

REVIEW OF

Research on Teaching Adaptability

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The following reference document provides a brief review of academic research and relevant reports on best practices for teaching and assessing adaptability skills. The purpose of this research was to support the development of the Skills for Success Practitioner Competency Framework and was part of a series of research reviews on best practices for teaching each of the skills for success. This summary provides an overview of evidence-based teaching methods in the area of adaptability, key considerations when applying these practices, and a list of resources for further consideration.

METHODOLOGY

To conduct this review, several search queries were conducted on Google and Google Scholar using combinations of the following keywords: adaptability, resilience, emotional regulation, flexibility, self-directed learning, time management training, best practices, effectiveness, teaching, teaching approaches, teaching strategies, pedagogies, instruction, 21st century skills, 21st century competencies.

STATE OF THE LITERATURE

Adaptability appears in the literature in a range of contexts including career adaptability, mental health and psychological interventions to improve adaptive behaviours (e.g., coping and resilience), adaptive training for leaders and athletes, as well as within frameworks that relate to the development of 21st century skills and competencies.

There is considerable literature on adaptability and concepts of a similar nature (e.g., resilience, flexibility). Some practices, such as providing feedback and promoting a growth mindset to develop resilience, as well as certain adaptability training models, have considerable evidentiary backing. In terms of developing adaptability as a skill, a number of evidence-based strategies have been identified in the literature (e.g., feedback; formative assessment; learning about the malleability of intelligence). However, it is recognized that inherited traits and environmental factors also play a significant role.

CONCEPTS

The following are the definition and integral constructs of adaptability as specified in the Skills for Success Framework (SRDC, 2021):

DEFINITION:

“Your ability to achieve or adjust goals and behaviours when expected or unexpected change occurs, by planning, staying focused, persisting, and overcoming setbacks. For example, at work we use this skill to change our work plans to meet new deadlines, to learn how to work with new tools, and to improve our skills through feedback.”

CONSTRUCTS:

- Demonstrate responsibility
- Persist and persevere
- Regulate your emotions when appropriate
- Set or adjust your goals and expectations
- Plan and prioritize
- Seek self-improvement

However, some define adaptability more broadly than in the Skills for Success Framework and take account of the culmination of competencies in other skill areas (Levin, 2015). That is, individuals who are good collaborators, communicators, problem-solvers, etc. will be more adaptive to changing work and life situations and stressors. Kivunja (2015) notes that the development of 21st century skills will ensure that students will be job-ready or better adapted to the changing work demands of the 21st century.

APPROACHES TO TEACHING ADAPTABILITY SKILLS

Initiative, self-improvement, and a growth mindset

Self-improvement and a growth mindset (believing that an individual can improve their own intelligence, abilities, and talents) are integral features of adaptability, which can be developed and taught in range of ways:

Feedback: In relation to teaching adaptability and flexibility skills, Kivunja (2015) suggests that students should be taught how to appreciate feedback and respond positively. In effect, students should learn to use feedback to reinforce what they are doing to improve productivity, as well as a means to understand where they have made mistakes to take corrective actions. Kivunja (2015) lists a range of feedback strategies that can be used by teachers (see Appendix 1).

Resilience: Resilience refers to the attainment of good outcomes despite serious threats to adaptation and development (Masten, 2001, as cited in Yeager and Dweck, 2012). Yeager and Dweck (2012) defines the concept more broadly as “any behavioural, attributional, or emotional response to an academic or social challenge that is positive and beneficial for development,” (p. 303). Yeager and Dweck (2012) emphasizes the point that explaining personal adversities in terms of fixed traits undermines resilience, even when instructors

make positive remarks. For instance, telling a student that “they must be smart” when they did well on a test promotes the student to have a fixed view of themselves. Conversely, it is more beneficial to comment on the process – i.e., the hard work and effort that the student made in producing good work. This work aligns with that of Dweck (2007) regarding the importance of mindset and the ways in which people approach their goals. Dweck (2007) reveals that those with a growth-oriented mindset are more likely to attain their goals than those with a fixed mindset.

Self-direction skills: The Framework for 21st Century Skills Learning (P21, 2011) outlines three strategies to teach self-direction and initiative skills, which include how to manage goals and time, how to work independently, and how to be a self-directed learner.

