CLASSROOM ASSIGNMENTS FOR FOSTERING RESILIENCE–AN INSTRUCTIONAL DESIGN MODEL ON AFFECTIVE PERSONALITY DEVELOPMENT

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ABSTRACT

There is a long tradition in the research about how to design classroom assignments to foster cognitive learning. However, especially since the COVID19 crisis, an affective turnaround that focuses on strengthening personality and personal development has increasingly broken new ground in teaching and learning. The resulting question is whether affective learning can also be supported through classroom assignments. In this paper, we present an instructional design framework for stimulating research and practice on assignment-based affective learning. We selected the resilience of students as a focus on affective personality development and generated a systematic set of classroom assignments for supporting resilience. Based on a comprehensive review of the literature, we started by building a theoretical model of goal areas for supporting resilience concerning control, problem solving, and personal growth. We then proposed different types of classroom assignments that might facilitate the acquiring of resilience within classroom settings. Finally, open questions are discussed that need to be addressed in future research and practical implementations.

Keywords: task-based learning, instructional systems design, personality development, instructional design model, affective learning

INTRODUCTION

In the past, and perhaps even more so during the COVID-19 crisis, learners and teachers had to cope with a tremendous workload in schools and classrooms (e.g., Lavy, 2020). This workload is based, to a large degree, on *assignments* that are, in general, "pieces of work given to someone, typically as part of their studies or job" (Cambridge Dictionary, n.d.). Classroom assignments concern pieces of work for supporting learning and development that are designed, distributed, and evaluated in off- and online-settings before, during, and after lessons in- and outside classrooms (Anmarkrud et al., 2013; Boston & Smith, 2009). Assignments concern goal-related stimuli that require cognitive-affective processing and reactions as well as problems that necessitate a solution from an individual learner or from a group of learners. In classroom contexts, they are used for demonstrating, practicing, or testing together with formative or summative feedback on the quality or success of performance. In the following, we use the term "assignment" instead of "task" (or similarly "problem," "work," "duty," "mission," "job," or "homework") because assignment represents a concept that is strongly embedded in traditional and modern classroom settings on all educational levels (e.g., Matsumura, 2005).

Assignments constitute an important backbone of classroom teaching and learning, and the scientific community has recognized how important assignments are for teaching quality and learner progress (e.g., Willis & Willis, 2007). The most important topic that researchers and practitioners in

the field of instructional systems design are asking themselves is how to design such assignments effectively and efficiently for optimizing learning and development (e.g., Epstein & Van Voorhis, 2001). The design of assignments represents an essential research area in the fields of assessment and evaluation (e.g., Matsumura et al., 2002), teacher-learner interaction but also teacher-parents interaction (e.g., Munk et al., 2001), or the effectiveness of learning materials like worksheets or textbooks as well as multimedia or elearning environments (e.g., Yerushalmy, 2015). In the past few decades, the field of instructional systems design research and practice has responded to this and a lot has been learned about the cognitive design of assignments (e.g., Astleitner et al., 2003; Seel et al., 2017).

First, assignments are embedded in several theoretical frameworks in instructional systems design research and practice. In the last few decades, for example, Atkinson et al. (2000) focused in their model of instructional design on "worked examples" as some sort of assignments consisting of a problem statement and a problem-solving procedure. According to their model, instructional designers and researchers must decide, for example, the number of examples per problem, the completeness or incompleteness of an example, or the prompting to trigger self-explanations. In another cognitive model, van Merriënboer et al. (2002) combined four learning and teaching elements: (a) learning assignments (as concrete, authentic, and whole-task experiences), (b) supportive information (for linking learners' prior knowledge with assignments), (c) just-in-time information (relevant for recurrent aspects of assignments), and (d) part-task practice (practice assignments to promote rule automation). These elements are embedded in a cycle of dynamic assignment selection based on continuous assessment of performance (van Merriënboer & Kirschner, 2012). Also, Merrill (2007) postulated in his "first principles of instruction" that learning should be based on real-world assignments. Within this approach, it is assumed that learning is supported by different types of assignments realizing activation, demonstration, application, and integration. Recently, the "principles for task-centered instruction" from Francom (2017) have included assignments as universal principle for learning together with situational variations like adjusting assignment complexity.

