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Cultivating virtue literacy in postgraduates: A content analysis of writing samples

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The Role of Self-Reflection in Developing Practical Wisdom Among Adolescents

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Abstract

This mixed-methods study explored how teaching students to engage in self-reflection could promote the meta-character virtue of phronesis, or practical wisdom. A sample of 986 students from 14 countries were engaged in The Good Project's dilemmas-based lesson plans, which promote self-reflection on aspects such as the youths' values, role models, and purpose. Findings indicate that students increased in wise actions according to the Situated Wise Reasoning (SWIS) measure, as well as increased emotional control during conflicts. Such results highlight the potential for such curricula to foster practical wisdom and emotional regulation amongst youth.

Students face numerous decisions daily. Whether it's schoolwork, family dynamics, or navigating friendships, each day brings new challenges. Social media creates additional digital dilemmas and pressures ("Digital Dilemmas to Teach Digital Citizenship", n.d.), with parents often ill-equipped to help youth (Weinstein & James, 2022). It is not surprising that youth today face a global mental health crisis (WHO, 2021).

Teaching students to draw on the Aristotelian meta-character virtue of *phronesis* (practical wisdom) can help them manage this culture of dilemmas. Kristjánsson et al. (2023) describe phronesis as "wise" moral decision-making, involving moral sensitivity, moral identity, moral judgment, and emotional regulation. More simply, Bohlin described it as "knowing what to do when you don't know what to do" (Bohlin, n.d.). One primary way to encourage *phronesis* in adolescents is through fostering the habit of self-reflection in students (Bruya & Ardelt, 2018).

The Good Project, at the Harvard Graduate School of Education, focuses on cultivating a habit of reflection in individuals as they pursue "good work" that is ethical, engaging, and excellent. Over the past five years, The Good Project co-collaborated with educators world-wide to create a dilemma-based curriculum for secondary school students in which students reflect on work-related dilemmas, role models, and their identities, values, and purpose. This study aimed to investigate whether adolescents begin to develop a habit of practical wisdom through engaging in consistent reflection exercises embedded in The Good Project lesson plans.

Practical wisdom and self-reflection

Phronesis, or practical wisdom, is a term that Aristotle originally defined as "knowledge of what is good and what is bad for humans" (Kroll & Mason, 2021). More recently in virtues psychology and philosophy, the term has come to be understood as a "meta-virtue" that encompasses moral deliberation, perception, action, and often moral emotions (Darnell et al., 2019). Fowers (2003) described *phronesis* as being able to perceive what is morally significant and right in one's context, being able to deliberate upon how to morally act in the specific context, and then being able to choose how to carry out moral actions. Kristjánsson and colleagues (2021) similarly defined the neo-Aristotelian model of wise (phronetic) moral decision-making as moral sensitivity, moral identity, which serves as the "blueprint of flourishing," moral emotions, and moral adjudication. Together, they argued that these moral elements constitute phronetic moral decision making.

Practical wisdom is associated with numerous positive outcomes. Foremost, practical wisdom is theoretically associated with "living well" and leading a flourishing life. In fact, Tsai (2022) pointed out that a person can be practically wise "if and only if [the individual] knows how to live well" (p. 608). Research studies broadly support this claim. For example, Hurteau and Gagnon (2022) and Conroy et al. (2021) found that practical wisdom can help professionals resolve ethical issues. Practical wisdom has also been found to be associated with better health, positive life satisfaction, and resilience (Jeste et al., 2019). Finally, as suggested above, practical wisdom is a prerequisite for expert decision making (Swartwood, 2013).

Practical wisdom can be fostered in a variety of manners in adults and youth, however foremost amongst these is a focus on reflective practice (see Westrate, 2020 for review). The Good Project defines reflection as one of its nine core concepts and practices. According to Mucinskas (2024), "reflection allows us to take advantage of opportunities to stop and think introspectively, to develop connections, and to construct a path forward" (para 2). Reflection can be thought of as an iterative process of interacting with one's own thoughts, emotions, feelings, and cognitions (Nguyen et al., 2014) and therefore is construct deeply intertwined with the concept of metacognition, or "thinking about one's thinking" (Chick, 2013).

Several practices have been proposed that are meant to encourage the type of reflection associated with practical wisdom. Bassett (2011) reviewed several strategies, highlighting that focusing on perplexing problems and allowing for reflective journaling to work through problems can allow for "new understanding of self, the world, and the self in the world" (p. 41). Huynh and Grossmann (2020) similarly noted that reflecting on one's own life experiences and story and/or reflecting on the life experiences of others can help foster students' wisdom.

Bruya and Ardelt (2018) have similarly focused on the importance of reflection for fostering wisdom. In their work, they instituted mindfulness training in a college leadership course to help develop students' wisdom, with a focus on breathing, being "conscious to the mind," and practicing mindful moments. Students were also asked to engage in journal reflections on their mindfulness training and the case studies of "wise" leaders that were introduced. In a later study, Bruya and Ardelt compared a more traditional course focused on wisdom cultivation with a course (a journal plus traditional assessments) focused explicitly on wisdom development (multiple journals plus a philosophy of life slideshow). Their study showed an increase in wisdom scores in the explicit wisdom pedagogy classroom, but not in the traditional wisdom classroom (Bruya & Ardelt, 2018).

In summary, reflective practices are a theoretically established practice for fostering practical wisdom in youth. However, Bruya and Ardelt (2018) and Huynh and Grossman (2020) noted, there has been limited research exploring how specific interventions impact youth wisdom development. The present study aimed to contribute to this literature through investigating the role of The Good Project's lesson plan's impact adolescents' reflection practices and practical wisdom over the course of one school year.

The Good Project Lesson Plans

In 1995, Howard Gardner, Mihaly Csikszentmihalyi, and William Damon launched a study of how individuals can perform "good work" in an era of rapid workplace changes and technological advancement. Over the course of a decade, the research team performed in-depth interviews with professionals in a range of domains—namely law, medicine, journalism, theater, genetics, philanthropy, business, K-12 education, and higher education. During conversations with participants representing a variety of ages and career stages, the team asked informants to think about their formative influences, beliefs and values, supports, obstacles, responsibilities, ethical standards, and more.

This initial study resulted in: 1) a variety of real-world ethical dilemmas that prompted discussions of what to do in difficult situations; and 2) a “Good Work Toolkit” (2010) oriented towards secondary educators that included dilemmas as well as specific activities, such as a Value Sort, to help teachers think with their students about good work in the classroom.

Furthermore, a framework of “good work” emerged in which good work features three attributes:

1. Excellence: good work is performed well and is of high quality;
2. Ethics: good work entails a recognition and nuanced handling of ethical dilemmas as they arise in the workplace; and
3. Engagement: individuals obtain purpose and meaning from their work.

These qualities are referred to as the “3 Es” of good work.

In response to a growing need for additional educational preparation regarding the nature of good work, as well as calls from educators for more formalized, sequential materials, The Good Project created sixteen lesson plans, which are specifically geared to adolescents in middle and high school.

