Fostering *Growth Mindset* at University: Working on Feedback, Guiding Reflexivity?

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Abstract

Growth mindset denotes a personal point of view that is typical of subjects that consider the intelligence such something dynamic and to improve over the time (Dweck, 2006). Being successful and reaching important goals in one's life thus implies an effort, a commitment to learn something new and, consequently, grow. Although failure can be considered painful, it is not intended as a defeat, but something to cope with and educationally learn. This paper, starting from an analysis of the literature, offers a reflection that highlights the value of a didactic communication that uses feedback as an effective strategy. Feedback, when used at enhancing the effort, rather than the qualities possessed, would seem to positively guide the development of a growth and reflective mindset (Dweck, Walton, & Cohen, 2014). It opens the way for interesting didactic interventions that can keep together guidance, the theory of feedback and the promotion of a growth-oriented mindset in formal training contexts, including university.
Keywords: Feedback, Growth Mindset, Teaching, Learning, Guidance

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Self-Guides and Reflect: A Fundamental Premise

Scientific debate on reflective practices and transformative learning (Archer, 2012; Mezirow, 1990; Schön, 1992; Taylor & Cranton, 2012) gives particular attention to epistemological aspects that deal with contents and aims of reflexivity and how it can be intentionally fostered within different educational and teaching settings. Reflexivity is something very different from mere reflection, even if the two concepts have been a long articulated as a *continuum* (Shaw, 2010). Reflexivity is the process of conscious and active acknowledgement of one's own belief and judgement systems *before*, *during*, and *after* the actions. Reflection, instead, is most of the time retrospectively and focuses on what were ignored at the beginning (Schön, 1992). So, reflexivity has an interesting educational potential to guide process of decision-making and change.

From an epistemological point of view, reflexivity was mostly deepened from a qualitative research perspective, because of its critical nature (Lazard & McAvoy, 2020), but the most current frontiers claim that it is possible to investigate it through quantitative perspective too (Jamieson, Govaart, Pownall, 2023). It's interesting to deepen the phenomenon from the two perspectives, qualitative and quantitative, and it's very remarkable for pedagogical and didactics research. How can reflexivity be fostered in learning-teaching contexts so that subjects can become, for example, the actors of their life-project? What are the contemporary challenges and how to organize *sets* and *settings* of learning through *evidence-based* practices that, on the one hand, enable us to arrive at certain knowledge and, on the other, push us to organize teaching paths that, with the appropriate accommodations, can be transferred to similar contexts to produce best practices?

A fundamental starting point is linking reflexivity to guidance because reflective practices represent a privileged educational tool to help subjects to guide themselves and make choices for the future. The intrinsic pedagogical perspective refers to how subjects give sense and meaning to the experiences, to identify a clear link to training in terms of self-education and self-guidance.

As is well known, self-guides are constructs in social psychology that refer to representations of the self. So, self-guides – actual, ideal, and ought – are preferred self-states that have motivational implications and are involved in self-regulation (Higgins, 1987). Comparisons can arise among any of these self-guides. Individuals can relate their own ideal selves with others' ideal selves for them. Or they can compare their own actual self with their own ought self-guide. It is through these comparisons that self-guides

are associated with self-regulation. Individuals may experience a discrepancy between their actual self and either their ought or ideal self. Such discrepancies lead to the experience of negative affect (Higgins, Roney, Crowe, & Hymes, 1994).

Thus, it is important to learn to reflect on the challenges and opportunities arising from the contexts, in formal settings too. It is a matter of developing forms of guidance that educate subjects to embrace the challenges, starting with prevailing traits that can be educated because educable. From this perspective, reflexivity becomes a construct useful to foster guidance, as an educational theory and practice in close relationship to the improvement both of formal training contexts (Loiodice, 2009, 2017) and the ways through which professions and work are articulated (Loiodice, Dato, 2009).