Second, such theoretical frameworks have been at the center of empirical research on the design of assignments. This research adds to the picture of what is important in assignment design in practical contexts from a cognitive perspective. First, it seems important in classroom settings to find just the right number of assignments that will be effective and efficient for learning (e.g., Dettmers et al., 2010). Too few can, for example, lead to underachievement or boredom, while too many to overload and exhaustion. Second, the quality of classroom assignments is essential for supporting learning (e.g., Joyce et al., 2018). It is important that assignments (together with feedback) support the integration of prior knowledge, the construction of knowledge, or the transfer of learning. Third, timing represents a further important element when using assignments for learning (e.g., Pariseau et al., 2010). Instructional decisions must consider the amount of time available to complete assignments, the distribution of assignments in a given period of time, or the proximity of assignments to exams. Fourth, the effectiveness of assignments also depends on contextual factors (e.g., Thom, 2020). It is relevant for classroom achievements whether working on assignments is done alone or together with other learners, is taking place in a supportive working environment, or can be accomplished undisturbed by parallel media use.

In this paper, we keep these findings from cognitive research in mind but try to open up a new chapter on assignment design research and practice in the field of instructional design. The current theories and research on assignments in classrooms clearly show that activities are based on cognitive aspects of learning, but they neglect an important affective perspective in a more holistic instructional design (e.g., Astleitner, 2018; Hollnagel, 2003; Levicky-Townley, et al., 2021). An affective perspective is still missing, although there is evidence that the affective development of learners represents an important element in modern classroom instruction (e.g., Dernikos et al., 2020), that assignments have changed affective efforts and emotions (e.g., Trautwein et al., 2009), and that elements of instructional texts (e.g., text passages that convey joy) can be linked to affective processes (e.g., Astleitner & Herber, 2021). In addition, there

is increasing evidence that the recent COVID-19 crisis requires everyone to focus in more detail on the affective personality development on both macro- and microlevels in the educational systems (e.g., Golberstein et al., 2020).

Assignments represent essential learning devices on the microlevel of teaching and learning. Someone might object that prominent affective instructional design approaches on motivation (e.g., the ARCS-model from Keller, 2010) or emotion (e.g., the FEASP- approach from Astleitner, 2000; the ECOLE-approach from Gläser-Zikuda et al., 2005 or on emotional design in digital media from Plass & Kaplan, 2015) exist and might be applied in instructional design processes on assignments. However, such approaches have not yet been related in detail to specific characteristics of classroom assignments and/or to a broader range of short- but also long-term affective development processes (e.g., Li & Keller, 2018). In this paper, we will therefore ask the following question: How should classroom assignments be designed in order to stimulate the affective human development of learners?

Most prominently in the field of instructional systems design, Martin and Reigeluth (1999) have outlined that a noncognitive affective development of learners and a related instructional design framework has emotional, moral, social, spiritual, aesthetic, and motivational facets. For example, motivational development alone concerns the starting, maintaining, and ending of actions based on goal setting, goal striving, goal achievement, and the evaluation of outcomes. Goal setting is based on mindsets on desirability and feasibility; goal striving on strategies and plans related to implementation intentions, volitional strength, and suitability of the situation; goal achievement by steadfast pursuit of the goal and stepping up the effort in face of difficulties; and outcome evaluation on deactivating goals if successful and lowering aspiration levels or increasing efforts if not successful (Achtziger & Gollwitzer, 2010). In order to support motivational development alone, it would be necessary to design a great number of classroom activities and related assignments. When considering all the mentioned fields of affective development, countless types of assignments and related classroom activities would be relevant for instructional designers and researchers. Both would have great difficulties in selecting effective, nonredundant, and practicable assignment options. In addition, combining multiple, quite different assignment options could also produce unintended interaction or side effects (e.g., Gaspard et al., 2016). So, it is necessary to search for alternative affective concepts that could integrate multiple dimensions of affective development of learners in a more parsimonious way and can be changed via short-term interventions like assignments.

We have identified such a concept in "resilience," which has a long tradition in fields of human affective development like clinical psychology, developmental psychology, positive psychology, occupational and organizational psychology, and social work (e.g., IJntema et al., 2019). *Resilience* is about "the ability to be happy, successful, etc. again after something difficult or bad has happened" (Cambridge Dictionary, n.d.). It represents an important educational resource and plays an essential role in all areas and levels of human development and academic learning (e.g., Ungar et al., 2013). Recently, resilience has constituted a core construct in handling educational and personal damages from the COVID-19 crisis in the educational system and in classroom situations (Dvorsky et al., 2020). In addition, resilience represents an important goal area for school-based mental health, mindfulness, social competence, and similar programs (e.g., Christner & Mennuti, 2009; Doll et al., 2014; Schonert-Reichl & Roeser, 2016).

