

## Competencies in Transdisciplinary Thinking: Development of a Measurement Instrument for Tertiary Students

Clarice Sim, Singapore Polytechnic, Singapore  
Li Min Chong, Singapore Polytechnic, Singapore  
Mark Lu, Singapore Polytechnic, Singapore

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### Abstract

With the world and its challenges growing in complexity, singular disciplines are no longer sufficient to solve these multifaceted issues. Transdisciplinary Thinking, a skill to connect the dots among disciplines in order to transcend their boundaries, is increasingly recognized as a means for addressing many of today's complex social challenges through innovative problem-solving. Despite the increasing recognition of the importance of Transdisciplinary Thinking, there is no consensus on its conceptual definition, nor is there a validated instrument to measure this construct as a competency. This is a critical gap in transdisciplinary education, in the context of teaching, evaluating and assessing educational initiatives aimed at developing this important ability in students. In this paper, we tested out self-report survey items with a local and international expert panel ( $n = 8$ ), refined the items based on expert feedback, and validated the survey with a tertiary student population ( $n = 100$ ) through an exploratory factor analysis. The results suggest a unidimensional construct of Transdisciplinary Thinking with 19 items. The survey instrument is shared in this paper. At the presentation, we also shared classroom activities and real-world student projects to help nurture students in Transdisciplinary Thinking. Our work on measuring Transdisciplinary Thinking and teaching it in a classroom setting will be beneficial to other educators seeking ways to evaluate and foster holistic development in their students.

*Keywords:* transdisciplinary thinking, measurement instrument, tertiary education

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## Introduction

The term “transdisciplinary” was first conceived in 1972 by Swiss psychologist Jean Piaget, who saw it as a “higher stage succeeding interdisciplinary relationships ... which would not only cover interactions or reciprocities between specialized research projects but would place these relationships within a total system without any firm boundaries between disciplines” (Piaget, 1972, as cited in Bernstein, 2015, p. 2).

Transdisciplinary Thinking is now increasingly recognized as a means for addressing complex problems beyond the reach of a single discipline, by being able to “add new dimensions and perspectives”, and thus “give rise to more innovative, holistic solutions” for the progressively complex problems the world faces (OECD, 2020: 15, 24).

In Singapore, the value of fostering Transdisciplinary Thinking for creative problem-solving and innovation to address multifaceted problems is also at the forefront. A government initiative called SkillsFuture Singapore (SSG) identified Transdisciplinary Thinking as a “Critical Core Skill” essential for employees across all industries to do well in an increasingly complex economy. Also, the Design Education Advisory Committee (DEAC), launched by the Singapore Ministry of Trade and Industry, has a key pillar to “champion transdisciplinary learning”, in order for students to “engage different disciplines to synthesize knowledge and make meaning”. By applying Transdisciplinary Thinking to real world complex challenges, it can “spur innovation that defy traditional silos of knowledge” (DEAC, 2024).

In line with DEAC’s forward strategy, the Singapore Polytechnic created a new Diploma in Media, Arts and Design in 2020, bringing together three different schools (School of Communication, Arts and Social Sciences, School of Design and School of Digital Media, and Infocomm. Technology) and eight disciplines (e.g. animation, applied psychology, creative writing, games development and music). A signature pedagogy of the diploma program focuses on Transdisciplinary Thinking, where students from mixed disciplines work together on real-world projects to create innovative solutions for complex problems like sustainability and active aging.

Despite the acknowledgement of the importance of Transdisciplinary Thinking at the global, local and institutional level, there is still a lack of consensus on a conceptual and operational definition of what Transdisciplinary Thinking is. This paper captures the ongoing research that the authors are doing towards developing and validating a survey instrument for measurement and evaluation of Transdisciplinary Thinking among students. We developed a preliminary set of survey items from a literature review, obtained feedback from an expert panel to test for content validity. Then, we administered the revised survey with a tertiary student population to check for structural validity. The results of the validated survey instrument point to a unidimensional Transdisciplinary Thinking construct consisting of 19 items (in Appendix B).