- **Managing goals and time:** There are several frameworks and skillsets aimed at teaching students how to set goals and manage their time including the ‘SMART’ (Specific, Measurable, Achievable, Realistic, and Timely) framework for goal-setting and Parkinson’s Law of Time Management, which asserts that work expands to fill the time available for completion, and therefore, highlights the importance of setting deadlines to complete tasks on time (Kivunja, 2015).

Trilling and Fadel (2009, as cited in Kivunja, 2015) suggest that students should be taught the following to foster productivity and accountability skills:

- Working positively and ethically;
- Managing time and projects effectively;
- Multitasking (note there is competing evidence on multi-tasking – see Levitin, 2015);
- Participating actively, as well as being reliable and punctual;
- Presenting oneself professionally and with proper etiquette;
- Collaborating and cooperating effectively with teams;
- Respecting and appreciating team diversity; and,

- Being accountable for results (Trilling and Fadel 2009, as cited in Kivunja, 2015).
- **Independent work skills:** Students should be encouraged to prioritize tasks without being told how best to proceed. Instructors should teach students to be flexible, turn their attention when circumstances change, and monitor and evaluate the outcomes of their own actions (Kivunja, 2015).
- **Becoming a self-directed learner:** Trial and error are essential ingredients of students' independent learning and students should not be discouraged by occasional failure (Kivunja, 2015). Francom (2010) identifies four principles of self-directed learning to inform the development of teaching and assessment approaches to ensure students develop competencies in this area:
 - "Match the level of self-directed learning required to student readiness;
 - Progress from teacher to student direction of learning over time [shifting towards student-directed learning, wherein students set their own learning goals by helping to select study topics, resources and evaluation outcomes];
 - Support the acquisition of subject matter knowledge and self-directed learning skills together;
 - Have students practice self-directed learning in the context of learning tasks,"(p.33)

Attentional focus, emotional regulation, psychological interventions

Preliminary findings show that **mindfulness-based interventions** employed in educational contexts can reduce students' stress and anxiety, increase optimism, improve social and cognitive skills, and improve academic achievement (Schonert-Reichl et al., 2015; Schonert-Reichl and Lawlor, 2010; Beauchemin, Hutchins and Patterson, 2008; as cited in OECD, 2019). Often when individuals are met with a challenging or stressful situation, they can experience a fight, flight, or freeze response. Therefore, teaching coping mechanisms that

can calm stress and anxiety may aid students in their ability to adapt to changing and stressful circumstances.

Mitigating distractions is a critical aspect of maintaining focus and being able to effectively manage time. Levitin (2014) identifies a range of strategies and practical tips that can improve individuals' abilities to mitigate distractions, plan and manage time, including embracing paper-based to-do lists, taking breaks, utilizing different computer monitors for different activities, designating a short period of time to complete quick tasks, avoiding multi-tasking, using calendars, etc.

Emotional regulation is key to persevering and adapting to stressful and changing circumstances. Many psychological interventions show promise in helping individuals effectively regulate their emotions, including:

- Acceptance-based and appraisal/perspective-taking approaches, which are effective in regulating emotions, especially when contrasted with emotional suppression (Wojnarowska et al., 2020).
- Flexible approaches to emotional regulation, which aim to acknowledge the changing nature of situations, demonstrate potential as an adaptive strategy (Kobylynska and Kusev, 2019).

Environmental and external factors

Despite evidence pointing towards the capacity to teach adaptability related skills, environmental and contextual factors nevertheless play an important role. For instance, a study by O'Connell et al. (2008) revealed that **managerial support** shapes the personal adaptability of workers, after accounting for the effects of other variables in their regression model. The OECD (2015) emphasizes the importance of non-individual factors in their report on the development of socio-emotional skills. The report highlighted the importance of **school and home environmental factors and positive relations with teachers, parents, and peers**.

Adaptability training

Research has been conducted on different types of adaptability training for leaders and work contexts that show promise, such as:

- **Experiential variety:** incorporating variety into practice scenarios or training that requires trainees to change their existing performance strategy in a fundamental way such that an entirely new strategy is considered (Nelson et al., 2010).
- **Strategic information provision and frame-changing guidance:** providing information in the form of feedback before, during and after events (Nelson et al., 2010)
- **Error management training:** participants are explicitly encouraged to make errors and learn from their mistakes (Keith and Frese, 2008)
- **Perspective taking:** developing the skill to facilitate understanding of how others see the world, which is critical for effective negotiations and fostering interpersonal relationships (Holtkamp, n.a.).

