Evaluating university students' self-perceived generic skills learning: Framework development and application

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Problem Statement

- (Health) professionals face new and complex problems.[1]
- Need generic skills: useful in a different domains, situations, and contexts.
- Skills learning in universities: complex and authentic problem-solving activities in disciplinary domains[2] [3] with explicit instruction and opportunities to practice.[4]
- Students' generic skills learning remain unclear during these learning opportunities.
- Difficulties: large number of possible generic skills, no time and resources for assessment available[5], and often few results due to complex and time-consuming development of skills.
- View learning as all changes occurring in the student, not only as improving the skill-level.[6]
- Students' self-perceptions of learning: many changes occur inside students' heads.[7]
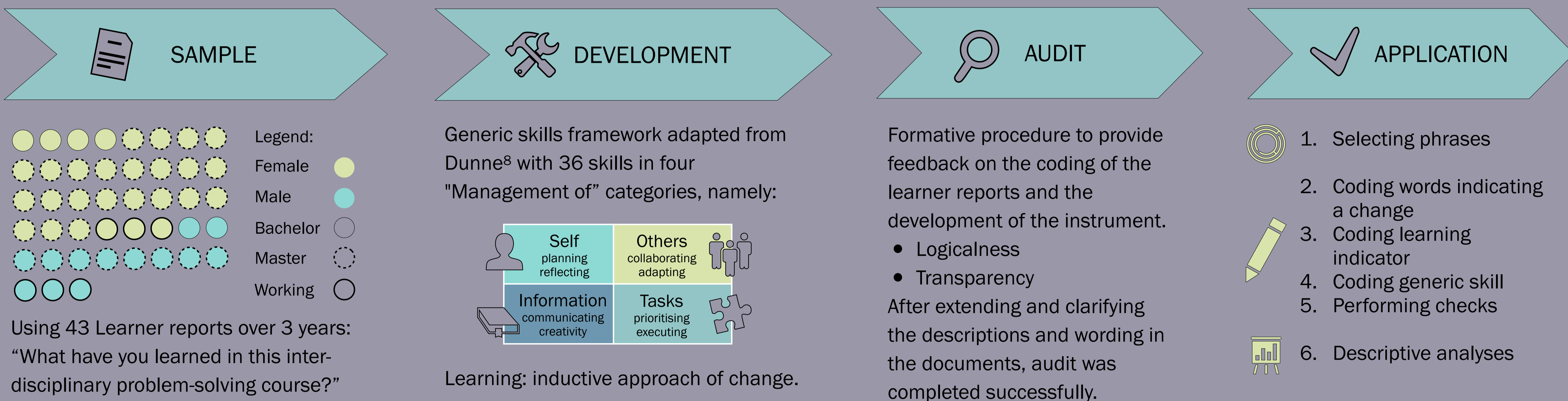
Generic skills examples

- Collaboration
- Communication
- Dealing with stress
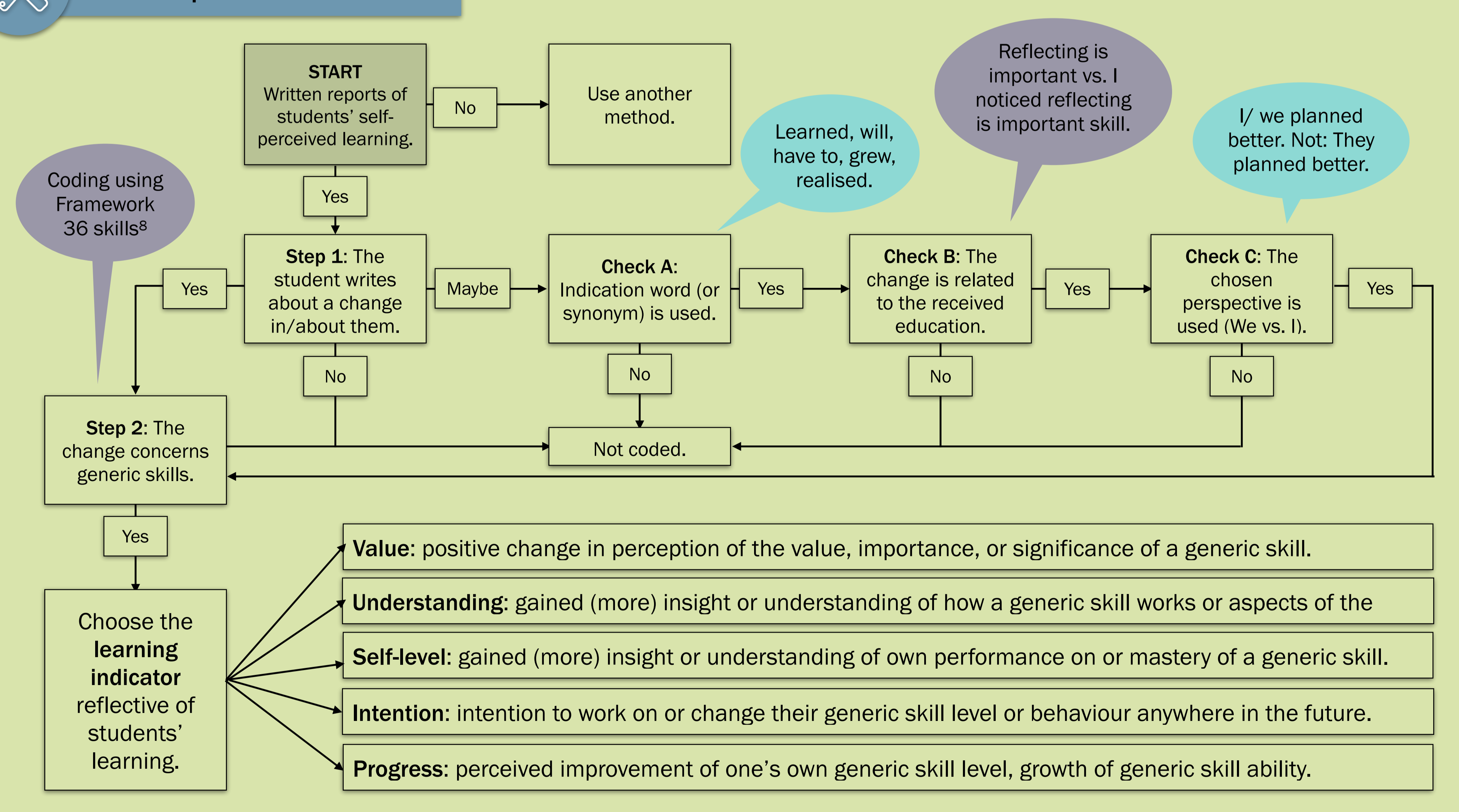- Time-management
- Reflection
- Giving feedback