Guidance is not only an instrumental reflection to the choice of secondary school, university, or placement. Guidance is part of a broader framework of adult life-planning (Guichard, 2015), including training and work opportunities in which the subject situates personal aspirations, relationships in and out of formal training (Savickas *et al*., 2009), information about school and academic courses, clarify the world of professions (Patton & MacMahon, 2006), family conditions and aspirations (Cunti, 2008). From this perspective, guidance represents a useful key to nurture the prefigurative dimension of the human, that is, that utopian capacity to imagine oneself different than the present. This has encountered a decisive obstacle in the renunciation of the subject's agentivity to design future (Seligman & Csikszentmihalyi, 2000).

But how is it possible to produce a theory and practice of guidance that can intercept the needs of those faced with making choices, developing a reflexivity that can hopefully be transformative of their frames of references?

The answer is not easy, and it would be impossible for us to summarize it in few pages; nevertheless, it seems interesting to find psychological constructs functional to education. Among these, it seems particularly interesting the perspective of Carol Dweck (1999), about self-theories and their role in motivation, personality, and development. All this seems to be very promising for a pedagogical reflection that enhances the categories of change and reflexivity, as particularly fruitful grounds for soliciting the change of the frames of references, hopefully transformative (Mezirow, 1990), even at school or university.

In the case of mindset (Dweck, 2006), thinking oneself in one way, rather than the other, has an intrinsic educational value, as evidenced by some other studies (Dweck, Chiu & Hong, 1995), according to which beliefs about oneself and one's intelligence can induce one to have different behaviors. It fundamentally depends on whether someone is conceived to have a static or

dynamic intelligence, *fixed* or *growth* in Dweck's perspective. This is an influence that can have considerable repercussions on one's perceived ability to achieve set goals in the different domains of life – personal and social (Dweck, Chiu & Hong, 1995), academic (Dweck, Walton, & Cohen, 2014), and professional (Dweck & Yeager, 2019) – and hopefully to act in a transformative way (Bellantonio, Scardicchio, 2023; Mezirow, 1990; Taylor & Cranton, 2012).

Fixed or Growth? Which Intelligence I Suppose to Have?

Think of having an intelligence that can change over time, not to be considered as a relatively stable personality trait, seems to be a predictor of personal success, that's the reason why mindset is a construct to work with in educational and training contexts, even university (Bellantonio, Scardicchio, 2023).

Dweck (2006) has defined *growth mindset* as the set of beliefs useful in fostering coping strategies and resilient processes in managing and overcoming difficulties, attributing significance to critical experiences, and valuing the effort in achieving an outcome. The pedagogical interest in the mindset is that it can be learned through education, so that it profoundly influences the way people manage their lives, the possibility of becoming what one wishes to be, and achieving one's ambitions, including academic success. Dweck (2006) identifies two fundamental self-beliefs to which correspond two fundamental types of mindsets: the belief that personal intelligence is a fixed trait (*fixed mindset*) and, therefore, cannot be improved upon, and the belief that personal intelligence can, instead, always grow and improve (*growth mindset*) through effort and experience.

Research on mindsets (Dweck, Chiu & Hong, 1995; Dweck, 2006; Dweck & Yeager, 2019) within the different stages of the life cycle have focused on the possibility to change and transformation of each human being's talents, aptitudes, and interests, because of the idea that the person's true potential is unknowable. In fact, is not possible to predict with certainty what a person will achieve through years of passion, effort, and training (Bertin, 1976; Bertolini, 1988). Thus, the two beliefs correspond to two fundamental types of mindsets, which can profoundly influence how we stand and face the future, and cope with perceived stress events.

Fixed mindset assumes that intelligence and creative abilities are static components that we are unable to change significantly with learning (Dweck, 2006). People characterized by this mindset think success is the proof that being intelligent and talented are natural gifts. They systematically seeking

confirmation of their qualities and associate the idea of failure with people's identity and not with action or effort. Every situation always requires confirmation, validation, demonstration of one's intelligence.

Avoiding challenges and obstacles at all costs becomes the way through which they can maintain the feeling of being intelligent and competent. These people also become defensive and ignore negative but useful and necessary feedback to be able to improve. Working hard to achieve a goal is negative: indicative of a lack of intelligence and talent. The success of others constitutes a real threat, and instead of trying to learn from their failures, they only try to repair their own self-esteem by surrounding themselves with people with even lower self-esteem or by shifting their blame onto others (Ibidem). By settling early on in what they were able to initially demonstrate, these people tend not to set goals that require further commitment: they risk standing still and not giving themselves a chance to realize their full potential.