An older model of adaptability instruction developed by Mithaug et al. (1987) targeted individuals with learning challenges. Components of the model include decision-making, independent performance, self-evaluation, and adjustment. The authors conclude that learners should be given more autonomy and self-direction in the learning process, the ability to reflect on their performance, and opportunity to make appropriate adjustments for future improvement.

There are also workshops and group activities designed to improve one's ability to adapt to change. A popular example is training based on the book "Who moved my cheese?"¹ where learners learn about the change process and how to cope with change, including thinking strategies such as *reframing* (e.g., turning what's negative about a

situation into a positive), *replacing* (e.g., can the need be fulfilled with something else), and *reinventing* (e.g., thinking creatively about the loss – what other opportunities are there).

ASSESSMENT OF ADAPTABILITY SKILLS

Several tools to assess socio-emotional skills were identified in the Skills for Success Framework and pertain to different contexts (e.g., employability, education, military and business, etc.). As noted in the Framework, despite some potential alignment, further work is needed to map these assessments onto the Skills for Success domains. Furthermore, given the multifaceted nature of adaptability, there may be need to develop or use multiple assessments to assess each sub-facet separately (SRDC, 2021).

A few other adaptability assessments were identified, though given the limited information available, it is not possible to comment on their reliability and validity.

At least one Federal Public Service department (Canada Revenue Agency) has included adaptability as a competency for staff². The scale includes four adaptability levels and provides contextual examples and descriptions to indicate where employees fall on the scale's progression. The underlying notion for each level is as follows:

1. Recognizing change and responding appropriately
2. Adjusting your approach to the situation
3. Supporting new ways of working
4. Facilitating major organizational change.

The CRA's employee recruitment process also entails a competency-based behavioural questionnaire, which includes adaptability-related questions (e.g., personal accountability)³.

¹ <https://youtu.be/A0LLKJgF--Q>

² <https://www.canada.ca/en/revenue-agency/corporate/careers-cra/information-moved/cra-competencies-standardized-assessment-tools/canada-revenue-agency-competencies-april-2016/adaptability.html>

³ <https://www.canada.ca/en/revenue-agency/corporate/careers-cra/information-moved/cra-competencies-standardized-assessment-tools/candidate-handbook.html>

The University of Alberta has a competency assessment for *demonstrating adaptability and flexibility*⁴. The assessment includes six performance standards and several sub-elements that are assessed under the following two competency elements: Develop ability to adapt to change in the work environment; and, Initiate change.

A career consulting website titled *Career Sherpa* has an adaptability test⁵ that individuals can use (self-rated), which includes items under the following adaptability areas: self-awareness, professional and personal management, problem-solving and decision making, attitude, and knowledge of competencies.

CONSIDERATIONS FOR TEACHING AND ASSESSING ADAPTABILITY SKILLS

Adaptability is comprised of a number of facets and interrelated skills that, as noted in the Skills for Success Framework (SRDC, 2021), may need to be assessed separately due to its multifaceted nature. The instruction of adaptability is equally complex and includes a number of diverging topics, from

time management to emotional regulation. As a result, the design of pedagogies that integrate various facets of adaptability may be a more efficient approach, as opposed to a modular approach where various facets are taught separately.

Furthermore, adaptability has a strong psychological component (emotional regulation) that is often addressed through intensive psychological interventions requiring specialized training. Therefore, it is conceivable that considerable and diverse training would be necessary to effectively teach adaptability, particularly given the important role that personality traits/attributes and environmental factors play in the development of this skill.