The Good Project lesson plans expose students to dilemmas related to issues of good work, and ask students to reflect upon their identities, values, and purpose. In line with character education pedagogical best practices (e.g., Berkowitz & Bier, 2005; Lamb, Brant, & Brooks, 2021), the lesson plans were designed with the following undergirding principles in mind:

- **Reflection.** Each lesson includes individual student and group prompts, worksheets, and exercises that further explore “good work” concepts (e.g., responsibility, values, personal meaning) and ask students to reflect (usually in written form) on their own thoughts around this concept.
- **Group Work/Discussion.** Each lesson employs small or whole group discussion or small group activities, such as role-playing exercises or debates.
- **Collaborative Decision Making.** Students are given opportunities to think about how they would solve dilemmas together, or to think about their whole school or community mission.
- **Dilemmas/Case Studies.** Each dilemma is inspired by real-life situations in which an individual confronts a difficult decision entailing competing priorities.
- **Modeling.** Teachers are asked to model their own thinking for students, or students are asked to model for one another.
- **Seeing Multiple Perspectives.** Dilemma discussions are meant to surface potentially competing viewpoints in order for students to develop empathy and open-mindedness towards others.

The curriculum has four units, each paired with specific learning goals and assessment rubrics. The four student learning goals of the curriculum are: 1) to understand the term “good work” as defined by excellence, ethics, and engagement; 2) to develop habits of reflection through examination of external dilemmas and resources; 3) to articulate personal values and beliefs about work; and 4) to reflect upon active strategies to accomplish good work in the future. In

addition, each of the sixteen lessons included an individual lesson goal, a set of outcomes, and assessment recommendations.

Method

Sample

986 secondary school students from 14 countries were recruited from the classrooms of teachers participating in a Community of Practice research study with The Good Project and teaching the lesson plans during the 2022-2023 school year. Fully participating and consenting students in the survey included 813 students at Time 1, 205 students at Time 2 (25% retention) and 197 students at Time 3 (24% retention). Substantial attrition was due to the consent processes occurring on two different surveys.

Procedure

Throughout the 2022-2023 school year, students participated in pre, mid, and post-surveys using Brienza et al.'s (2018) Situated Wise Reasoning (SWIS) measure to assess practical wisdom. As noted above, sample sizes included 813 students at Time 1, 205 students at Time 2, and 197 students at Time 3.

In addition, teachers submitted student work from students' "Good Work Portfolios," capturing all completed lessons, including unit self-reflection assessments. There were 1,211 pages of student self-assessments within the total body of student work collected in Year 1. Students completed a 3-page self-assessment handout at the end of each of the four units that comprised the curriculum. Because student work was redacted and because individual students completed more than one assessment, it is not possible to count individual submissions. Students were primarily high school aged. Submitted self-assessments were submitted by students at schools located in Albania, Colombia, Guatemala, India, Mexico, Nigeria, Poland, Romania, Spain, Turkey, and the United States.

Measure

This study draws on an adapted version of the Situated Wise Reasoning Scale (SWIS) (Brienza et al., 2018). This scale asks individuals to "think about the most recent difficult situation that has happened to you with a close friend (e.g., a disagreement, conflict). This should be a situation that you yourself were involved in, whether or not you were the person who initiated the situation." Students are then asked to answer whether they did any of 21 actions while the situation was unfolding; for example, they are asked if they:

- Put themselves in the other person's shoes.
- Tried to communicate with the other person what they might have in common.
- Made an effort to take the other person's perspective.
- Took time to get the other person's opinions on the matter before coming to a conclusion.

- Looked for different solutions as the situation evolved.
- Considered alternative solutions as the situation evolved.

Results of a large-scale psychometric investigation (N =4,463) have revealed that the novel situated wise reasoning scale (SWIS) is reliable and appears to be independent of psychological biases (attribution bias, bias blind spot, self-deception, impression management), whereas global wisdom reports are subject to such biases. Moreover, SWIS scores have been found to be positively related to indices of living well (e.g., adaptive emotion regulation, mindfulness), balancing cooperative and self-protective interests, and goal versus causal reasoning about conflict (Brienza et al., 2018, p. 2).

Quantitative Data Analysis

Each of the variables related to the 21 SWIS actions was analyzed in order to examine how the Good Project lesson plans affected students' developing wise reasoning. In order to do so, we ran Latent Class Analyses (LCAs) and then a Latent Transition Analysis (LTA) in order to see if there were any patterns in how students' answers to these actions changed over their three survey time points.

Latent Class Analysis is a statistical analysis which examines how unobservable subgroups are influencing observable outcome variables in the data. Through looking for these underlying subgroups or "classes," we are able to see what might potentially be driving students' observed behaviors or characteristics. In this case, we used LCA to see if students' observed SWIS actions were driven by underlying subgroupings based on their scores at Time 1, Time 2, and Time 3 on their surveys. Latent transition analysis allows us to extend LCA by looking for trends across time latent class subgroupings; that is, latent class analysis allows us to see whether individuals maintain their latent class memberships (or classes) or whether they change their classes or subgroupings over time. Specifically, LTA examines the probability of an individual transitioning between different classes over time (Collins & Lanza, 2009; Nylund-Gibson & Young, 2018). In the current study, we used LTA to examine how individuals' reflection profiles evolved from Time 1 to Time 3 based on their class membership.

Data analyses were run in R 4.4 drawing primarily on the poLCA, depmixS4, readxl, dplyr, reshape2, and ggplot2 packages. First, the SWIS variables were cleaned, and rows with missing values were removed casewise. Latent class analyses were conducted for each time point using the poLCA package in R drawing on all 21 wise reasoning variables. Models with 2 to 5 latent classes were tested. For each model, in order to achieve best convergence, multiple randomized starts were used (n=10) and a maximum of 1500 iterations were allowed for. The Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC) were used to assess model fit, with lower values of each indicating better model fit (Collins & Lanza, 2009).

These criteria revealed that a 4-class model fit the data best at Time 1, while a 3-class model fit best at Times 2 and 3 (Time 1, 3 Class Model: AIC 20471.572, BIC 20777.120, Time 2 3 Class Model: AIC 4889.323, BIC 5105.319, Time 3, 3 Class Model: AIC 4661.092, BIC 4874.500).

However, to facilitate the Latent Transition Analysis (LTA), which performs better with consistent class sizes across time points, we proceeded with the 3-class model for all three time points in subsequent LTA analyses. In addition, a class reordering process was implemented to enhance interpretability and consistency across time points. This reordering was based on the conceptual understanding of the classes, aligning them by level of construct across time point (e.g. “lowest” class at Time 1, with “lowest” class at Time 2). This reordering was applied consistently across all three time points and was used as the basis for the subsequent LTA. All subsequent analyses and visualizations, including the calculation of transition probabilities, estimation of latent class prevalences, and determination of the most likely pathways through latent classes, were based on this reordered class structure. This approach allowed for a more coherent narrative in describing how individuals moved between different levels of the measured construct over time.