## Literature Review

### Sharpening the Understanding of Transdisciplinary Thinking

While recognizing the increasing importance of Transdisciplinary Thinking in society, a challenge faced by educators is that there is still a lack of agreement on definitions of even the terms “multidisciplinary”, “interdisciplinary”, and “transdisciplinary” (Design Council UK, 2010). Further, related concepts like transdisciplinary learning (e.g., Payne & Jesiek, 2018),

transdisciplinary research (Hadorn et al., 2008), and transdisciplinarity (e.g., Augsburg, 2014) overlap in their conceptual definitions. Finally, Transdisciplinary Thinking has been conceived as a *skill* (e.g., Henriksen, 2018), an *ability* (e.g., SSG, n.d.) or a *disposition* (e.g., Drake, 2021), making things even murkier. An unclear definition of what Transdisciplinary Thinking makes it difficult for educators to purposefully design their curriculum to teach and assess Transdisciplinary Thinking.

Given our Singapore context, we start out our conceptual definition using the definition from SSG, which defines Transdisciplinary Thinking as having two main dimensions: knowledge and ability. Despite the word “thinking” in the construct, we conceptualize Transdisciplinary Thinking as a *competency* consisting of knowledge and ability, as per SSG.

Our overall conceptual definition of Transdisciplinary Thinking is the ability to connect the dots by integrating knowledge, skills and abilities across disciplines, to create innovative solutions beyond the reach of any single discipline, for real-world complex problems.

A further literature review points to the following three possible sub-dimensions:

- *Perceiving*: This involves viewing and understanding an issue from the perspective of different disciplines (Henriksen, 2018; OECD, 2020; Sim et al., 2022), mutual learning (Payne & Jesiek, 2018), exploring/exchanging perspectives from different sources of information (Chew et al., 2020; SSG, n.d.), and consciously breaking away from “disciplinary boundaries” (Finch et al., 2021).
- *Synthesizing*: Transdisciplinary Thinking requires “integration efforts” (Payne & Jesiek, 2018) to synthesize knowledge from other disciplines “in a multi-faceted and cohesive way” (Henriksen, 2018), and to be able to recognise synergies and patterns across different disciplines (Chew et al., 2020; SSG, n.d.) so that new knowledge is gained (Henriksen, 2018; Sim et al., 2022).
- *Solutioning*: This involves combining different disciplinary skills to address a complex issue (Sim et al., 2022; SSG, n.d.), “[creating] models of things or processes that explain the real world” (Henriksen, 2018), and arriving at innovative solutions beyond the reach of any single discipline (OECD, 2020).

From our conceptual understanding of Transdisciplinary Thinking and the possible three sub-dimensions, we formulated an initial 18 items which were carefully refined based on feedback from an expert panel and further validated with a student population. We seek to answer the following research questions:

- RQ1. Do the survey items have high content validity for the Transdisciplinary Thinking construct?
- RQ2. What is the factor structure of the Transdisciplinary Thinking construct?

## Method

### Research Design

A systematic process following established methods for instrument development and content validation was used (Lawshe, 1975; Zamanzadeh et al., 2015), to ensure both the reliability and validity of the measurement instrument for Transdisciplinary Thinking.

Pursuant to the literature review, an initial draft 18 items were developed, which were then thoughtfully refined based on feedback from an expert panel as well as a student population.

First, we consulted an expert panel, consisting of local and international industry experts, academics, and educators, and obtained their insights on the draft survey items. We calculated the content validity index and carefully revised the draft survey items based on the expert panel feedback. After revision, we further validated the survey with a tertiary student population and conducted an exploratory factor analysis.

Appendix A includes the draft survey items before and after revisions from the expert panel feedback. Appendix B shows the latest 19 survey items after both the expert panel and the student validation exercise.

### ***Expert Panel Participants and Analysis Procedure***

We purposefully selected members of the expert panel based on their prior experience with transdisciplinary or interdisciplinary work, and intentionally included both local and international experts, for more comprehensive feedback. The criteria for inclusion were 3 years or more experience with developing curriculum for cross-disciplinary student projects, prior research in interdisciplinary or transdisciplinary research, and/or working on interdisciplinary or transdisciplinary work in the industry. For example, one expert was an educator who had years of experience developing and leading cross-disciplinary projects for students in a higher education institution using design thinking. Another had close to a decade of experience in an agency which helped leaders and organisations innovate through a transdisciplinary strategy, design and practice. Emails were sent to the identified expert panel members and we received returns from eight of them.