⁴ <https://www.ualberta.ca/human-resources-health-safety-environment/media-library/learning-and-development/pathways-learning-series/adaptandflexassessmentguide2017.pdf>

⁵ <https://careersherpa.net>

REFERENCES

- Buckle, J. (2023). A Comprehensive Guide to 21st Century Skills. <https://www.panoramaed.com/blog/comprehensive-guide-21st-century-skills>
- Chiesa, A., Calati, R., & Serretti, A. (2011). Does mindfulness training improve cognitive abilities? A systematic review of neuropsychological findings. *Clinical Psychology Review*, 31(3), 449–464. <https://doi.org/10.1016/j.cpr.2010.11.003>
- Dweck, C. (2006). *Mindset: The New Psychology of Success*. Penguin Random House. New York.
- Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. SAGE Publications.
- Holtkamp, M. (n.d.). Leadership skills and the role of adaptability and creativity in effective leadership: A literature review geared toward an integrative model.
- Keith, N., & Frese, M. (2008). Effectiveness of error management training: A meta-analysis. *The Journal of Applied Psychology*, 93(1), 59–69. <https://doi.org/10.1037/0021-9010.93.1.59>
- Kivunja, C. (2014). Teaching Students to Learn and to Work Well with 21st Century Skills: Unpacking the Career and Life Skills Domain of the New Learning Paradigm. *International Journal of Higher Education*, 4(1), p1. <https://doi.org/10.5430/ijhe.v4n1p1>
- Kobylińska, D., & Kusev, P. (2019). Flexible Emotion Regulation: How Situational Demands and Individual Differences Influence the Effectiveness of Regulatory Strategies. *Frontiers in Psychology*, 10. <https://doi.org/10.3389/fpsyg.2019.00072>
- Levin, H. M. (2015). The Importance of Adaptability for the 21st Century. *Society*, 52(2), 136–141. <https://doi.org/10.1007/s12115-015-9874-6>
- Levitin, D. J. (2014). *The Organized Mind: Thinking Straight in the Age of Information Overload*. Dutton.
- Mithaug, D. E., Martin, J. E., & Agran, M. (1987). Adaptability Instruction: The Goal of Transitional Programming. *Exceptional Children*, 53(6), 500–505. <https://doi.org/10.1177/001440298705300603>
- Nelson, J. K., Zaccaro, S. J., & Herman, J. L. (2010). Strategic information provision and experiential variety as tools for developing adaptive leadership skills. *Consulting Psychology Journal: Practice and Research*, 62(2), 131–142. <https://doi.org/10.1037/a0019989>
- Norris, C. J., Creem, D., Hendler, R., & Kober, H. (2018). Brief Mindfulness Meditation Improves Attention in Novices: Evidence From ERPs and Moderation by Neuroticism. *Frontiers in Human Neuroscience*, 12. <https://doi.org/10.3389/fnhum.2018.00315>
- O'Connell, D., Mcneely, E., & Hall, D. (2008). Unpacking Personal Adaptability at Work. *Journal of Leadership & Organizational Studies - J Leader Organ Stud*, 14, 248–259. <https://doi.org/10.1177/1071791907311005>
- OECD. (2015). *Skills for Social Progress: The Power of Social and Emotional Skills*. OECD. <https://doi.org/10.1787/9789264226159-en>
- OECD. (2019). *OECD Future of Education and Skills 2030: OECD Learning Compass 2030. A Series of Concept Notes*. OECD. https://www.oecd.org/education/2030-project/teaching-and-learning/learning-learning-compass-2030/OECD_Learning_Compass_2030_Concept_Note_Series.pdf

P21. (2011). Partnership for 21st Century Skills (P21). Framework for 21st Century Learning. <https://www.battelleforkids.org/networks/p21/frameworks-resources>

Parry, J. H. (1967). Adapting to Teach Adaptability. *Mental Health*, 26(3), 5–8.

SRDC. (2021). Research Report to Support the Launch of Skills for Success: Structure, Evidence and Recommendations. Final draft report.

Whittemore, S. T. (2018). Transversal Competencies Essential for Future Proofing the Workforce.

Wojnarowska, A., Kobylińska, D., & Lewczuk, K. (2020). Acceptance as an Emotion Regulation Strategy in Experimental Psychological Research: What We Know and How We Can Improve That Knowledge. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.00242>

Yeager, D., & Dweck, C. (2012). Mindsets That Promote Resilience: When Students Believe That Personal Characteristics Can Be Developed. *Educational Psychologist*, 47. <https://doi.org/10.1080/00461520.2012.722805>

APPENDIX

The following is a list/description of feedback strategies drawn from the following article:

Kivunja, C. (2015), Teaching Students to Learn and to Work Well with 21st Century Skills: Unpacking the Career and Life Skills Domain of the New Learning Paradigm. *International Journal of Higher Education*, 4(1), 1-11.