LTA models were fitted using the depmixS4 package in R. To help models converge the LTA model was run with random initial values (n=10) and up to 5000 iterations allowed for. The model specification included a single multinomial response variable representing overall state categories, with time-varying transitions between latent states modeled across three time points. The best fitting LTA model was chosen based off of the AIC, BIC scores (2186.48 and 2319.15 respectively). As noted above, a lower AIC and BIC and higher entropy score indicate a better fit to the data. Transition probabilities between the latent states across time points were then calculated in order to examine the probability of individuals staying within their same class or transitioning to a different class. Latent state prevalences were also calculated in order to estimate the most common classes at each timepoint. In addition, the most likely pathways through the latent states at each time point were calculated and ranked by probability, providing insight into common trajectories of change over time.

Qualitative Data Analysis

There were 1,211 pages of student self-assessments within the total body of student work collected in Year 1. Students completed a 3-page self-assessment handout at the end of each of the four units that comprised the curriculum. Because student work was redacted and because individual students completed more than one assessment, it is not possible to count individual submissions. Students were primarily high school aged. Submitted self-assessments were submitted by students at schools located in Albania, Colombia, Guatemala, India, Mexico, Nigeria, Poland, Romania, Spain, Turkey, and the United States.

The students were asked the following questions in the self-assessment handouts:

1. How have you met or exceeded each of the four criteria for this unit? What about the overarching learning goal for this unit? Are there areas in which you strive for continued improvement? Draw on examples from your work in your Good Work Portfolio in your response.
2. Consider how your thinking has changed over the course of this unit. Write a short response using the following: “I used to think _____ but now I think _____”. What have you noticed in your daily interactions that you might not have prior to this unit?

3. How has your behavior changed as a result of your learning? Have you acted differently or approached your work differently than you might have in the past? Draw on any recent events or interactions when you have made connections to the lessons from this unit. (Note: It's ok to say that nothing has changed if that is the case!)

During this first coding analysis, 30 codes were identified, including: alignment, challenged, contributing to the greater good/teamwork, different perspectives, dilemma, engagement, ethics, excellence, good work vs work, growth, lesson feedback, making connections outside of class, mental health, mentor, metacognition, mirror test, mission/communities, no growth, not engaged, obstacles/opportunities, political comment, purpose of the lessons, reflection, resilience, responsibility, self-discovery, speaking up, value of time and values.

For the purposes of this inquiry, the following three codes were analyzed: 1) metacognition and 2) making connections outside of class.These codes were chosen for this analysis because of the ways that the curriculum supports metacognitive reflection throughout, which might have important ramifications for students' abilities to draw connections between their learning and their lives.

Quantitative Results

As noted, for each time point a 2 to 5-class solution was evaluated in the LCA model, with the 3-class solution chosen in order to move forward with the LTA analyses. See Figures 1, 2, and 3 which demonstrate the latent class item specific probabilities for each variable at Times 1, 2, and 3 for students who answered "yes" to the wise reasoning actions. Item-specific probabilities represent the likelihood of an individual in that class endorsing that specific item on the survey. Inspection of the class specific probabilities revealed that at each time point there were three types of classes:

- Mixed reflection: a class where students responded with mixed probabilities. (Class 1)
- Low reflection: a class where students did not highly endorse the items. (Class 2)
- High reflection: a class where students who responded "yes" to the wise reasoning items were clustered as having highly endorsed these items. (Class 3)

Figure 1. Class 1 Item Response Probabilities.

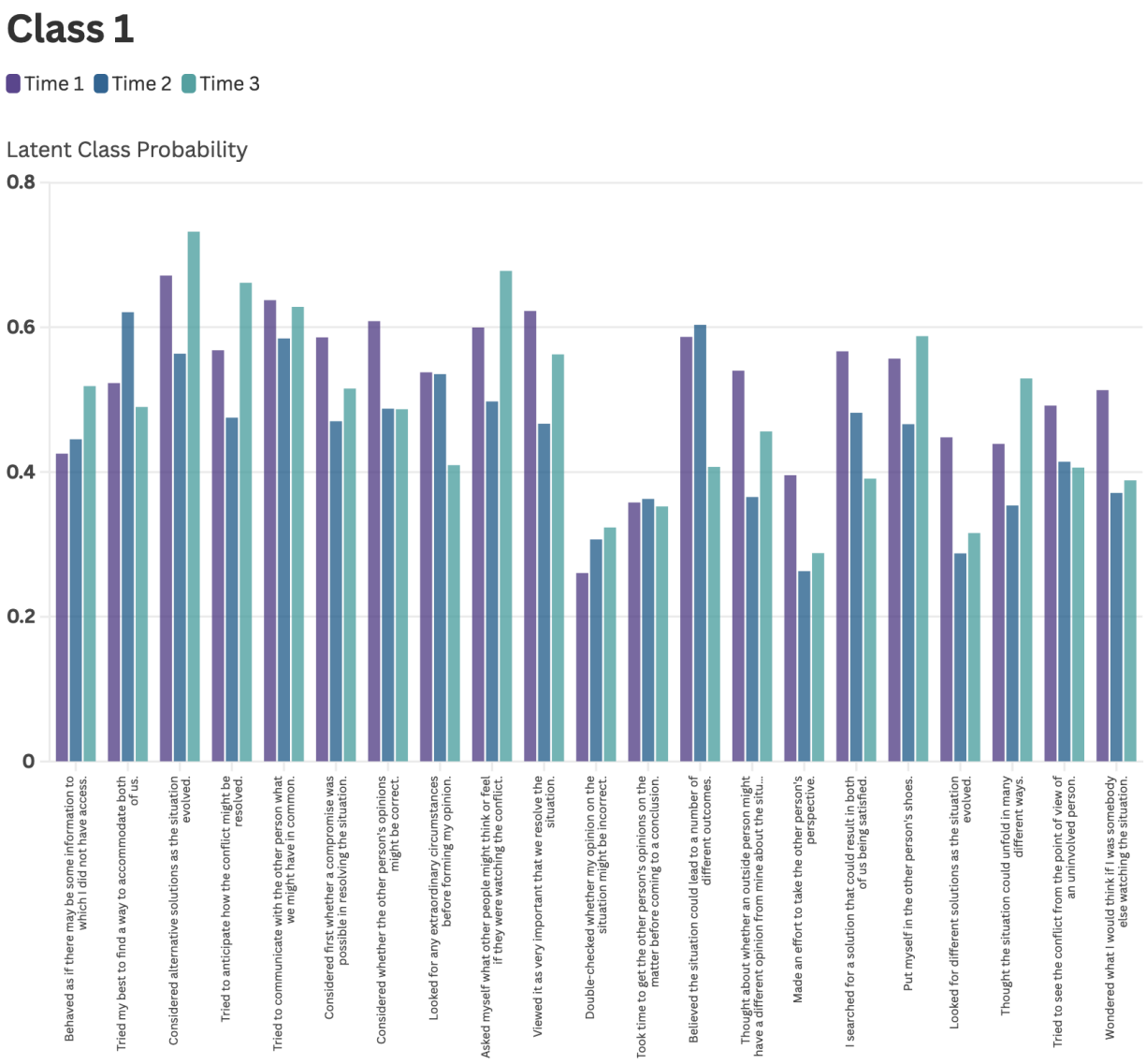


Figure 2. Class 2 Item Response Probabilities.