To check for content validity of the survey items, which is the degree to which an instrument adequately covers the content domain (Polit & Beck, 2006), the expert panel was asked to rate how relevant each item was to the overall concept of Transdisciplinary Thinking and the sub-dimensions using a 4-point scale (1 = not relevant at all, 2 = somewhat relevant, 3 = quite relevant, 4 = highly relevant). The expert panel was also asked to provide qualitative feedback, so as to determine the alignment of the items with the sub-dimensions of the survey instrument. Item-level content validity index (I-CVI) scores, scale-level content validity index based on average method (S-CIV/Ave) were calculated (Polit & Beck, 2006).

The scales were judged to have excellent content validity if they composed of items that had I-CVI of .78 or higher and S-CVI/Ave of .90 or higher. For items and scales that did not meet this requirement, we looked closely at the expert panel's qualitative feedback, drawing on their collective experience and insights, and carefully revised the items.

### ***Student Participants and Analysis Procedure***

After revising the instrument based on the expert panel feedback, we further tested the instrument with a tertiary student population. Students aged 17 to 19 years old, who were studying in a higher education institution, were sent emails to complete the survey. We targeted students from varied disciplines and years of study for a more diverse sample to test the instrument.

Students rated their level of agreement to the questions, answering the survey as they normally would, when the survey is used for evaluation in a module. 100 students completed the survey. Table 1 shows the demographic profile of the students.

**Table 1**  
*Student Demographic Profile*

| Student demographic profile<br>(n = 100) |   |
|--|---|
| Year of Study                            | Year 1 (41%)<br>Year 2 (33%)<br>Year 3 (26%)  |
| Discipline                               | Architecture & Built Environment (8%)<br>Computing (1%)<br>Chemical & Life Sciences (29%)<br>Engineering (16%)<br>Media, Arts, & Design (34%)<br>Business (7%)<br>Maritime Studies (5%) |

To check for structural validity, exploratory factor analysis (EFA) was run. As guided by Costello and Osborne (2005), principal axis factoring (PAF) was employed to explore the underlying factor structure of the survey items. PAF will look at the common variance which is more suitable for our needs as we seek to arrive at a more concise conceptual understanding of the latent constructs that underlie the measured variables of Transdisciplinary Thinking (Fabrigar et al., 1999).

## Results

### Expert Panel Validation

The item-level content validity indexes (I-CVI) and scale-level content validity indexes using average method (S-CVI/Ave) are presented in Table 2.

Items with I-CVI lower than .78 were carefully reviewed and qualitative feedback from the expert panel were thoroughly considered in the revisions (Lawshe, 1975; Zamanzadeh et al., 2015). Two items were retained as these items were very close to .78 and the qualitative feedback revealed no significant issues, five were revised and one was dropped. An additional item was added to the Perceiving sub-dimension after considering the qualitative feedback. This content validity analysis and careful review, with the expert panel's inputs based on their years of experience, enhanced the validity of the revised instrument for the next stage of reliability analysis with the student population.

**Table 2**  
*I-CVIs and S-CVI/Age of the Survey Items*

| Sub-dimension and items                 | I-CVI | S-CVI/Ave | What revisions we did   |
|---|-------|-----------|---|
| Perceiving<br>(excluding PER3 and PER7) |       | .90       |   |
| PER1                                    | 1.00  |           |   |
| PER2                                    | 1.00  |           |   |
| PER3                                    | .63   |           | Revised to: "Recognise another discipline's strengths and limitations in understanding an issue"              |
| PER4                                    | .88   |           |   |
| PER5                                    | .75   |           | Retained as item was close to .78   |
| PER6                                    | .88   |           |   |
| PER7                                    | .63   |           | Revised to: "See an issue in a new way after considering information from different disciplines"              |
| Synthesizing<br>(excluding SYN5)        |       | .94       |   |
| SYN1                                    | 1.00  |           |   |
| SYN2                                    | 1.00  |           |   |
| SYN3                                    | .88   |           |   |
| SYN4                                    | .88   |           |   |
| SYN5                                    | .50   |           | Revised to: "Move beyond my discipline to integrate information and perspectives from different disciplines"  |
| Solutioning<br>(excluding SOL1)         |       | .88       |   |
| SOL1                                    | .63   |           | Revised to: "Try out new skills from different disciplines to explore solutions"                              |
| SOL2                                    | .88   |           |   |
| SOL3                                    | 1.00  |           |   |
| SOL4                                    | 1.00  |           |   |
| SOL5                                    | .75   |           | Retained as item was close to .78   |
| SOL6                                    | .75   |           | Revised to: "Move beyond my discipline to propose solutions that integrate skills from different disciplines" |