- Deciding on whether your feedback will be informal or formal, individual or generic and formative or summative.
- Providing feedback as an ongoing, formative process, which gives students the opportunity to monitor their progress, take more responsibility for their learning while reflecting on their performance and how they can improve it as indicated by the feedback loop.
- Expressing approval (or disapproval) of a student's performance either verbally, or through non-verbal forms such as nodding or making eye contact, or in writing.
- Indicating clearly if a response was right or wrong, or what the student has achieved or not, and articulating why the answer was correct or wrong; and then indicating what the student needs to do to get it right or to improve the response and achievement.
- Including comments that give the student an opportunity to suggest ways they can improve their performance.
- Identifying common weaknesses across students' responses, and preparing a one page summary of comments addressing the common misunderstandings. You can then use this summary to tell the whole class what they needed to understand to address the relevant criteria correctly and what they should do to improve performance on a similar task.
- Preparing examples of what good responses will look like, at different levels of meeting the criteria, and sharing these with the students before they do the assessment and then referring to them in the assessment feedback. This strategy gives students the opportunity to understand how the different criteria are addressed and to complete their tasks using this feedback formatively.
- Commending students on their achievement. However, praise should be used sparingly because research (e.g., Black & Wiliam, 1998) shows that it could have negative effects on attitude and performance if it comments on aspects of a student's self-esteem. If you decide to use praise in the assessment feedback, make sure you target the student's performance and not the student.
- Being specific and exact in how you word the feedback so students understand how they can use it to improve their work.
- Giving the feedback as comments rather than marks. Comments can guide students in trouble-shooting their own performance to correct it. This encourages flexibility and adaptability. Marks alone do not.
- Observing what your students do right and wrong and providing the appropriate reinforcing or balancing feedback immediately. This encourages flexibility because it helps the student to focus on what is needed to complete the task correctly, increases confidence and improves performance more quickly, while saving time and the frustration of completing a task that is wrong.
- Including in the feedback, some questions which encourage a student to think rather than comments which simply tell what should be done.

- Exercising empathy by trying to read meaning into what a student's response is saying. Try to understand his or her reasoning, motivation, concerns and needs. Try to get inside the student's mind and see his or her explanation from his or her perspective. Allow these perceptions to inform your feedback comments, so that you can help the student to think correctly in his or her own way, rather than think your way.
- Being realistic in your comments by directing the feedback to what the student can realistically achieve through improvement rather than an ideal outcome beyond his or her reach.
- Striking a balance in your feedback between encouraging and critical comments.
- Making comments that converse rather than preach. This strategy works best when you frame your comments like a dialogue or conversation with the student in a rather friendly manner on a topic of mutual interest.
- Involving students in decision-making about feedback by asking them to select a topic or an area of their work on which they seek quality feedback. This motivates students and encourages them to take greater interest and to put a higher quality effort into the task of their own choosing, and to show greater ownership and responsibility for the assessment process and to attend to the feedback comments more seriously.
- Requiring students to reflect on the feedback you have just given them and to use it to improve their response and re-submit it for re-grading. This encourages flexibility because it gives students the opportunity to use your feedback targeted at their particular areas of need and to apply it when and where it is most likely to have the greatest impact.
- Following the return of an assessment task, ask students to review the feedback you have written on their assignments and to draw up a list of three to five things they are going to work on following the advice or guidance contained in the feedback. This teaches them adaptability and flexibility.
- Structuring the feedback comments with scaffolding which prompts the student to think of the right answer or the right way to complete a task, or to add an explanation.
- Making sure that your comments that call for improvement provide specific advice on exactly where the improvement is needed and the steps or measures that the student needs to take to achieve the learning outcomes. This requires that your feedback be sufficiently clear so that it can enable the student to 'close the gap' between his or her current position and the desired level of achievement called for in your feedback.
- Trying to use feedback to close the feedback loop. You do this by returning the feedback and giving students the opportunity to use it in their learning. As Sadler (1998) says, the only way you can tell if feedback results in learning is for students to make some kind of response to complete the feedback loop. Similarly, Boud says: "Unless students are able to use feedback to produce improved work, through, for example, re-doing the same assignment, neither they nor those giving the feedback will know that it has been effective" (Boud, 2000, p. 158). It is this opportunity to re-do what they had done that trains them in flexibility and adaptability.