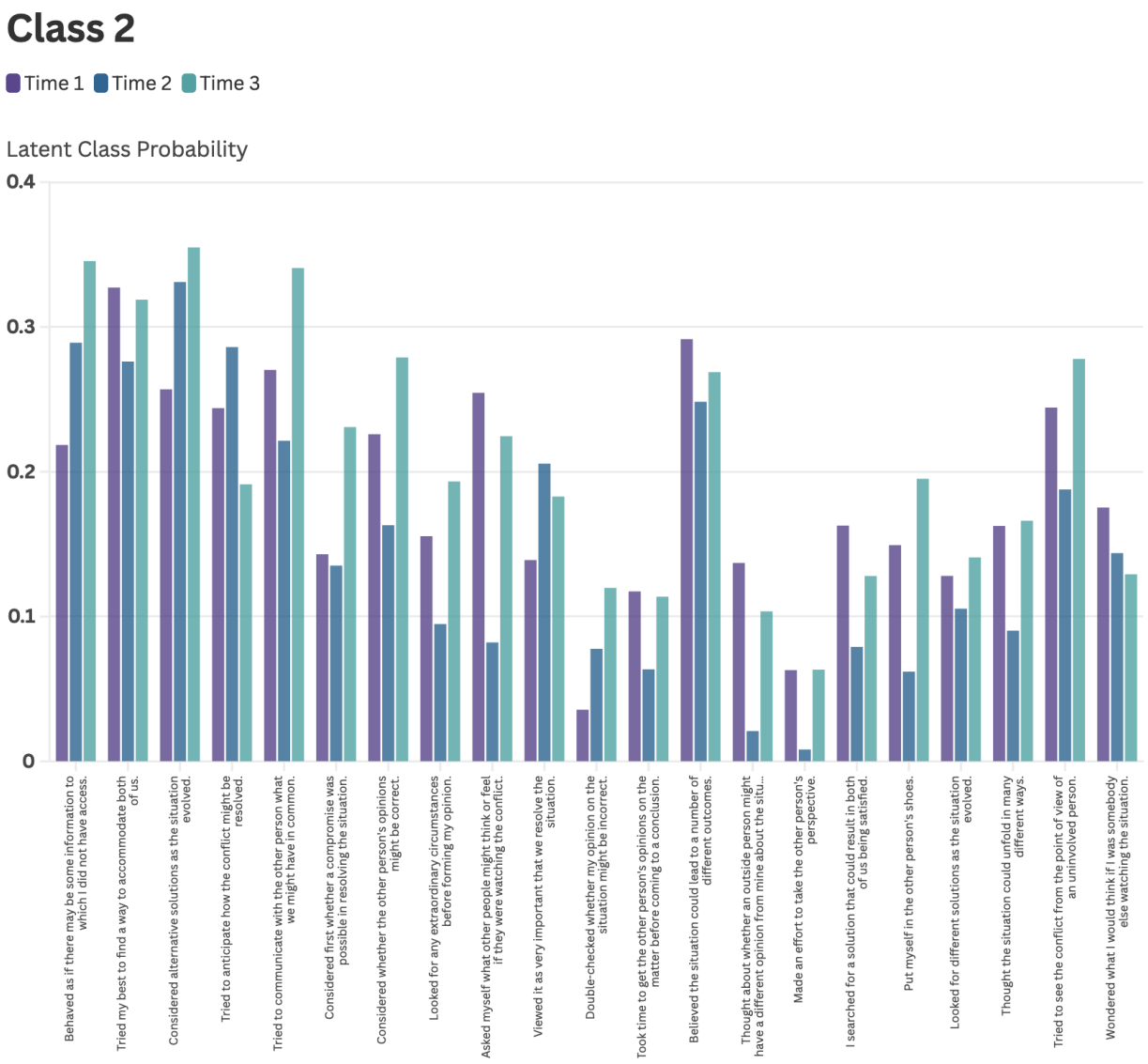


Figure 3. Class 3 Item Response Probabilities.