RESILIENCE AND ASSIGNMENTS

Resilient learners succeed despite adversity and failure in classroom situations and have specific attributes like social competence (e.g., empathy and caring), problem-solving skills (e.g., generating alternate solutions and seeking help from others), critical consciousness (e.g., awareness of cruelty and coping strategies), autonomy (e.g., sense of identity and acting independently), and a sense of purpose (e.g., having goals and a belief in a bright future) (Zolkoski & Bullock, 2012).

Resilience is strongly related to assignments. In general, resilience is seen as a competence in handling developmental tasks (Masten et al., 2008) and long-term activities that promote resilience in the classroom often include assignment-based workbooks (e.g., Aguilar, 2018). There are also

medical and psychotherapeutic interventions on resilience that include assignments in relaxation or mediation trainings, problem-solving trainings, parent trainings, or family therapies, among others. Sessions in such interventions include discussions, exercises, or home assignments (e.g., Chmitorz et al., 2018). However, such interventions take place under the supervision of professional therapists, which are usually not available in other educational contexts. Therefore, assignments for fostering resilience in psychotherapeutic settings are not within the focus of this paper, but that does not rule out using affective assignments from an instructional design perspective in psychotherapeutic settings. There are also principles or guidelines for fostering resilience in the classroom about teacher-student rapport, classroom climate, instructional strategies, student skills, caring school teams, schoolwide game plans, student growth plans, and others where one can find assignments (e.g., Downey, 2008; Simon, 2013). However, many of these approaches are based on the experiences of engaged teachers or other practitioners, but not on scientifically theoretical approaches, systematic instructional design processes, and controlled empirical research. In addition, they do not have a clear strategy on assignments, especially on the question how to support resilience in complex processes or through step-by-step procedures that are essential in personality development. Despite these problems in educational practice, resilience has both a short-term and long-term perspective, which makes it a promising enterprise to use short-term assignments for changing long-term personality development. Resilience consists of specific skills that can be acquired quickly by using assignments that then contribute in a cumulative way to personality development in the long run. For example, Bai and Repetti (2015) have used a gears metaphor in which resilience-supporting processes that take place in the short term are related to internal resources in personality development that build over much longer periods of time. Also, Thakur and Cohen (2020) distinguished between short-term, response-based resilience and long-term, lack of distress-based resilience.

GOALS AND METHODS

Based on this background, it is the goal of this paper to develop a theoretical framework to guide instructional design research and practice on classroom assignments that foster the resilience of learners. We base our framework on research in the fields of instructional systems design, educational science, educational psychology, and other fields of human development research (e.g., Lerner, 2018). To achieve our goal, we first will develop a general theoretical model of goal areas on resilience in academic contexts in order to structure possible types of classroom assignments. The goal areas allow us to organize the instructional systems design process in order to identify exclusive and saturated learning needs. Second, we then propose features of classroom assignments that promote the achievement of the different goal areas related to resilience.

All this work is done by conducting an exploratory literature review with the primary aim not to find patterns of effectiveness but to support building an instructional design model (Stebbins, 2001). Such a review does not deliver strong empirical evidence, but it is related to empirical studies that stimulate theory building and practical applications. As classroom assignments for fostering resilience represent a relatively new issue in the scientific community, it is not possible to identify strong empirical evidence based on controlled studies and related replications within instructional settings. However, our review can be seen as structured exploration that is based on certain criteria. We have used the criterion of "functional creativity" (Cropley & Kaufman, 2012) to decide whether a type of assignment is integrated in our framework or not: This criterion consists of relevance and effectiveness (related to performance, appropriateness, and correctness), problematization (means suitable for prescription, prognosis, and diagnosis), propulsion (allowing redefinition or combination), elegance (including harmoniousness), and genesis (stimulating vision and transferability).

The review includes searching the relevant literature, structuring and integrating the findings, and develop a theoretical framework. This means that we have adopted individual types or concepts of assignments directly from the literature, but also that some of them have been modified for integration into our framework. The starting points for searching the literature was Google Scholar (https://scholar.google.com/) using the terms "assignments" or "tasks" and conceptual

and empirical studies on resilience in human development (Masten et al., 2002), academic resilience (Martin & Marsh, 2006), resilience in the school context (Twum-Antwi et al., 2020), and resilience measurement scales (Windle et al., 2011). For structuring and integrating, we used tactics for generating meaning developed by Miles and Huberman (1994), including noting patterns, seeing plausibility, clustering, making contrasts, partitioning variables, subsuming particulars into the general, factoring, and making conceptual coherence. In order to support theory building, we follow techniques for theory building from Jaccard and Jacoby (2010) like heuristics for generating ideas and strategies for specifying definitions. We stopped reviewing when we were not able to identify new types of classroom assignments. Overall, we did not follow a process on building scientific theory; rather, we developed a more prescriptive technological theory as instructional design framework in applied educational settings (Swanson & Chermack, 2013).