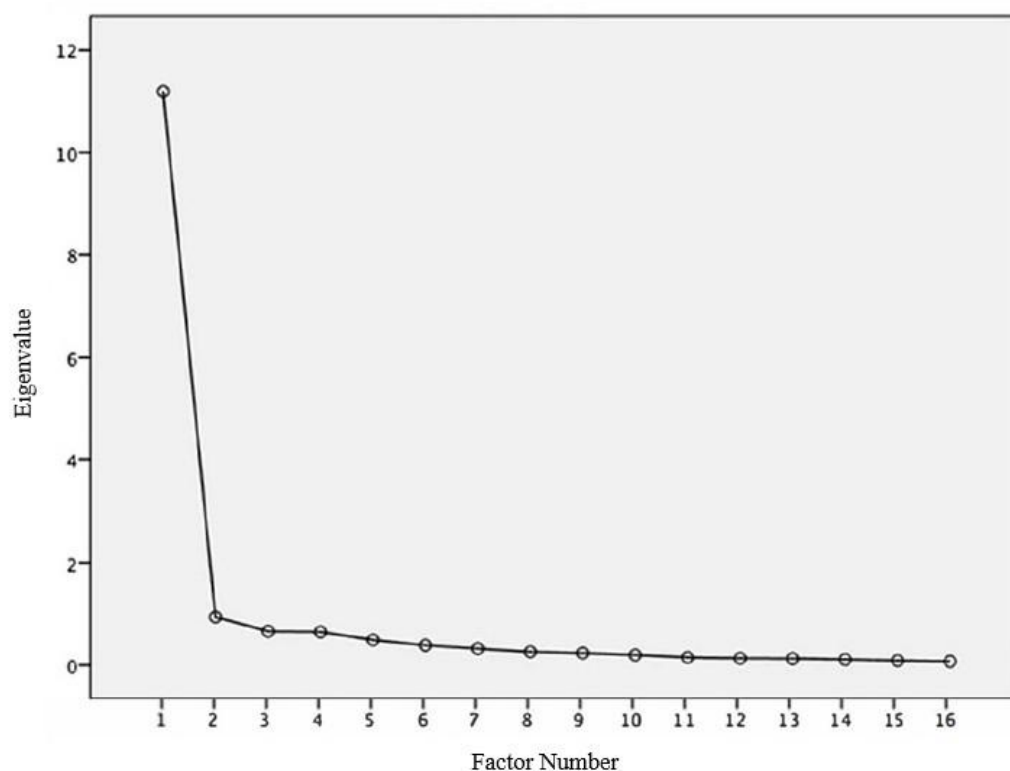
*Note.* The expert panel was instructed to rate how relevant each item was to the sub-dimension (1 = not relevant at all; 4 = highly relevant). The CVIs were calculated using the formulas from Polit and Beck (2006). See Appendix A for the wording of the items.

## Student Validation

After the expert validation, we further continued with the next phase of validation by testing with the student population. 100 students completed the revised survey with 19 items. Prior to conducting the Exploratory Factor Analysis (EFA), the suitability of the data was assessed. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .94, establishing that there was sampling adequacy for the EFA to proceed. In addition, Bartlett's test of sphericity was significant,  $\chi^2(171) = 1670$ ,  $p < .001$ , further supporting the factorability of the correlation matrix.

With both KMO and Bartlett's test of sphericity establishing suitability for factoring of the data, we proceeded with Exploratory Factor Analysis (EFA). The scree plot of the EFA using Principal Axis Factoring (PAF) is in Figure 1. Number of factors were determined by examining the scree plot to look for the point at which the slope of the curve levels off, forming an "elbow" (Cattell, 1966), which is at Factor 1 in Figure 1.