Research Questions

1. How can a framework help evaluating students' self-perceived generic skills learning?

2. How do students perceive their generic skills learning after following a complex problem-solving course with opportunities to develop generic skills?

Method and Analysis

SAMPLE

Legend:
- Female
- Male
- Bachelor
- Master
- Working

Using 43 Learner reports over 3 years: "What have you learned in this inter-disciplinary problem-solving course?"

DEVELOPMENT

Generic skills framework adapted from Dunne[8] with 36 skills in four "Management of" categories, namely:

Self planning reflecting	Others collaborating adapting
Information communicating creativity	Tasks prioritising executing

Learning: inductive approach of change.

AUDIT

Formative procedure to provide feedback on the coding of the learner reports and the development of the instrument.
- Logicalness
- Transparency

After extending and clarifying the descriptions and wording in the documents, audit was completed successfully.

APPLICATION

1. Selecting phrases
2. Coding words indicating a change
3. Coding learning indicator
4. Coding generic skill
5. Performing checks
6. Descriptive analyses

Development Results

START: Written reports of students' self-perceived learning. — No → Use another method.

Coding using Framework 36 skills[8]

Step 1: The student writes about a change in/about them. — Maybe →
Learned, will, have to, grew, realised.
Check A: Indication word (or synonym) is used. — Yes →
Reflecting is important vs. I noticed reflecting is important skill.
Check B: The change is related to the received education. — Yes →
I/ we planned better. Not: They planned better.
Check C: The chosen perspective is used (We vs. I). — Yes →

No → Not coded.

Step 2: The change concerns generic skills. — Yes →

Choose the **learning indicator** reflective of students' learning.

- **Value**: positive change in perception of the value, importance, or significance of a generic skill.
- **Understanding**: gained (more) insight or understanding of how a generic skill works or aspects of the
- **Self-level**: gained (more) insight or understanding of own performance on or mastery of a generic skill.
- **Intention**: intention to work on or change their generic skill level or behaviour anywhere in the future.
- **Progress**: perceived improvement of one's own generic skill level, growth of generic skill ability.

Application Results

364 unique coded phrases
25% "general"
Table: total learning categories (last row), total generic skills (last column), and their relation. Numbers represent the number of learner reports with this coded phrase.

Generic Skills	Learning Categories					Total (n=43)
	Value	Under-standing	Self-level	Inten-tion	Progress	
Others	8	18	32	16	17	39
Self	1	5	22	8	10	29
Information	4	10	12	6	6	25
Tasks	3	4	3	2	5	16
Total (n=43)	15	30	40	25	29	

Conclusion and Implications

The current framework shows a broad perspective on skills learning. The different learning categories are linked to: intrinsic value[9], explicit instruction[4], and reflection[10]. In our case course, students reported learning the most on "self-level" and "management of others". Although collaborating, communicating, coping with stress, and giving feedback are the most often reported skills, a lot of variety was found.

- Translate learning categories to learning objectives.
- Implement to develop shared language to evaluate learning.
- Incorporate less traditional, more formative assessment methods.
- Self-perceived learning vs. objective observations.
- Generic skills learning in different domains.

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