GOAL AREAS OF CLASSROOM ASSIGNMENTS ON RESILIENCE

From a theoretical perspective, we tried to identify goal areas for fostering resilience in an educational context. There are a large number of theoretical approaches on resilience in the field of education and educational psychology (e.g., Fletcher & Sarkar, 2013). We focused on and integrated several current approaches concerning theoretical and measurement models on adolescent-, school-, or classroom-related approaches as well as academic resilience (Edwards & Ashkanasy, 2018; Macpherson et al., 2016; Sembiring et al., 2021; Turner et al., 2020; Wadi et al., 2020). Resilience in the educational context concerns skills that help students recover from academic adversities or failures. Based on the existing models, we assumed that learners can develop resilience in classroom settings when they improve in three different cognitive-affective goal areas of control, problem solving, and personal growth, together with nine related specific educational goals (see Table 1). Control concerns self-regulation processes that affect the management of the learning activities. Problem solving is about academic coping activities that are, in general, focused on finding and implementing solutions to given

unsolved problems. Personal growth is about the goal-based improvement of individual resources for achieving a good life.

Table 1. A Model on Goal Areas for Fostering Resilience

Goal areas	Educational Goals
Control	(1) Emotional regulation
	(2) Commitment
	(3) Adaptability
Problem Solving	(4) Error analysis and prevention
	(5) Innovation
	(6) Network building and cooperation
Personal Growth	(7) Well-being
	(8) Ego-development
	(9) Positive future perspective

Control is about self-regulation of learning processes consisting of (1) emotional regulation, (2) commitment to persevere until success is achieved again, and (3) adaptability to changes that are necessary to improve the situation (e.g., Schutz & Davis, 2000). It is assumed that failures destabilize the management of learning activities and lead to (more or less) strong emotions that disturb learning processes. So, a first step is to cool down high emotions, which requires emotional regulation. Failures also trigger doubts in learning so that commitment (the will to keep on learning) needs to be strengthened. Finally, failures might lead to comparisons between goals and situations. Such appraising processes activate strategic planning, which leads to adaptability, which is necessary for changing the given situation. Adaptability does not mean to find alternative specific problem-solving solutions, but to get a more self-reflected, more broad, and more sensitive way of handling problems.

Resilience-related problem-solving concerns coping strategies related to (4) error analysis and related preventive activities, (5) new ways of solving problems triggered by innovation and creativity, and (6) the activation of support systems based on networking and cooperating with others (e.g., Skinner & Saxton, 2019). Learners have to cope with failure, they need to learn what errors they made and that errors represent a positive opportunity for learning as well as an important source for preventing errors in the future. Then, they have to be innovative and creative in order

to find new perspectives, goals, and methods of problem solving. And finally, when they see that their capabilities are limited, then they must learn to activate additional resources coming from other learners and related cooperative learning activities.

Finally, personal growth represents a goal area that is related to social-cognitive maturity and social-emotional well-being (Bauer & McAdams, 2004). It is assumed that personal growth can be restored if (7) well-being (as pleasant affect), (8) ego-development (as change in identity and related understanding of reality), and (9) a positive future perspective (as life-affirming assumptions about how life will go on) are stimulated. It is assumed that failures lead to a stop or slowdown of individual development. In order to restart development, learners must feel well to forget failures or make them no longer disturbing. When there is a more positive feeling, then their own identity and its development appears as an option for action. Finally, a positive future perspective represents a short- and long-term activating goal and action base for personal growth.

According to validity aspects, the three general goal areas correspond, at a surface level, with a highly integrated theoretical model of personal resilience from Baker et al. (2021) in which resilient thinking (related to problem solving in our model), emotional resilience (control), and balance and recovery (personal growth) are distinguished. The nine subgoal areas partially match (with different relations to the general goal areas) the subgoal areas from Baker et al. (2021): (a) flexible thinking (with relation to (4) and (5) in our model), (b) social connection (6), (c) emotional regulation (1), (d) positive emotions (2), (e) balancing demands (3), (f) self-care (7, 8), and (g) optimism (9). We consider this correspondence on the goal areas to be an indication of the general validity and also quality of our model, especially in relation to the evaluation criteria of integration (i.e., "a set of constructs are combined in systematic and meaningful patterns," Prochaska et al., 2008, p. 565).

