survey was presented to students at both the start and end of the programme.

The MEMO-tool does not provide sources for the way they measure personality traits, therefore the measures we use in this study are based on our interpretation of the definitions provided in the EIS. As such, *vigour*, or ‘problem-solver’ (Brandenburg et al., 2014, p. 26), had to be dropped, as no comparable psychometric scale was found. The other scales, their definitions, and the comparable psychometric measures we used are presented in Table 1.

Table 1. Definitions of personality measures in the EIS and comparable psychometric scales

Name EIS	Definition EIS	Comparable Scale	Definition
Tolerance of Ambiguity	Acceptance of other people’s culture and attitudes and adaptability	Intolerance of ambiguity (Subscale of the Need for Closure Scale) (Webster & Kruglanski, 1994)	A range, from rejection to attraction, of reactions to stimuli perceived as unfamiliar, complex, dynamically uncertain or subject to multiple conflicting interpretations (McLain, 1993)
Curiosity	Openness to new experiences	Curiosity and exploration Inventory-II (Exploration Subscale) (Kashdan, Rose, & Fincham, 2004)	The orientation toward seeking novel and challenging objects, events and ideas with the aim of integrating these experiences and information. (Kashdan et al., 2004)
Confidence	Trust in own competence	Single-item Self-esteem scale (Robins, Hendin, & Trzesniewski, 2001)	A favorable or unfavorable attitude toward the self (Rosenberg, 1965, p. 15)
Serenity	Awareness of own strength and weaknesses	General self-efficacy scale (Schwarzer, 2014)	Beliefs in one’s capabilities to mobilise the motivation, cognitive resources, and courses of action needed to meet given situational demands (Wood & Bandura, 1989)

Decisiveness	Ability to make decisions	Decisiveness (Subscale of the need for closure scale) (Webster & Kruglanski, 1994)	Ability to reach decisions as quickly as possible (Kosic, 2004)
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In consideration of the length of the survey, some items were cut from the original psychometric scales. To determine which items to retain, factor loadings of previous studies with comparable samples were examined. Those questions with factor loadings above the mean of all factor loadings were retained. For an overview of the retained items see Table 2. All items were measured on a five point Likert scale.

Table 2. Items retained for the survey

Name EIS	Factor loadings from:	Mean factor loadings	Items retained
Tolerance of Ambiguity	Webster and Kruglanski (1994)	0.46	30, 36, 8, 31, and 14
Curiosity	Kashdan et al. (2004)	0.63	3 and 7
Confidence	Robins et al. (2001)	Not applicable	1
Serenity	Schwarzer (1999)	0.7	5, 4, 7, 9, and 10
Decisiveness	Webster and Kruglanski (1994)	0.62	22, 17, and 16

### 3. Results

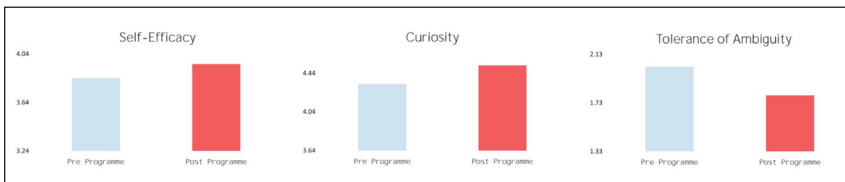
Of the five different personality traits we measured, three had significant results: curiosity, self-efficacy, and tolerance of ambiguity (see Figure 1). Self-esteem did show an increase of the median (from 3.5 to 4 out of a five point scale), but no significant change. All items have an N of 52.

For self-efficacy, the paired t-test is significant at an alpha of 0.1 ( $p=0.061$ ). The mean growth is 0.12 (5 point scale), or 3.11%. The growth found by EIS for Erasmus students was 0.17 out of a ten point scale.

A Wilcoxon signed rank test showed that our programme increased curiosity significantly ( $Z=-2.492, p=0.013$ ). The mean score showed an increase of 0.19, or 4.4%. The effect is relatively large compared to the EIS with an increase of 0.12.

Tolerance of ambiguity is the only scale where we saw a significant decrease. For our sample, a paired  $t$ -test ( $p=0.034$ ) showed a decrease of -0.23, or 11.6%.

Figure 1. Curiosity, self-efficacy, and tolerance of ambiguity



## 4. Discussion

The results show that over ten weeks our sample became more self-efficacious and curious. Although our results are significant, some points need to be addressed. The decrease in tolerance of ambiguity was surprising given the rise in curiosity and self-efficacy. The relationship between self-efficacy and tolerance of ambiguity is normally positive (Endres, Chowdhury, & Milner, 2009), as is the relationship between curiosity and tolerance of ambiguity (Litman, 2010). Questions to test tolerance of ambiguity included:

“I feel uncomfortable when I don’t understand the reason why an event occurred in my life”.

“When I’m confused about an important issue, I feel very upset”.

One explanation for this exceptional result could be that the responses were influenced by the Paris attacks of November 2015. Reflecting on the attacks during the discussions, it was clear that students were upset by what happened

and had trouble comprehending these events, so the influence of the attacks cannot fully be discounted. More research is needed to see if we can isolate the effect of the programme.

The relatively small scale and lack of control group in our study prohibits any strong interpretations, and the differences between our results and those of the EIS might be a consequence of different measurement techniques. However, our results indicate that overall VEs have the potential to impact students' development of transversal skills in a similar way as physical exchanges. This study has shown that the impact of VEs can be assessed independently of students' or educators' beliefs. The relatively large effects found, in comparison to the EIS, might be due to limitations in the current study, or could be a consequence of the high starting point of Erasmus students. If the latter is the case this is positive. A goal of VEs is to make exchange experiences accessible to those who lack resources to go on a PE. Therefore, if the students caught up to the level of Erasmus students this is promising for VEs.

## 5. Conclusion

We have seen that the programme under consideration had significant effect on transversal skills, and that the effects are comparable to those of the EIS. We set out to see if, and how, one could compare VEs and PEs. Although this study is small in scale, it has shown that comparing VEs to PEs is a valuable endeavour. Using the same survey, the next step is to expand the scale of this research to compare the development of transversal skills across a number of European VEs and PEs.

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