

FACILITATING DEVELOPMENT OF RESEARCH ETHICS AND INTEGRITY LEADERSHIP COMPETENCIES

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Abstract

To build a culture of integrity in a higher education institution, innovative approaches are needed to enhance education of research ethics and integrity (REI). In addition to educating students, understanding is needed on how to facilitate, for those who lead others. The focus of the current study was on early-career researchers (ECRs) as future REI leaders, them being both learners and gradually becoming teachers and role-models of others. ECRs are often regarded as a vulnerable group in a junction of being learners, teachers and researchers, and are seldom recognised as future REI leaders. Consequently, not much is known on how to support this group as a piece in the ethics infrastructure and what the institutional infrastructure would need to facilitate this group.

REI leadership means leadership on departmental and organisational level in the HE context and is a combination of principles from ethical, authentic and transcendental leadership styles. A REI leader would coincide with phases 3-5 in the Vitae Researcher Development Framework (2011), where the person would not only act as an exemplar and someone who sets high expectations, but who would also advise others and shape institutional policies and practices. Educating REI leaders is becoming more important as HE institutions need people who would build the culture of integrity by creating an environment where everyone can and will make ethical decisions. Even though there are training materials that give guidance on research ethics and integrity at an institution (e.g. codes of conduct, guidelines, handbooks,

online banks of resources) there is limited information about how the learning process evolves and what kind of scaffolding supports this target group.

The study sheds light on how learning and REI leadership competencies evolve during scaffolded collaborative research ethics training for this target group. Case-based learning has been used in various disciplines where students engage in discussing life-like situations (Biggs & Tang, 2007). In particular, the use of moral dilemmas has been found to provide good results in ethics education (Fisher & Kuther, 1997; Zuccherro, 2008; Jordan et al, 2011; Rissanen & Löfström, 2014). Dealing with cases improves understanding of the concepts, shows how theory is connected with practice, facilitates understanding of the context by enhancing mental representations (Ericsson & Pool, 2016), and enables collaboration. Collaboration improves thinking critically and making decisions (Cavanagh, 2011; Larraz, Vazquez & Liesa, 2017). Working in groups improves understanding, and helps relate new ideas to prior knowledge and experiences (Biggs & Tang, 2007). Still, group activities require scaffolding: scaffolding as a teaching strategy originates from Vygotsky's sociocultural theory and is part of his concept of the ZPD (Vygotsky 1978). Originally, scaffolding was considered an interaction where the 'expert' - a parent, teacher or tutor (Wood et al. 1976) - or a peer (Vygotsky 1978) provided the help needed by the learner, for example, by reducing the complexity of the task, maintaining goal orientation, motivating or providing answers

(Wood et al. 1976), and then gradually fade support as expertise increases.

The study combines new instruments as part of design-based research (DBR). DBR is a systematic research approach focused on understanding and improving educational practices in real-life context through design, development, iterations and implementation, and leading to contextually-sensitive design principles and theory development (Barab, 2014). Data was collected from 3 groups of experienced researchers (two experienced PhD students/ECRs and one participant with leadership, e.g. supervisory or educational leadership experience) attending 3 training sessions in the form of written group reports and group discussion recordings. Qualitative deductive analysis was utilised for monitoring the learning process (based on *Ethical Case Assessment Grid* – an evaluation tool based on the SOLO taxonomy), scaffolding patterns (based on the scaffolding framework of theories by Chi et al, 2001; Reiser, 2004 and Quintana et al. 2004), and display of REI leadership principles (based on REI leadership framework based on ethical (Trevino et al, 2003), authentic (Avolio and Gardner, 2005) and transcendental (Cardona, 2000) leadership styles). Also, quantitative analysis (learning analytics) was applied to group discussion data, displaying the nature of collaboration. The group discussions were recorded with *CoTrack* device, a digital solution devoted to assess participation in

collaborative learning situations (Chejara et al, 2021).