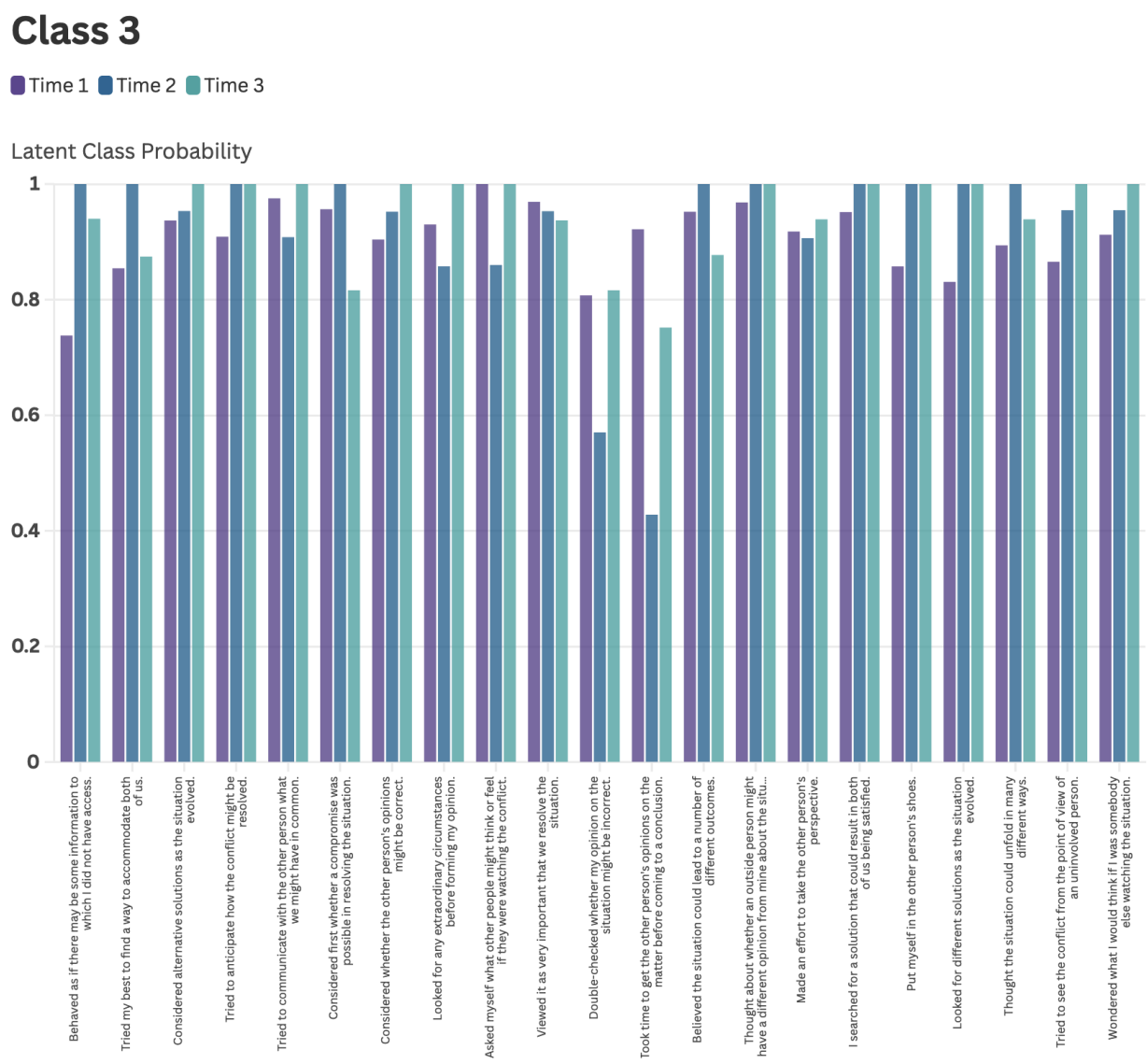


Table 1 includes the class proportions, which are the estimate of the proportion of individuals who belong to each class at each time point based on the Latent Class Analysis. At Time 1, Class 1, representing the “medium” profile, comprised the largest amount of the sample (52%) whereas Class 3, the “high” profile, comprised the lowest level (7%). At Time 2 there was an increase for both the middle (Class 1) and highest profile (Class 3), however, by Time 3, Class 1, the middle profile, had decreased in size to 27%, and the lowest profile (Class 2) increased to 64%.

Table 1. Class Proportions Based on a “Yes” Response to Each SWIS Action.

Class	Time 1	Time 2	Time 3
Class 1 (Middle)	52%	53%	27%

Class 2 (Low)	41%	37%	64%
Class 3 (High)	7%	10%	8%

Table 2 represents the transition matrix derived from the Latent Transition Analysis (LTA). The transition matrix represents the probability of transitioning between latent classes (or states) from one time point to another. The rows indicate the starting class and the columns indicating the ending class at the next time point.

Our Latent Transition Analysis (LTA) was conducted using a time-varying model, which allows for different transition probabilities between each pair of adjacent time points. While the analysis was conducted on aggregate data, limiting inferences about individual-level transitions, these probabilities provide insights into overall patterns of change between classes over time. The transition probability matrix presented in Table 2 represents the baseline transition probabilities, typically from Time 1 to Time 2. However, it's important to note that these probabilities can change for the transition from Time 2 to Time 3.

However, we can observe key patterns in Table 2. For example, 0.549 in the matrix indicates that 54.9% of individuals in Class 2 at Time 1 remained in Class 2 at Time 2, suggesting a high level of stability in Class 2, the “low” profile. Alternatively. Class 1 (the “medium” profile) and Class 3 (the “high” profile) showed less consistency, with only 32% of individuals remaining in Class 1 and 28% of individuals remaining in Class 3. The matrix likewise suggests that individuals in Class 2, the “low” profile, were the most likely to transition to Class 1, the “medium” profile, with 45% of individuals likely to transition. This was followed by 41% of individuals in Class 3, the “high” profile, who were likely to transition to the lowest profile (Class 2).

Table 2. Transition Probability Matrix

From/To	Class 1	Class 2	Class 3
Class 1	0.317	0.390	0.292
Class 2	0.447	0.549	0.002
Class 3	0.311	0.406	0.283

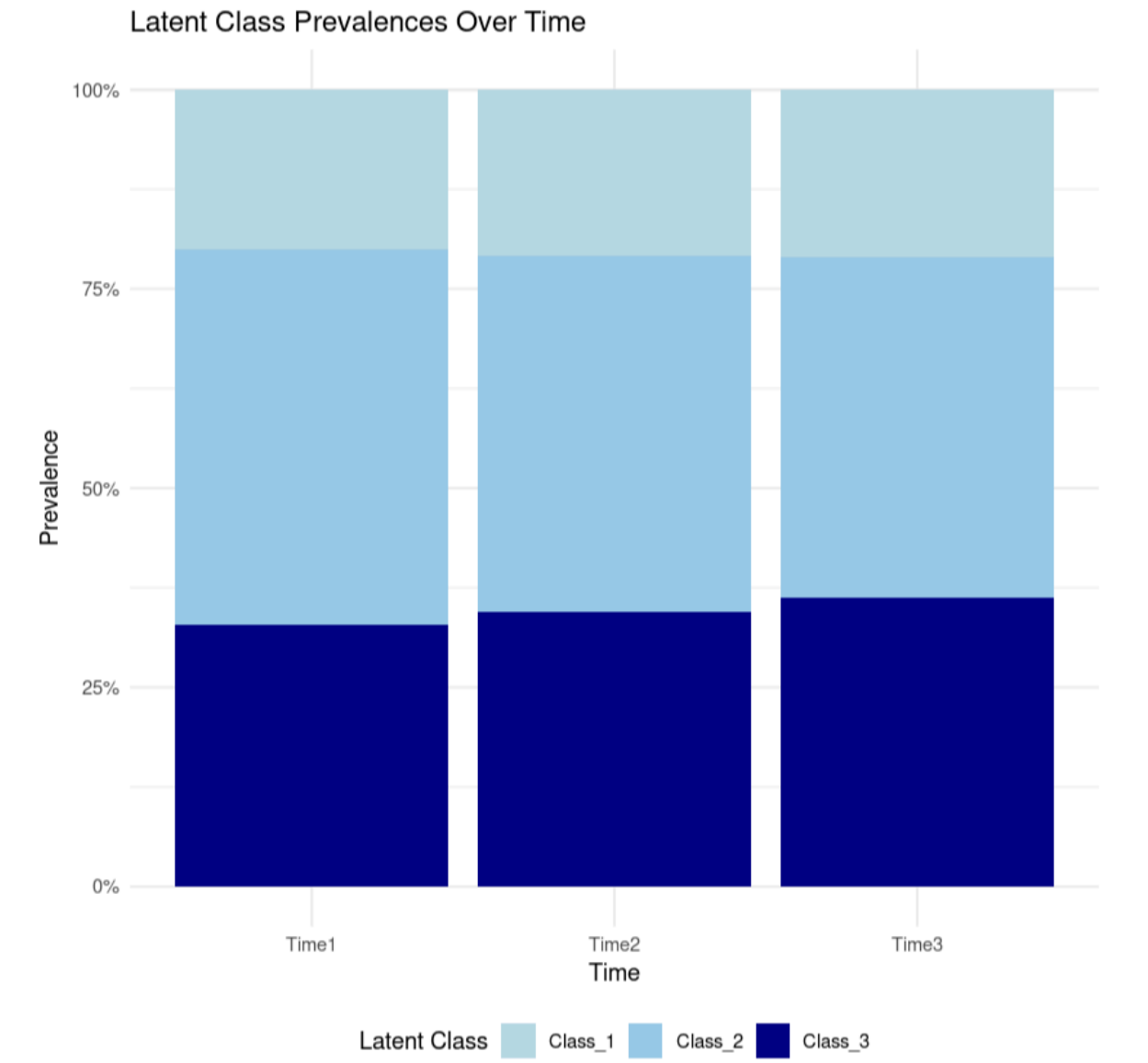
Table 3 represents the latent class prevalences estimated by the Latent Transition Analysis model. As with the LCA model, these estimates represent the proportion of individuals estimated to be in each latent class at each timepoint. The data suggests that:

- At Time 1, Class 2, the “low” profile, was the most prevalent, with 47% of individuals.
- By Time 2, the distribution has shifted, with the middle profile (Class 1) constituting the majority of individuals (45%).
- By Time 3, the distribution had spread back to Class 2 (the “low” profile) with 43% of individuals, but had increased in Class 3 (the “high” profile) with 36% of individuals.