**Figure 1**  
*Scree Plot*



**Table 3**  
*Eigenvalues and Variance Explained*

| Factor | Eigenvalues | % of Variance |
|--------|-------------|---------------|
| 1      | 11.20       | 70.00         |
| 2      | .94         | 5.86          |
| 3      | .66         | 4.12          |

The EFA results point to a unidimensional construct for Transdisciplinary Thinking, with Factor 1 explaining 70.0% of the total variance. Subsequent factors explained less than 6% of the variance, providing strong evidence for a unidimensional construct for Transdisciplinary Thinking (Table 3).

Table 4 shows the factor loadings of the 19-items. The factor loadings are all sufficiently high (all above .7), also indicating a unidimensional construct for Transdisciplinary Thinking.

**Table 4**  
*Factor Loadings of the Items*

| Items | Factor 1 Loading |
|-------|------------------|
| PER1  | .73              |
| PER2  | .78              |
| PER3  | .80              |
| PER4  | .78              |
| PER5  | .81              |
| PER6  | .85              |
| PER7  | .82              |
| PER8  | .81              |
| SYN1  | .90              |
| SYN2  | .85              |
| SYN3  | .82              |
| SYN4  | .86              |
| SYN5  | .87              |
| SOL1  | .78              |
| SOL2  | .91              |
| SOL3  | .83              |
| SOL4  | .85              |
| SOL5  | .89              |
| SOL6  | .82              |

In addition, analysis of the student test data showed that the 19-items of the survey instrument has a high internal reliability, as Cronbach's alpha was a strong .92. This established the robust consistency of the instrument in measuring Transdisciplinary Thinking among tertiary students.

### **Discussion and Conclusion**

Our analysis in this paper and our ongoing work towards a validated survey instrument to measure Transdisciplinary Thinking fills an important missing piece in our collective understanding of this important construct.

We started out with three possible sub-dimensions of the Transdisciplinary Thinking construct (perceiving, synthesizing, and solutioning). After the expert panel and student validation phases of our research, our current analysis points instead to a unidimensional construct with 19 items, where Transdisciplinary Thinking is a singular and coherent concept.

Our overall conceptual definition of Transdisciplinary Thinking is the ability to connect the dots by integrating knowledge, skills and abilities across disciplines, to create innovative solutions beyond the reach of any single discipline, for real-world complex problems. Potentially, the overarching attribute of Transdisciplinary Thinking is the underlying ability to connect the dots across disciplines in order to transcend the disciplinary boundaries, which would include “perceiving” issues from different disciplines and “synthesizing” knowledge from different disciplines as well as combining different disciplinary skills to come up with innovative “solutions”.

After concluding our above expert panel and student validation exercise on Transdisciplinary Thinking and its possible sub-dimensions (perceiving, synthesizing, and solutioning), a paper to be published in August 2025 noted that a different transdisciplinary thinking scale (TTS) was recently piloted with high school students in the Philippines (Honra & Monterola, 2025), seeming to validate a multi-dimensional structure of Transdisciplinary Thinking consisting of: integrative thinking, inquiry skills and collaborative problem-solving. These dimensions differ from our analysis which points toward a unidimensional construct, and warrants further investigation. One reason for the difference could be because Honra and Monterola (2025) conceptualized their Transdisciplinary Thinking concept as a *cognitive process* among high school students in the Philippines, whereas we conceptualized it as a *competency*, per SkillsFuture Singapore’s perspective in the Singapore context, and tested it with a tertiary student population.

With a well-established methodology followed for the development and validation of the 19-items Transdisciplinary Thinking survey instrument (based on literature review, expert panel validation and student validation with reliability and content validity analysis), the survey instrument can be used as a tool for educators to assess measure Transdisciplinary Thinking in tertiary students. This is an important step in our common goal of furthering Transdisciplinary Thinking as a competency in students, so as to address increasingly complex real-world challenges that cannot be solved by any single discipline alone.

In future phases of this research, the 19-items may be further tested with industry partners to check for the different instruments’ external validity with practitioners and to validate the structural validity with a confirmatory factor analysis.

Appendix C shows a sample of three design-based activities that we use in the classroom to nurture students in Transdisciplinary Thinking. A presentation of our findings at the conference included the 19-item survey instrument as well as a sharing of classroom activities and real world complex project challenges that we run to develop Transdisciplinary Thinking in students. Our work on measuring Transdisciplinary Thinking and teaching it in a classroom setting will be beneficial to other educators seeking ways to foster holistic development in their students.