Results imply that collaborative case-based role play format is effective in training future REI leaders. All groups displayed high levels of understanding. Combining ECRs and researchers with leadership experience supported knowledge building in the groups by bringing in various perspectives. Even though groups required different amounts of scaffolding, the nature was similar: maintaining goal orientation, highlighting critical features and redirecting learners. Learning analytics of collaboration indicated that the person with leadership experience was not necessarily the most active participant nor took the role of a 'group leader'. Still, it was mostly that person who displayed leadership competencies thus supporting other group members to develop leadership aspects. Thus, it could be concluded that to support development of future generation of researchers it might be beneficial to combine ECRs and more experienced academics (including leaders) to work in the same group - this provides an opportunity for everyone to see different perspectives, build trust and culture of integrity. Still, care should be taken not to force people into groups that may cause discomfort for them.

The online Leadership Level training resource can be found here: <https://www.researchethicstraining.net/leadershiplevel>

References

- Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: Getting to the root of positive forms of leadership. *The leadership quarterly*, 16(3), 315-338.
- Barab, S. (2014). Design-based research: A methodological toolkit for engineering change. In *The Cambridge Handbook of the Learning Sciences*, Second Edition (pp. 151-170). Cambridge University Press.
- Biggs, J., & Tang, C. (2007). *Teaching for Quality Learning at University* (3rd edn) Buckingham: SRHE and Open University Press.
- Cardona, P. (2000). Transcendental Leadership. *Leadership & Organization Development Journal*, 21 (4): 201-206.
- Cavanagh, M. (2011). Students' experiences of active engagement through cooperative learning activities in lectures. *Active Learning in Higher Education*, 12(1), 23-33.
- Chejara, P., Prieto, L. P., Ruiz-Calleja, A., Rodríguez-Triana, M. J., Shankar, S. K. & Kasepalu, R. (2021). EFAR-MMLA: An Evaluation Framework to Assess and Report Generalizability of Machine Learning Models in MMLA. *Sensors*, 21(8), 2863.

- Chi, M. T., Siler, S. A., Jeong, H., Yamauchi, T., & Hausmann, R. G. (2001). Learning from human tutoring. *Cognitive Science*, 25(4), 471-533.
- Ericsson, A., & Pool, R. (2016). *Peak: Secrets from the new science of expertise*. Houghton Mifflin Harcourt.
- Fisher, C. B., & Kuther, T. L. (1997). Integrating research ethics into the introductory psychology course curriculum. *Teaching of Psychology*, 24(3), 172-175.
- Jordan, J., Mullen, E., & Murnighan, J. K. (2011). Striving for the moral self: The effects of recalling past moral actions on future moral behavior. *Personality and Social Psychology Bulletin*, 37(5), 701-713.
- Larraz, N., Vázquez, S. & Liesa, M. (2017). Transversal skills development through cooperative learning. Training teachers for the future. *On the Horizon*, 25(2): 85-95, doi: 10.1108/OTH-02-2016-0004.
- Quintana, C., Reiser, B.J., Davis, E.A., Krajcik, J., Fretz, E., Duncan, R.G., Kyza, E., Edelson, D. and Soloway, E. (2004). Scaffolding design framework for Software to Support Science Inquiry. *The Journal of the Learning Sciences*, 13(3), 337-386.
- Reiser, B. J. (2004). Scaffolding Complex Learning: The Mechanisms of Structuring and Problematising Student Work. *The Journal of the Learning Sciences* (Vol. 13).
- Rissanen, M., & Löfström, E. (2014). Students' research ethics competences and the university as a learning environment. *International Journal for Educational Integrity*, 10(2), 17-30.
- Treviño, L. K., Brown, M., & Hartman, L. P. (2003). A qualitative investigation of perceived executive ethical leadership: Perceptions from inside and outside the executive suite. *Human relations*, 56(1), 5-37.
- Vitae Researcher Development Framework (2011) Careers Research & Advisory Centre (CRAC) Limited. Retrieved from: www.vitae.ac.uk/rdf (09.11.2021) ISBN: 978-1-906774-18-9 Version 2 April 2011.
- Vygotsky, L. (1978). Interaction between learning and development. *Readings on the Development of Children*, 23(2), 34-41.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of child psychology and psychiatry*, 17(2), 89-100.
- Zuccherro, R.A. (2008). Can psychology ethics effectively be integrated into introductory psychology? *Journal of Academic Ethics*, 6(3), 245-257.