Table 3. Latent Class Prevalences (Percentages)

Time	Class 1	Class 2	Class 3
Time 1	33%	47%	20%
Time 2	45%	35%	21%
Time 3	21%	43%	36%

Figure 4. Latent class prevalences over time for Classes 1, 2, and 3.

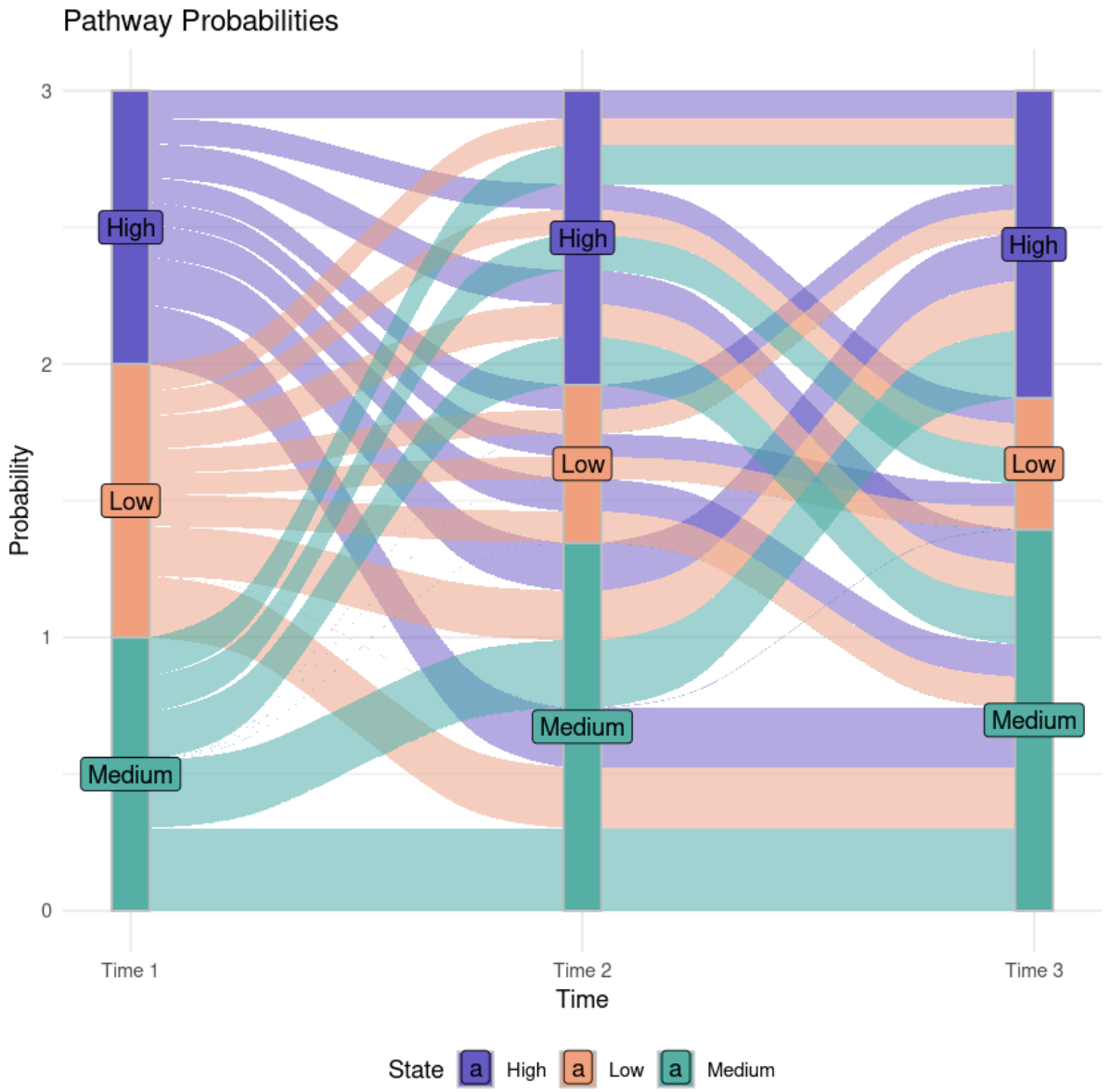


We took into account the complexity of our time-varying LTA models through analyzing three time point pathways. Table 4 provides the top eight transition pathways derived from the LTA analysis, indicating the most common individual trajectories followed across classes across the three time points (see also Figure 5). As seen in Table 4, the most common pathway was a stable transition across Class 2, with approximately 30% of individuals estimated to remain in Class 2 (the “low” profile) across Times 1 through 3. This finding confirms the earlier trend observed of Class 2’s high stability and prevalence seen in Tables 2 and 3. Following Class 2’s high stability was a trend of “late improvement,” with 25% of individuals remaining in the Class 2 “low” profile for Times 1 and 2 and then transitioning to the Class 3 “high” profile at Time 3. This pathway helps to explain the increasing prevalence of Class 3 seen in Table 3. Following these two pathways there is evidence of decline, with 22% of individuals moving from the Class 1 “medium” pathway at Time 1 to the “low” Class 2 pathway at Times 2 and 3, and, in addition 22% of Time 1 Class 3 “high” individuals following the same pattern. The remaining pathways show both a fluctuation in patterns (e.g. Class 1 -> Class 2 -> Class 3, Class 2 -> Class 3 -> Class 2) or a small amount of individuals (14%) who showed early and sustained improvement from the “low” Class 2 profile at Time 1 to the “high” Class 3 profile at Times 2 and 3.

Table 4. Transition Probability Matrix, Top 8 Pathways

Pathway	**Probability**
Class 2 -> Class 2 -> Class 2	0.3025
Class 2 -> Class 2 -> Class 3	0.2462
Class 1 -> Class 2 -> Class 2	0.2232
Class 3 -> Class 2 -> Class 2	0.2145
Class 1 -> Class 2 -> Class 3	0.1817
Class 2 -> Class 3 -> Class 2	0.1746
Class 3 -> Class 2 -> Class 3	0.1746
Class 2 -> Class 3 -> Class 3	0.1423

Figure 5. Alluvial plot representing the LTA pathway probabilities between Classes 1, 2, and 3 over Times 1, 2, and 3. The width of each flow represents the probability of the pathway.