Growth mindset is typical of people with a dynamic mindset, for whom being successful and achieving goals means striving to learn something new and to grow (*Ibidem*). It may also be a painful experience, but it is not considered a defeat; rather, it is an opportunity for growth, a problem to be addressed and learned from, thus not something that permanently defines one's identity, with no possibility of improvement. These people welcome criticality and see engagement as what enables them to develop their own talents. Moreover, others' successes are not experienced as a threat to their own person but as a source of inspiration. They put themselves in a position to be able to achieve increasingly levels of well-being and personal fulfillment.

On the educational side, it is interesting to note that the mindset arises in childhood (Smiley & Dweck, 1994), as soon as children learn to evaluate themselves and thus to fear or not challenges (Higgins, Roney, Crowe, & Hymes, 1994). Thus, some people prefer to stay safe fearing not to be smart, foregoing what could be important educational opportunities for the future. This can also have a significant impact in adolescence, when being praised for ability and not for effort, does not push adolescents to try their hand at something new, being afraid of making a bad impression and thus losing salient aspects of their personality (Dweck, Walton, & Cohen, 2014). Emerges a decisive role of feedback and how communication is managed in teaching, which can guide the willingness to effort and continue to do it, as well as give up and stay in one's comfort zone.

A crucial aspect to work on the pedagogical side is that mindsets represent a relevant and predictive part of our personality, but we have the power to change it (Bellantonio, Scardicchio, 2023). It's important to learn to

recognize one's mindset and, eventually, work on it, which can be a precise task of a quality teaching that is concerned with learning processes rather than results.

The Possible Role of Feedback in Fostering *Growth Mindset*

The quality of learning is supported by the possibility of interaction. If it is true that learning is an almost stable modification of behavior, then it is necessary to leverage those transformative components that positively specify it (Mezirow, 1990) and that can promote well-being at school or university all around. It is essential to recall aspects that foster processes of continuous balance, with oneself and with the environment. For this reason, formal contexts – which influence ways of doing, being and feeling – represent fundamental settings of guidance. From this perspective, is important to rethink educational interaction (Rivoltella, 2012), because learning to use our ways of interacting is the most fundamental way of knowledge and learning (Rossi, 2011). Thus, designing teaching programs centered on the critical recognition of the signals, dynamics, and processes that mark and identify the exchange itself is a precise moment of evaluation of self and knowledge.

Nowadays, the construction of sense and meanings in the classroom transforms the role of teachers and students. The teacher changes, moving toward an interactionist approach of learning (Laurillard, 2014). In the constructivist approach, knowledge is prior to the classroom activity, and it is up to the student, through active processes, to reconstruct it, while it is up to the teacher to set up the environment and supervise the path. The teaching activity is today the construction of a network of meanings that emerge enactively during the action, the teacher and student are called to an active role and to produce fragments that will become part of the communities of practice (Lave, Wenger, 1991).

It assumes a leading position the *theory of feedback* (Hattie & Yates, 2013), as a priority tool in delimiting those indications necessary for the student to be able to intervene in learning contextually, critically, and reflective. Feedback supports self-regulation (Higgins, 1987), particularly with respect to three dimensions: corrective, procedural, and conceptual. Hattie & Clarke (2018) argue that feedback between teachers and students is one of the factors that most influence learning, although much depends on the ways in which it is done. The effectiveness of feedback consists in bringing the learner closer to a critical and reflective gap, between status and desired outcome (Hattie & Yates, 2013). The educational practices should

therefore acquire in the dimension of feedback one of the central aspects inherent in learning. From this perspective, learning through the contextual evaluation of the answers and the results produced corresponds to a very significant side of the learning experience. Feedback as a process, relationship, expression of subjectivity, can become an essential education reflective practice. Participatory teaching – centered on comparison, immediate and critical restitution of the outcomes of the process – constitute teaching paths that use feedback as a medium to the experience and, therefore, to learning, regardless of the content of teaching (Iavarone, Lo Presti, Stangherlin, 2017).