INSTRUCTIONAL DESIGN FRAMEWORK FOR CLASSROOM ASSIGNMENTS

Based on this background in theory and research, and by applying the mentioned methods, we have identified 21 different types of assignments. These build the elements of an instructional

design framework and can be used for research and practical implementation for fostering resilience in on- or offline-classroom contexts. Within Table 2, the types and examples of assignments are depicted that are related to the different educational goals. These types of assignments and related examples can be used for designing instructional environments in research and practice.

Assignments on Fostering Control

Resilience means regaining control over one's learning management after failure. Such control strategies have been found to be related to resilience in classroom settings (e.g., Fried & Chapman, 2012). To achieve control, increasing emotional regulation, commitment, and adaptability are necessary according to our model.

In general, emotions and emotional regulation play an important role in research and daily classroom instruction (e.g., Pekrun, 2016). Concerning classroom assignments, one option to support emotional regulation represents expressive writing tasks in which learners must write thoughts and feelings about an emotionally moving event. Such tasks allow emotional processing and expressiveness and therefore reduce negative emotions (like fear). In addition, cognitive reappraisal tasks require the learner to deal with a task in a way that decreases emotions and to report this experience to another person. Emotions are re-evaluated, fed into more cognitive processing, and shaped or distanced through communication to others.

Increasing emotional regulation should calm down learners and rebuild academic commitment (e.g., Usán Supervía et al., 2019). We assume that finding commitment can be supported by acceptance and commitment exercises. In such assignments, learners deal with the directionality of the life of a fictional person and how to change it. With such assignments, the finding and pursuing of goals are triggered. Commitment can also be increased by assignments when reasons against commitment are reflected. This can be done with mental contrasting tasks in which learners have to write about their hurdles for performance. Mental contrasting tasks are assumed to increase commitment-related expectations of success, implementation intentions, or links between reality and a desired future.

When learners have re-established a commitment

Table 2. A Framework for Classroom Assignments on Goal Areas for Fostering Resilience

Educational Goals	Types of Assignments	Assignment Examples
Emotional regulation	Expressive writing (Kliewer et al., 2011; Nazarian & Smyth, 2013)	Imagine a stressful event that affected you deeply: Write about both thoughts and feelings about this event.
	Cognitive reappraisal tasks (Pizzie & Kraemer, 2021)	Reinterpret the results of your working on a task in a way that your emotions are decreased. Think about how to explain your experiences to a friend.
Commitment	Acceptance and commitment exercises	Read the text on the life of person X. Is this life self-directed or directed by others? Is the behavior of the person value-consistent? What emotions are associated with the behaviors? Name and scale them. What should be done differently? Make a fictional plan. Implement it in everyday situations in the life of the person X, even while feeling bad.
	Mental-contrasting tasks (Gollwitzer et al., 2011)	Imagine that you have success in the actual classroom assignments. Now think about what behavior of yours could reduce your success. Write down your thoughts!
Adaptability	Mindfulness tasks (Weger et al., 2012)	Pay attention to all your senses, as if eating an exotic fruit for the first time.
	Perspective taking tasks (Stocks et al., 2011)	Imagine how person X feels about situation Y and how it has affected his or her life.
	Lottery assignments (Barnbaum, 2001)	Present the medical and social progress of (a fictional) disease X (obtained through lottery) over the course of your life.
Error analysis and prevention	Self-monitoring tasks (Ganz, 2008)	Choose a target behavior, measure it, and decide about your goal achievement. Keep track of your progress.
	Critical thinking questions (Allen, 2013; Stobaugh, 2016)	What evidence can you find on X? How would you evaluate X? How would you improve X?
	Risk tasks (Pleskac, 2008)	Learn to earn money by fishing based on your decisions. If you caught a red fish, money is earned. If you caught a blue fish, money is lost. You can also change weather conditions. Win the fishing tournament!
Innovation	Idea-generation tasks (Pang, 2015)	Write a sequel to the story of Macbeth from William Shakespeare.
	Multiple solution tasks (Lev & Leikin, 2017)	Produce two or more different ways to solve this problem.
	Divergent thinking tasks (Silvia et al., 2008)	Write down all the unusual, uncommon, original, and creative instances of things around you. Select the most creative things.
Network building and cooperation	Learning communities' tasks (Bielaczyc & Collins, 1999)	Solve task X by considering the following principles: Learn about the community of learners and their goals. Articulate goals and monitor your thinking. Develop your own knowledge, respect other opinions, and learn from failure. Structure your way of interaction, allow depth over breadth, and develop diverse expertise. Allow multiple ways to participate, share, negotiate, and value the quality of all products.
	Collaborative problem-solving tasks (Gu et al., 2015; Harding et al., 2017)	Solve task X by considering the following rules: Share knowledge with group members, ask others to express their viewpoints, listen to other's opinions, provide feedback to others, provide reasons and evidence, work together to find solutions, negotiate in case of disagreement, and implement solutions when all agree.
Well-being	Writing about life goals (King, 2001)	Imagine that you have accomplished all your life goals. Write about what you imagined.
	Positive events diary (Carter et al., 2018)	Write down three positive events that happened during your day. Give explanations why you think these had occurred.