Note: Figure 5 presents an alluvial plot visualizing the Latent Transition Analysis (LTA) pathway probabilities between Classes 1 (Medium), 2 (Low), and 3 (High) over Times 1, 2, and 3. The vertical axes represent a time point, with the height of the time point corresponding to the prevalence of that class at that time point. The colored streams flowing between the time points represent the transitions between the classes, with the width of the flow proportional to the probability of that particular pathway. Wider flows therefore indicated a more common transition. Crosses in streams represent individuals changing from one class to another.

Qualitative Results

Metacognition, or thinking about thinking:

Across the self assessments, evidence of metacognition, or "thinking about thinking," was present 218 times. These codes, which originated from the data itself and were not applied apriori, included: 1) recognition of and articulation about the value of reflection; 2) recognition and importance of self knowledge; and 3) awareness of one's own thinking process.

Recognition of and articulation about the value of reflection

Students expressed awareness that they were engaged in the process of reflection (about themselves, their relationships, their work), and many described the methods they utilized in doing so. For example, one student described the portfolio process that is a part of the Good Project Lesson Plans and indicated that the portfolio "helps you to realize how you do work and how you think." Another student mentioned that she had begun keeping a journal, realizing she reflected regularly and used this process to deal with a personal dilemma. Sometimes these descriptions involved logistics or planning; for example, one student mentioned the time required for planning purposes, saying, "I take twice as much time preparing before doing something." Another student recognized he now takes time to organize himself before jumping into tasks: "I write things down, [I] try to decide on priorities before acting."

At the next level, students recognized not only that they were reflecting but also the *value* of that process. As one student explained, "[I] used to reflect, but now am actually conscious of doing it now and recognize the importance of it." Sometimes, the value of reflection was connected with self-improvement: "I think that my daily way of achieving tasks has changed because of the reflections…I have found myself planning carefully the structure of my work…it excited me to do something good for myself and to prove to myself that I can do great things."

Students expressed that the process of reflection may also bring about self-improvement in more specific terms:

- to build self-assurance: "My acting has more reflection than before, I feel more confident in what I do, because I feel that even if I make a mistake, I can continue learning and improving."
- for heightened awareness: "It made me reflect deeply on the process and the ways I use to reach the result I want. I developed more sensitivity to the ethics of each task and project."
- to improve a specific quality: "I had never realized how little humility I have in class and by doing the mini-surveys after every lesson I noticed the values that I should work with."

Recognition and importance of self knowledge

As students recognized that they were learning more about themselves they were also able to articulate the value of that knowledge. One student explained that, as a result of the process of reflection, "[I] know myself better." Another student realized he is still growing, stating, "My human emotions are still developing and healing." For some students, improved self-knowledge was evident in their ability to make connections between actions and their beliefs; for example, as one student explained, "My way of thinking, acting and speaking have a lot to do with my values," while another student described, "I can now clearly state some of the values that I praise: [it] makes it more transparent to me, I know what I focus on while I work." In another case, a student recognized something new about herself: "[I] realized

I enjoy sharing my thoughts and perspectives with classmates and hearing theirs as well." Still another student was able to articulate an understanding of how he works, explaining, "I am more conscious of my work and how I do it, how I want it done."

Additionally, students not only recognized that they were improving their knowledge of themselves, but many were able to articulate the *value* of that knowledge. Several students expressed that they would be more readily able to think about their goals because they understood themselves. For example, as this student explained, "Self knowledge makes you have an idea of what type of person you are and where you want to go in life." Students recognized that there was utility in not only knowing their values, but in the realization of differences. One student described this well, and also wrote that as a result of knowing his values, he was more likely to act in accordance with them: "Before I knew that I have values, but I wasn't not quite aware that those values are ranked in importance, and that it varies for everyone. I saw which were more important to me, and I tend to use them more now. I saw it really reflects on who I am and who I was raised to be."

For some students, learning about themselves involved discovering previously unknown abilities, and therefore building self-confidence: "I used to think I wasn't good enough for school or smart enough…I realized I'm really good at solving problems and finding solutions to different dilemmas. I used to be more influenced [by] others' opinions … instead of focusing on mine."

Awareness of one's own thinking process

Students also described a greater awareness of their thinking processes: how they think, plan, problem solve. and more. Students explained that they are "more conscious of the decisions we make every day," that they "realize what motivates…decisions," that they "started planning more," and that they are "trying to think more creativity…out of the box." A number of students described their thinking processes specifically about decision-making and problem solving. One student wrote that he was "analyzing decisions differently now, weighing factors," while another described that she was "better at problem solving because [she doesn't] jump to conclusions right away." Students were also able to describe some details about their problem solving process; as one student wrote, recognizing when he makes decisions helps him to learn from those decisions: "I pay closer attention to the decisions I make and formulate strategies easier." Another student described his thinking as having grown, saying, "I think more widely, notice more opportunities, I've learned techniques of thinking to solve more complicated or ethical problems."

Several students referred to learning from the observation of others, thereby expressing an awareness not only of their own thinking processes, but an awareness of what others may be thinking as well. For example, one student expressed an understanding of the value of empathy, explaining, "I try to think about other people's point of view to get a broader picture of each situation." Another student explained that he has gained understanding by observing his classmates, "[I] started to understand different learning approaches of my friends, tried to learn from it." Still another student wrote about how she had changed her behavior in a particular situation because she was considering its impact on others: "I had to do something as a volunteer and I found myself reflecting on how my attitude and appearance

promotes a certain list of values, how that might be picked [up] on by someone and ultimately how it would affect their state at that moment."

Making Connections Outside of Class:

Across the self assessments, students described impact or evidence that the lessons continued with them beyond class 340 times. These included: 1) descriptions of moments where connections and realizations were made; 2) impact on students' habits; 3) impact on students' decision-making; and 4) impact on students' career aspirations or approach to work.

Descriptions of connections and realizations

Students offered multiple descriptions of examples where they made connections to the Good Project Lesson Plans outside of class. These included incidents at home, with family, and with friends. Students explained that they were more patient with younger siblings because they were more aware of their feelings, or they worked to help with household chores because they had thought about their responsibilities as well as their parents' work. A few students mentioned that their parents commented upon their changed behavior at home. Some students wrote about approaching conflicts with friends differently, as well as recognizing that values, even with close friends, might differ quite a bit. One student explained, "[I] used to think everyone valued wealth most and [now I]recognize that's not true." In addition, the skills students developed during classes were readily applied during leisure activities or hobbies, whether it be watching films and recognizing dilemmas, or developing a new approach to art, "I have used this unit multiple times when referring to my artwork. ..I realized I could better enhance my relationship with art if I form a connection with work and craved to achieve excellence for my own, personal benefit, rather than just some ego boost. I also began to think about what I and others around me value. This helped me decipher what needed to be done." Students were also able to identify mentors outside of the classroom and appreciate their value , "[I] realized most of my mentors are people from my daily life. They make me see the world around us through different points of view and support my journey." Several students explained that they expected to continue to use the skills they developed well beyond the classroom; as one student wrote, these are "skills [I] will use for the rest of my life."