From this point of view, feedback impacts on three dimensions: disciplinary, intrapersonal, and interpersonal (Fishman & Dede, 2016). Disciplinary because it explores an expansion of knowledge; intrapersonal, because it brings a personal fragment into the knowledge itself and thus investigates one's own processes of way to learn; interpersonal because it requires a response, that is, verification of the possibility of modifying the group's knowledge, that social network of knowledge that characterizes the group's identity (Rossi *et al*., 2018).

Regardless of the context, feedback wants to be formative, developmental, and growth-oriented but, despite its potential value, giving and receiving feedback are often associated with angst, confusion, denial, dread, and fear (Moore & Kuol, 2005). All this leads us to reflect and start possible research paths between the *feedback theory* (Hattie & Yates, 2013) and the *growth mindset* (Dweck, 1999, 2006).

Conclusions and Future Perspectives

Feedback is not a simple appreciative judgment that the teacher can give to the student. Feedback is a device that aims to reduce the distance between where the student is and where he/she should arrive, thus promoting a growth mentality. In the literature there are different research that have shown what could be the conditions for which feedback is effective (Bonaiuti, Dipace, 2021), although its direct impact on the promotion of the *growth mindset* is a territory still to be explored. The intentions are to continue this heuristic work with a systematic review through a PRISMA Model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), to improve the reporting phase (Moher *et al*., 2010), so that we have a clearer state of the art to start educational research paths that can hold together guidance strategies, feedback theory and the promotion of growth-oriented mindset in teaching-learning contexts.

References

Archer, M. (2012). *The Reflexive Imperative in Late Modernity*. Cambridge: Cambridge University Press.

Bellantonio, S., Scardicchio, C.A. (2023). *Orientarsi per crescere. Il Growth Mindset nella formazione universitaria*. Milano: FrancoAngeli.

Bertin, G.M. (1976). *Educazione al cambiamento*. Firenze: La Nuova Italia.

Bertolini, P. (1988). *L'esistere pedagogico*. Firenze: La Nuova Italia.

Bonaiuti, G., Dipace, A. (2021). *Insegnare ed apprendere in aula e in rete. Per una didattica blended efficace*. Roma: Carocci.

Cunti, A. (2008). *Aiutami a scegliere. Percorsi di orientamento per progettare e progettarsi.* Milano: FrancoAngeli.

Dweck, C., & Yeager, D. (2019). Mindsets: A View from Two Eras. *Perspectives on Psychological Science*, 14(3), pp. 481-496. Doi: 10.1177/1745691618804166.

Dweck, C.S. (1999). *Self-Theories: Their Role in Motivation, Personality, and Development*. Philadelphia: Taylor & Francis.

Dweck, C.S. (2006). *Mindset. The New Psychology of Success.* New York: Random House.

Dweck, C.S., Chiu, C., & Hong, Y. (1995). Implicit Theories and Their Role in Judgments and Reactions: A World from two Perspectives. *Psychological Inquiry*, 33(3), pp. 267-28. Doi: 10.1006/jesp.1996.1324.

Dweck, C.S., Walton, G.M., & Cohen, G.L. (2014). *Academic Tenacity: Mindsets and Skills that Promote Long-Term Learning*. New York: Bill & Melinda gates Foundation. https://ed.stanford.edu/sites/default/files/manual/dweck-walton-cohen-2014.pdf.

Fishman, B., & Dede, C. (2016). Teaching and Technology: New Tools for New Times. In Fishman, B., Dede, C., & Means, B. (Eds.). *Handbook of Research on Teaching*. New York: Routledge

Guichard, J. (2015). From Vocational Guidance and Career Counselling to Life Design Dialogues. In L. Nota, & J. Rossier (Eds.), *Handbook of Life Design: From Practice to Theory, from Theory to Practice* (pp. 1-25). Florence: Hogrefe Publishing.

Hattie J., Clarke S. (2018). *Visible Learning: Feedback*. New York: Routledge.

Hattie, J., & Yates, G.C.R. (2013). *Visible Learning and the Science of How We Learn*. London-New York: Routledge.