	Hero's journey story (Hartman & Zimberoff, 2009)	Write a story about a hero that has a call, prepares for a journey, undertakes a journey, solves a difficult problem, and returns home.
Ego-development	Personality systems reflection tasks (Daniels et al., 2018; Hook et al., 2021)	Reflect on your role about learning in subject X. What role do you play in learning? A perfectionist, a giver, a performer, a romantic, an observer, a loyal skeptic, an epicure, a protector, or a mediator? What new role (of the nine) could be important for you and why? What would you do to take on this role?
Positive future perspective	Imagining a best possible self (O'Brien et al., 2017)	Think of and draw or write down personal, relational, or professional aspects that your best personal future should include.
	Optimism boosting performance evaluation (Vehkakoski, 2020)	Is there anything negative in your task performance? If yes, invert your comments by giving examples of your successful positive performances in the past. Praise yourself on this and focus on the actual problem. What do you invest in order to solve this actual problem?

for learning and development, then they are again better able to adapt to ongoing challenges (e.g., Martin & Collie, 2016). For supporting adaptability with assignments, mindfulness tasks can be used for relearning to pay attention to specific personal and contextual facets. Such tasks increase the variability of learning behavior or strategies. In addition, perspective taking tasks can support empathizing with people and situations. Empathy is related to the sensitivity to learning challenges. Finally, lottery assignments include fictitiously assumed, coincidental, or difficult to control events, whose individual consequences are to be designed and reflected upon. Dealing with uncontrollable conditions prepares learners for difficult or complex adaptations.

Assignments on Fostering Problem Solving

Learners need resilience and special assignments for supporting their problem-solving skills and for recovering from faulty or unsuccessful attempts to solve problems. This assumption is based on a relation between problem solving, effective thinking, and resilience (e.g., Shure & Aberson, 2013). Of course, traditional approaches in instructional design have been related to activities like scaffolding, modeling, coaching, or mentoring in order to increase specific subject-related and cognitive problem-solving skills (e.g., Dennen, 2001). One could argue that problem-solving skills are highly cognitive in nature and that this does not fit the affective orientation of the instructional design framework in this paper. However, here problem solving is not linked to a cognitive performance goal but to an affective goal of acquiring resilience during problem solving. Within the context of resilience, increasing problem-solving skills means

supporting learners in error analysis and prevention through assignments like self-monitoring tasks, critical thinking questions, and risk tasks.

First, learners should become more sensitive to the good or bad quality of their problem-solving skills by self-monitoring tasks like "Keep track of your progress." Sometimes, resilience is weakened because learners lose sight of their performance and performance deficits. Self-monitoring can restore a clear view of one´s own learner personality and reduces the overlook and accumulation of short-term and long-term learning problems. Then, when deficits have been discovered by self-monitoring, they must be analyzed in more detail. Critical thinking assignments like "How would you evaluate and improve?" stimulate error analysis and the first steps in error recovery. Such assignments can be used in every subject area as they are highly general in nature. Stimulating critical thinking leads in the long run to a higher level of self-reflection and self-relativization that sharpens error handling during learning. Finally, risk tasks like "Make decisions in risky situations" allow learners to learn more about the probability of failures in problem solving, which helps when deciding how many learning resources learners assign to a problem. Assigning the appropriate amount of cognitive and other resources to a learning problem represents an important resilience related skill.