Impact on students' habits

Students articulated a number of specific impacts on their habits outside of the classroom. These included the development of several skills that are often described as Social Emotional Learning (SEL) skills, many of which are directly relevant to the workplace, including: collaboration, active listening, open communication, and organization. Students described "wasting time less," "acting with purpose," feeling "more comfortable giving my opinion," and working "better in teams." One student referred specifically to a dilemma from the Good Project Lesson Plans and wrote that he has a "new approach to group projects." Keeping that dilemma in mind, he worked hard to consider how "everyone could have a task they enjoy." Another student explained that she has started to change the kinds of goals she sets for herself, "[I] have higher goals…not just in school but in life. I feel different when working and making decisions because I have in mind my values so I try to keep growing." Additionally, students

described changes in how they spend their free time, “watching Netflix less,” or “in my free time listen[ing] to podcasts with famous people and reflect[ing] afterwards about what they’ve said.

Impact on students’ decision-making

In addition to habits, students also articulated impacts on their decision-making outside of the classroom. One student explained that she used what had learned “to make a difficult decision about whether or not to enter a tournament during exam week.” Another student wrote that as a result of the GPLP, he had decided to join “middle school ministries,” a school volunteer group. With reference to a local environmental clean-up event, one student explained, “[I] approached it differently than I would have before, educated myself, talked more with people, didn’t just go through the motions.” Another student wrote that he has become more aware of small details in his decision-making, “[It has made] me think about the little things I do and how my actions affect people. A recent example …I was going to reach out to someone and I stopped and thought about how it might affect me and this other person.” Students realized they had resources upon which they might draw in their decision-making, as one explained, “don’t try to figure out dilemmas alone but share with parents, peers, teachers to think about best options.” Interestingly, another student wrote about the difficulty of making decisions but also articulated the help she’s discovered in her newfound abilities at analysis:

> I used to think that recognizing the obstacles and advantages of situations would not help me at all, now I realize that they do help me. They help me to know how to improve a situation, to know how to act In different situations and to control them…with identifying them I could make the most of the opportunities, or I could overcome the obstacles…it can help me encourage more opportunities or prevent obstacles. I have noticed in my daily interactions the fact that making decisions in life is hard.

Impact on students’ career aspirations or approach to work

Several students articulated impacts on their career goals or their approach to work or activities. In some cases, these impacts were more general. For example, a number of students had improved their understanding about particular values and explained that they intended to keep this in mind as they planned their futures. One student explained, “I value independence so I may choose my career with this in mind.” Another wrote, “I value time and that may impact how I approach work.” Several students referred specifically to the idea of meaning or engagement in work, one writing that a “sense of purpose [is] important to success”; another writing about the “importance of knowing yourself so you don’t choose a career you hate.” With reference to the idea of engagement, another student explained that he had “decided to pursue an opportunity for a three-dimensional printing competition.” Considerations about approach to competition were central to another student’s learnings:

> [I] didn’t used to think that enjoyment of what we do is important, now I think it’s one of the most important things we should pay attention to. In gymnastics, I didn’t like to compete, I got nervous, I wanted to win and I didn’t want to fail…now the only thing I think of during competition is that it is what I love…It’s helped me a lot to keep improving…small decisions like

> what attitude to take towards something can impact not only our performance…but also other people's situations.

Finally, another student explained that his plans to pursue aerospace engineering have been changed: "[I] want to have a positive impact now and it is influencing what I plan to do in the future." He still plans to pursue aerospace engineering but is "looking for more sustainable ways to fly."

Discussion

This mixed methods study investigated the impact of The Good Project lesson plans on adolescents' reflection practices and practical wisdom development over the course of academic one school year. In particular, given the lack of research which has found validated interventions that promote youth practical wisdom (e.g. Bruya & Ardelt, 2018), the study aimed to explore potential associations between engagement in the lesson plan's reflective practices and students' growing practical wisdom. By employing a mixed-methods approach investigating both students' answers to the Situated Wise Reasoning action items and their responses to their lesson plan unit reflections, this study aims to provide a nuanced understanding of both the quantitative change in adolescents' practical wisdom over the course of the academic school year, but also their qualitative understanding of reflection practices, practical wisdom, and their experiences with the intervention.

Quantitatively, the results of the study echo the mixed findings of others (e.g. Bruya & Ardelt, 2018) which have not found significant increases in practical wisdom on pre and post-surveys measuring wisdom. Indeed, the most common pathway found in our analyses was a stable pathway amongst the lowest class, indicating that students who started not highly endorsing the Situated Wise Reasoning action items were not likely to change their answers over the course of a year engaged in The Good Project lesson plans. However, the latent transition pathways also demonstrated the nuance in this finding

Qualitative results aligned with those of Bartell (2011), with students discussing the role of the lesson plans in fostering a newfound sense of metacognition and self-knowledge. Qualitatively, evidence of metacognition, or "thinking about thinking" emerged in a newfound awareness of the reflective process and articulation about the value of reflection, of self knowledge as well as thinking processes, including decision-making and problem solving. Additional evidence of the impact of reflection emerged outside of classroom experiences: with family, friends, during activities and in work. Impact was evident in students' habits, their decision-making, their approach to work and their career aspirations.

Limitations

As with all studies, this study was subject to several limitations. Foremost, as the research study did not include a comparison or control group, we cannot make any causal claims about the impact of The Good Project lesson plans on students' wisdom development. A second limitation was the substantial decrease in our survey sample from Time 1 to Time 2 and 3, particularly due

to the consent form limitations we encountered with students not realizing they needed to consent to the surveys on a separate form. Furthermore, our casewise deletion of missing data further limited the sample. This reduction in sample size limits the generalizability and power of our analyses. In addition, several notes should be considered regarding our LTA analysis. We made the decision to use a 3-class model across all time points for consistency within our LTA-model despite a 4-class LCA model fitting better at Time 1. In addition, the LTA was conducted on aggregate data, which limits interpretations of individual-level transitions.

Conclusion

In all, this study provides growing evidence of the role that explicit classroom-based reflective curriculum can play in fostering adolescents' practical wisdom. Although limited, both quantitative and qualitative evidence were promising in demonstrating pathways for students to gain in both wise actions, as evidenced quantitatively, and in wise regulation, reflection, and deliberation, as reflected qualitatively. Given the lack of such empirically validated curricula to date (e.g. Huyn & Grossman, 2020), additional research exploring the specific elements of curricula that foster wisdom in adolescents and the role of explicit curricula in fostering practical wisdom is needed. We are hopeful that this study serves as a further step in the ongoing efforts to explore ways to teach practical wisdom to adolescents.