Higgins, E.T, Roney, C.J.R., Crowe, E., Hymes, C. (1994). Ideal Versus Ought Predilections for Approach and Avoidance Distinct Self-Regulatory Systems. *Journal of Personality and Social Psychology*, 66(2), pp. 276-286. Doi: 10.1037/0022-3514.66.2.276.

Higgins, E.T. (1987). Self-Discrepancy: A Theory Relating Self and Affect. *Psychological Review*, 94(3), pp. 319-340. Doi: 10.1037/0033-295X.94.3.319.

Iavarone, M.L., Lo Presti, F., Stangherlin, O. (2017). Didattiche partecipative e ruolo del feedback attraverso tecnologie gamebased. *Form@re*, 17(1), pp. 176-189. Doi: 10.13128/formare-20239.

Jamieson, M.K., Govaart, G.H., Pownall M. (2023). Reflexivity in Quantitative Research: A Rationale and Beginner's Guide. *Social and Personality Psychology Compass*, pp. 1-15. Doi: 10.1111/spc3.12735.

Laurillard, D. (2014). *L'insegnamento come scienza della progettazione*. Milano: FrancoAngeli.

Lave, J. Wenger, E. (1991). Situated Learning. *Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

Lazard, L., & McAvoy, J. (2020). Doing Reflexivity in Psychological Research: What's the Point? What's the practice?. *Qualitative Research in Psychology*, 17(2), pp. 159-177. Doi: 10.1080/14780887.2017.14001.

Loiodice, I. (2009). *Orientarsi per tutta la vita. Teorie e pratiche di lifelong guidance*. Bari: Progedit.

Loiodice, I. (2017). *Sapere pedagogico, formare al futuro tra crisi e progetto*. Bari: Progedit.

Loiodice, I., Dato, D. (2015). *Orientare per formare. Teorie e buone prassi all'università*. Bari: Progedit.

Mezirow, J. (1990). *Transformative Dimensions of Adult Learning*. San Francisco: Jossey-Bass.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D.G., & The PRISMA Group (2010). Pre-ferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *International Journal of Surgery*, 8(5), pp. 336-341, Doi: 10.1016/j.ijsu.2010.02.007.

Moore, S. & Kuol, N. (2005). Students Evaluating Teachers: Exploring the Importance of Faculty Reaction to Feedback on Teaching. *Teaching in Higher Education*, 10(1), pp. 57-73. Doi: 10.1080/1356251052000305534.

Patton, W., & McMahon, M. (2006). *Career Development and System Theory: Connecting Theory and Practice*. Rotterdam: Sense Publishers.

Rivoltella, P.C. (2012). *Neurodidattica. Insegnare al cervello che apprende*. Milano: Raffaello Cortina.

Rossi, P.G. (2011). *La didattica enattiva. Complessità, teorie dell'azione, professionalità docente*. Milano: FrancoAngeli.

Rossi, P.G., Pentucci, M., Fedeli, L., Giannandrea, L., Pennazio, V. (2018) Dal feedback informativo, al feedback generativo. *Education, Sciences & Society*, 2 pp. 83-107.

Savickas, M.L., Nota, L., Rossier, J., Dauwalder, J.P., Duarte, M.E., Guichard, J., Soresi, S., Van Esbroeck, R.V., van Vianen, A.E.M. (2009). Life Designing: A Paradigm for Career Construction in the 21th Century. *Journal of Vocational Behavior*, 75, pp. 239-250. Doi: 10.1016/j.jvb.2009.04.004.

Schön, D.A. (1992). *The Reflective Practitioner. How Professionals Think in Action*. London: Routledge.

Seligman, M., & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55(1), pp. 5-14. Doi: 10.1037/0003-066X.55.1.5.

Shaw, R. (2010). Embedding Reflexivity Within Experiential Qualitative Psychology. *Qualitative Research in Psychology*, 7(3), pp. 233-243. Doi: 10.1080/14780880802699092.

Smiley, P.A., & Dweck, C.S. (1994). Individual Differences in Achievement Goals among Young Children. *Child Development*, 65(6), pp. 1723-1743. Doi: 10.2307/1131290.

Taylor, E.W., & Cranton P. (2012). *The Handbook of Transformative Learning: Theory, Research and Practice*. San Francisco: Jossey-Bass.