Traditionally, there is "learning from mistakes or errors" as a way to foster cognitive learning in the classroom (e.g., Steuer et al., 2022). Supporting error analysis and prevention represent an important subskill in fostering the resilience of learners. Sometimes learners need new perspectives in problem-solving goals and methods in

order to recover from failures. New perspectives come from innovation and creativity, which represent important elements in models of resilience (e.g., Metzl & Morell, 2008). Such an innovative, creative perspective can be supported in daily classrooms through idea generation, multiple solutions, and divergent thinking assignments. In a first step, learners should stay within a certain problem-solving space, but expand it in order to discover new facets of a problem, which might be supported by assignments that stimulate the learner to think about the next or future developments of a problem, like writing a sequel to a story. Then, assignments as multiple solutions tasks require from the learner to produce two or more different solutions to the same problem. Finally, assignments on divergent tasks stimulate the learner to think of solutions that might be surprising to other learners and teachers.

When assignments on error analysis and prevention, as well as innovation and creativity, have limits in their effectiveness on improving problem solving, then another strategy to support resilience is to seek help from or cooperate with others (e.g., Hesse et al., 2015). Social skills that start and maintain relationships with other learners represent protective factors in classroom resilience frameworks (e.g., Morrison & Allen, 2007). Traditionally, instructional systems research deals with the question of how performance can be improved by applying cooperative learning methods (e.g., Slavin, 2012). Assignments are essential that stimulate network building and cooperation for supporting resilience. Learning communities' tasks and collaborative problem-solving tasks are similar but different in a certain way: The major goal of learning communities' tasks is to support network building, whereas collaborative problem-solving tasks are more about the optimization of collaboration's effectiveness.

Assignments on Fostering Personal Growth

According to our approach, personal growth can be realized when there is a supportive environment for stimulating well-being, ego-development, and a positive future perspective (e.g., McCullough et al., 2000).

Assignments for supporting well-being are about imaging and writing about the accomplishment of personal goals in life. Such fictional goal attainment is related to positive emotions and need satisfaction.

In addition, within a positive events diary, multiple pleasant daily events can be documented and reflected on. Such an assignment delivers additional positive perspectives, which is important as negative information is processed more thoroughly than positive (Baumeister et al., 2001).

When learners feel well, then they have motivation and capacities to take further developmental steps (e.g., Parhiala et al., 2018). With assignments, ego-development can be stimulated by writing stories about heroes' journeys in which a difficult problem is successfully solved. The goals contained in these stories and the ways to achieve them represent models or orientation aids for one´s own ego development. Also, personality systems reflection tasks allow learners to think on given and additional or alternative personal roles in life contexts. Such roles contribute to role orientations and identity formation. When there is capacity for development, then it can be optimized by focusing on a positive future perspective (e.g., Oettingen et al., 2005). Within assignments, imagining and writing on different facets of a best personal future can stimulate such a perspective. A best personal future represents a standard for the evaluation and calibration of personal growth. In addition, an optimism boosting performance evaluation task can be helpful by integrating experiences on successful past performances in actual problem-solving investments. Optimism helps in creating a general positive affectivity that affects personal growth and related coping processes.

DISCUSSION

In this paper, a framework for research and practice in the field of instructional system design has been proposed. The framework contains different types of assignments that assist in fostering the resilience of learners in classroom contexts. These assignments deliver, at the best of our knowledge, for the first time a systematically (research- and practice-related) organized collection of instructional devices that can be used in all types of off- and online learning environments to support the affective personality development of learners. The framework integrates findings from empirical research in the fields of positive psychology together with educational-psychological research on instructional systems design (e.g., Chodkiewicz & Boyle, 2017). However, all the included types

of assignments cannot be seen as effective or efficient tools for instructional design in research and practice as long as they have not been tested in controlled empirical research. The framework does not have a profound empirical basis; rather, it represents an early theoretical approach that has an exploratory function in research and practice planning and design.

There are several open questions that can guide research and practice activities in the future:

Do these assignments fit to other classroom activities for fostering resilience? There are general instructional approaches on how to support resilience in classroom settings such as realizing failures, allowing emotional responses, and sharing resilience stories to others in role-play settings (e.g., Berg & Pietrasz, 2017). The assignments proposed in this framework might then be used to expand or optimize given approaches with a more profound research- and practice-based perspective on the quality of assignments. A theoretical evaluation process might be appropriate to compare our assignment-based framework with more general frameworks on fostering resilience in a way that the convergence of the different approaches can be reflected (e.g., Bernacki et al., 2020).

Are there any additional types of assignments that might be used to support resilience with respect to affective personality development in on- and offline classrooms? Examples of such additional types of assignments concern assignments for developing competencies (e.g., Euler & Kühner, 2017), interactive assignments (e.g., Florenthal, 2016), nondisposable assignments (Seraphin et al., 2019), or learner-generated assignments (e.g., Reyna et al., 2017). Our approach might not be exhaustive, but it represents a comprehensive and organized basis for further research and practice activities. Within a next possible step, for example, a Delphi study (as a structured method to get a qualified opinion by surveying a group of experts) could help in getting information on the exclusiveness and exhaustion of the types of assignments in our approach (e.g., Zawacki-Richter, 2009).