### **Declaration of Generative AI and AI-Assisted Technologies in the Writing Process**

The authors declare that no AI or AI-assisted technologies have been used to generate, refine, or correct the content in the manuscript. The ideas, design, procedures, findings, analyses, and discussion are originally written and derived from careful and systematic conduct of the research.

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**Contact email:** [chong\\_li\\_min@sp.edu.sg](mailto:chong_li_min@sp.edu.sg)

## Appendices

### Appendix A

#### Revisions to the survey instrument before and after expert panel feedback

Items are preceded with the sentence: When working as a team on a project, I am able to...

| Item | Initial survey wording   | Revisions made after expert panel feedback  |
|------|--|---|
| PER1 | Seek out new information and perspectives from different disciplines.                                      | No change   |
| PER2 | Learn new information and perspectives from different disciplines.   | No change   |
| PER3 | Exchange my discipline's perspective with people from different disciplines.                               | Recognise another discipline's strengths and limitations in understanding an issue. |
| PER4 | Understand an issue from a different disciplinary perspective.   | No change   |
| PER5 | Assess how important information from different disciplines is to the issue.                               | No change.  |
| PER6 | Evaluate the relevance of different disciplines to the issue.  | No change.  |
| PER7 | Identify new opportunities relating to the issue after considering information from different disciplines. | See an issue in a new way after considering information from different disciplines. |
| PER8 | Nil  | Recognise my discipline's strengths and limitations in understanding an issue.      |
| SYN1 | Find patterns or connections between information and perspectives from different disciplines.              | No change.  |
| SYN2 | Find new insights by combining information and perspectives from different disciplines                     | No change.  |

|      |   |   |
|------|---|---|
| SYN3 | Evaluate the usefulness of patterns and insights found from combining information from different disciplines. | No change.  |
| SYN4 | Integrate information and perspectives from different disciplines to understand an issue holistically         | No change.  |
| SYN5 | Integrate knowledge and skills from another discipline back into my own discipline.                           | Move beyond my discipline to integrate information and perspectives from different disciplines.     |
| SOL1 | Learn new skills from another discipline to enhance a solution.   | Try out new skills from different disciplines to explore solutions.                                 |
| SOL2 | Understand that another discipline's skills can help us arrive at a more innovative solution.                 | Understand that <i>different</i> disciplines' skills can help us arrive at solutions.               |
| SOL3 | Use the strengths of other disciplines to enhance a solution.   | Use the strengths of <i>different</i> disciplines to enhance a solution.                            |
| SOL4 | Find new opportunities for synergy between different disciplines to arrive at an innovative solution.         | Find new opportunities for synergy between different disciplines to arrive at <i>new</i> solutions. |
| SOL5 | Evaluate the pros and cons of proposed solutions based on the perspective of different disciplines.           | No change.  |
| SOL6 | Propose a solution that incorporates input from different disciplines.  | Move beyond my discipline to propose solutions that integrate skills from different disciplines.    |

## Appendix B

### 19-item survey instrument (after expert panel and student validation)

| When working as a team in a project, I am able to...  | Strongly Disagree | Disagree | Slightly Disagree | Neutral | Slightly Agree | Agree | Strongly Agree |
|---|-------------------|----------|-------------------|---------|----------------|-------|----------------|
| 1. Seek out new information and perspectives from different disciplines.  | o                 | o        | o                 | o       | o              | o     | o              |
| 2. Learn new information and perspectives from different disciplines.   | o                 | o        | o                 | o       | o              | o     | o              |
| 3. Recognise my discipline's strengths and limitations in understanding an issue.                                 | o                 | o        | o                 | o       | o              | o     | o              |
| 4. Recognise another discipline's strengths and limitations in understanding an issue.                            | o                 | o        | o                 | o       | o              | o     | o              |
| 5. Understand an issue from a different disciplinary perspective.   | o                 | o        | o                 | o       | o              | o     | o              |
| 6. Assess how important information from different disciplines is to an issue.                                    | o                 | o        | o                 | o       | o              | o     | o              |
| 7. Evaluate the relevance of different disciplines to an issue.   | o                 | o        | o                 | o       | o              | o     | o              |
| 8. See an issue in a new way after considering information from different disciplines.                            | o                 | o        | o                 | o       | o              | o     | o              |
| 9. Find patterns or connections between information and perspectives from different disciplines.                  | o                 | o        | o                 | o       | o              | o     | o              |
| 10. Find new insights by combining information and perspectives from different disciplines.                       | o                 | o        | o                 | o       | o              | o     | o              |
| 11. Evaluate the usefulness of patterns and insights found from combining information from different disciplines. | o                 | o        | o                 | o       | o              | o     | o              |
| 12. Integrate information and perspectives from different disciplines to understand an issue holistically.        | o                 | o        | o                 | o       | o              | o     | o              |
| 13. Move beyond my discipline to integrate information and perspectives from different disciplines.               | o                 | o        | o                 | o       | o              | o     | o              |
| 14. Try out new skills from different disciplines to explore solutions.   | o                 | o        | o                 | o       | o              | o     | o              |
| 15. Understand that different disciplines' skills can help us arrive at solutions.                                | o                 | o        | o                 | o       | o              | o     | o              |
| 16. Use the strengths of different disciplines to enhance a solution.   | o                 | o        | o                 | o       | o              | o     | o              |
| 17. Find new opportunities for synergy between different disciplines to arrive at new solutions.                  | o                 | o        | o                 | o       | o              | o     | o              |

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 18. Evaluate the pros and cons of proposed solutions based on the perspective of different disciplines. | o | o | o | o | o | o | o |
| 19. Move beyond my discipline to propose solutions that integrate skills from different disciplines.    | o | o | o | o | o | o | o |

Dear Students, thank you for taking the time to participate in this survey.

### Purpose

This survey aims to gather your views about working in project teams.

### Instructions

Participation in this survey is voluntary. The survey should not take you more than 5 minutes to complete. As you respond to the survey statements, please focus on your current experience in project teams rather than your ideal situation. There are no right or wrong answers.

### Confidentiality

The data collected will be treated in a highly confidential manner whereby all identities and responses are protected and kept confidential. Your answers will not affect your module grades or class standing in any way. Thank you for contributing to the enhancement of teaching and learning at our school!

**As you respond to the survey statements, please focus on your current experience working in teams rather than your ideal situation. There are no right or wrong answers.**

Your school:

Your year of study:

Thank you for your time!

## Appendix C

### Sample lesson activities and how they are used to nurture students in Transdisciplinary Thinking

|   | Sample lesson activity   |
|---|--|
| Perceiving<br>(i.e., Understanding and evaluating an issue from the perspective of different disciplines and exchanging perspectives beyond discipline boundaries)                  | <p><b><u>Lightning Demos</u></b><br/>(to exchange ideas from different disciplines)</p> <p>Find two examples of product/service/thing <b>in your Specialisation's industry</b> that is interesting and inspires you.</p> <p>Take turns to share with your team members your demos.</p> <ol style="list-style-type: none"> <li>1. The demo I would like to show you today is... ( )</li> <li>2. This company is solving the problem...</li> <li>3. They did this by...</li> <li>4. The important aspects of this example are...</li> <li>5. This applies to our project because...</li> </ol> |
| Synthesizing<br>(i.e., the ability to integrate efforts to synthesize knowledge from other disciplines, evaluate and recognize synergies and patterns across different disciplines) | <p><b><u>Affinity mapping and Insights</u></b><br/>(to synthesize and recognize synergies and patterns across different disciplines)</p> <ol style="list-style-type: none"> <li>1. Read and highlight key points or quotes</li> <li>2. Cluster and sort common points, then label each cluster</li> <li>3. Summarise the key points in each cluster</li> <li>4. <b>An insight is something that is new, interesting, and/or presents a new opportunity, perspective, or angle.</b> Synthesize insights by considering and connecting multiple clusters.</li> </ol>                           |
| Solutioning<br>(i.e., the ability to propose innovative solutions that go beyond the scope of any single discipline).   | <p><b><u>Random Matching</u></b><br/>(to spark new ideas by going beyond the scope of a single discipline)</p> <p>Individually, look at the selected ideas and add on your own take on it, from the lens of your <b>subject area, specialization or industry.</b></p> <p>Add 3 pink post-its around the original idea to capture your new ideas.</p>   |