Are the different types of assignments really effective and efficient in promoting resilience? Do they affect the theoretically postulated dependent variables or other variables? Do they also influence the cognitive development or cognitive performance in school contexts? Magalhães et al. (2020) found that traditional and online homework assignments have produced mixed results on learners' performance. A sequential design of experiments could be used in order to test step-by-step the effectiveness of the different types of assignments. First, the most promising assignments should be tested and the found effects should be replicated. Then, additional assignments can be tested, which could expand them effectiveness (e.g., Phan & Ngu, 2017). From a practical point of view, it is also important to establish a connection between the curriculum elements of resilience and valid measurements of resilience for students in schools. Successful examples of how resilience can be combined with curricular measures can be found in Simões et al. (2021). Overviews of school-relevant measurement methods of resilience can be found in Gartland et al. (2011) and Caleon & King (2021). Many of these instruments are designed for self-assessment, which is especially important in classroom settings.

Are there any positive or negative effects and side-effects that might occur when implementing these assignments in classroom contexts? In which circumstances can the assignments be used, in which circumstances should they not be used? Do they increase cognitive load and reduce learning? Can the different types of assignments or implementations of assignments be combined or put in a certain sequence in order to increase effectiveness? Should they be combined with assignments for fostering cognitive development and learning? Harrist et al. (2007) tested the effects of expressive writing and expressive talking about life goals on mood and health. Neu (2012) focused on unintended consequences of group assignments consisting of anxiety, frustration, stress, disappointment, anger, or relief. Bystedt et al. (2014) focused on the negative effects of interventions concerning characteristics of negative effects (e.g., short-term negative effects or impact on other life domains), causal factors (e.g., inadequately applied methods or potentially harmful interventions), or methods and criteria for evaluating negative effects (e.g., on sources of invalidity).

Are such assignments suitable for all types of learners or learning contexts? May they be used in all levels of the educational systems, such

as in higher education settings? Mesghina and Richland (2020) found that highest-achieving girls have shown decreases in immediate mathematics learning and retention after an expressive writing intervention. It is also clear, for example, that resilience changes with age and that tasks must therefore be adapted to age (Sun & Stewart, 2007). Of course, in case of severe personal problems, assignments on resilience will not work alone for fostering resilience—they have to be accompanied by psychotherapy or similar support. Aptitude-Treatment-Interaction or Complex-Trait-Treatment-Interaction studies can help in exploring individual differences with respect to moderating variables in resilience when using assignments as educational interventions (e.g., Leutner & Rammsayer, 1995; Preacher & Sterba, 2019).

How can the textual and contextual presentation of the assignments be optimized? Lu and Stantan (2010) have found that the benefits of expressive writing depend on different writing instructions. Within Table 2, we have depicted only some possible examples of assignments. These assignments could be formulated and embedded in another way in classroom contexts based on different instructions for learners (e.g., see Aguilar, 2018). Research has to clarify what kind of affective processes are triggered by different instructions, like research on emotional experiences during test taking (e.g., Goetz et al., 2007).

When and how can the assignments be implemented in practical educational applications like worksheets, textbooks, or elearning-courses in daily classroom settings? In what kind of settings do they work, in what do they not? Assignments on fostering resilience might be implemented not only in traditional learning materials, but also in games, comics, blogs, or podcasts (e.g., Boniel-Nissim & Barak, 2013). In addition, in the daily classroom they are accompanied by different forms of feedback. We know a lot about feedback to foster cognitive learning, we know little on the role of feedback in affective learning (e.g., Krenn et al., 2013; Voerman et al., 2014). Finally, another important question is whether such assignments can be successfully completed not only in classroom settings but also at home as homework. This raises the question of whether parents can be supportive and whether there are suitable quality factors for homework. In practical contexts, it might be useful to research homework quality in schools and also homework compliance in affective settings (Dettmers et al., 2010; Kazantzis et al., 2016).

Answering these open questions is important for implementing support on fostering resilience and personality development in schools not only as a curricular goal, but also as an effective educational activity. Such activities are particularly important because there is evidence that children and young people lose a lot of self-esteem during their school years (e.g., Robins & Trzesniewski, 2005).

AUTHOR NOTE

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