The 4-Step Problem-Solving Process

Step 1: Goal Identification (Problem Identification), “What do we want students to know and be able to do?”

A. How does problem identification work when some students are receiving instruction in a brick and mortar environment, and others in an innovative environment?

Equally important to the initial planning of instruction for students in various learning environments (i.e., brick and mortar or innovative) is that teams engage in on-going structured problem solving, at every level (i.e., Tier 1, Tier 2, and Tier 3). Doing so will ensure that the instruction delivered is matched to the students’ particular needs, designed to their specific learning environments, and that it results in the best possible outcomes. As a reminder, the need for problem solving ends only when students have successfully exited our educational system, i.e., graduated having met diploma requirements. Eligibility for an IEP (Exceptional Student Education) does not exempt a student from being included when teams engage in Tier 1, small group, or individual problem solving. Growth toward grade level standards is the goal for all students, including those with disabilities.
Key Considerations

Problem identification across learning environments

Problem identification, the process of comparing a) the expectation for performance to b) actual or current performance, is consistent whether problem solving takes place for Tier 1, 2, or 3, at the district, school, or classroom level, or whether students are receiving instruction at home, in school, or a combination of settings. The differences exist in how it’s done and requires some consideration on the part of educators. Teams should consider the following when engaging in problem identification:

1. What is the priority area of focus (e.g., ELA, math, behavior, attendance, SEL, etc.)?
2. Which group of students will be discussed?
   a. Is the problem solving for students in a brick and mortar or innovative learning environment?
   b. If applicable, specifically which group of students within that environment is the focus of problem solving (e.g., students in a specific grade level, taking a specific course, within a specific subgroup, etc.)?
3. What is the expectation for performance?
4. Using data, how will current performance be established (what percent of students are meeting versus not meeting the expectation)?

While teams are exploring current group performance data, it is recommended that, to the fullest extent possible, subgroup data be disaggregated and reviewed. Subgroup concerns that are identified and addressed in subsequent steps of problem solving are likely to lead to more effective intervention plans and outcomes.

Resources: An Overview of 4-Step Problem Solving online course available in Thinkific

Assessment across learning environments

When problem solving for students who receive instruction in innovative learning environments, it is important to consider the assessment tools and data available. Data used for decision making at any level, and for any and all steps of problem solving, should be relevant to the guiding questions posed and should be valid, reliable, and suitable for the students being assessed. Again, for students learning in an innovative environment, this means ensuring that the data used a) come from assessments that are appropriate for remote administration, and are b) valid and c) reliable. To lessen the responsibility on individual schools to research and select appropriate assessments, and to prevent variability of assessment tools across schools, district-level teams may choose to make these decisions. Resources such as those from the National Center for Intensive Intervention provide information regarding validity and reliability of screening and progress monitoring tools. However, teams will need to give thought to whether the measures featured in these resources can be used with students in innovative learning environments.

Resources: National Center on Response to Intervention, general information on data use for RtI; Selecting an MTSS Data System, resources for selecting and evaluating a data system for screening and progress monitoring within an MTSS; the Data Evaluation & Assessment Across Learning Environments document.

Monitoring students identified as at high-risk

Innovative or online learning, is not a new concept, but rather one that has been in place in Florida for over 20 years (i.e., Florida Virtual School). Remote learning for K-12 students is an option that is highly effective for many students. But just as instruction in a brick and mortar setting may be challenging for some, so can innovative learning. Some students receiving instruction remotely may require additional support to ensure they progress at the same, or similar rate to their peers. Teams may want to consider evaluating progress more frequently for distance learners who are at increased risk, and ensure that ongoing problem solving occurs with attention to variables that are alterable and actionable by school/district staff.
B. How will expected and current levels of performance be established with students learning in various environments?

Key Considerations

Defining expectations in the absence of standards

Expected levels of performance are largely based on standards (e.g., B.E.S.T. Standards). State-established, academic standards serve as the ‘expected level of performance’ for all students, regardless of where they receive instruction. State standards aside, not all expectations will be the same for all students. For example, students being in attendance at least 90% of instructional time is a well-researched standard for brick and mortar learning, but may not be applicable to students receiving innovative instruction. Districts and schools will need to consider how they will define expected levels of performance in areas for which there are not state adopted standards, such as attendance, behavior, or social-emotional learning and how those expectations will be the same or different depending on where students receive instruction. Also, whenever possible, districts will need to ensure the expectations are grounded in research or best practices.

Measuring current level of performance

Once the expectation for performance has been established, the next question is, “What is the student’s current level of performance?” The key considerations when answering this question depend on a) the group of students in question and b) the standards against which they are being measured. Using attendance as the example again, the way in which teams measure current levels of performance among students engaged in innovative learning may be different from how they measure current levels among students learning in a brick and mortar setting. Whereas teams might use attendance reports to determine the current percentage of attendance for students in a brick and mortar setting, they may need to measure the attendance of learners receiving innovative instruction based on daily log-ins or number of assignments submitted each day. Teams will need to discuss and come to consensus on how achievement of the expectation will be measured depending on the mode of instruction.

Selecting current level of performance data

As a reminder, when determining current levels of performance, it is important that teams verify that the assessment tools used are valid, reliable, and relevant to the student expectations they are measuring. This means ensuring that the tools used to collect performance data are appropriate for administering to students engaged in innovative learning. When teams engage in problem identification, being specific about who the problem solving is for, what the expectation is, and using tools that accurately measure performance will help determine if a problem exists and to what magnitude.

Resource: Data Evaluation & Assessment Across Learning Environments document

Step 2: Problem Analysis, “Why is the problem occurring?”

A. What factors related to instruction, curriculum, environment, or the learners (ICEL) might be causing the problem?

Key Considerations

Innovative learning elements within the ICEL domains

During Problem Analysis/Step 2 of the Problem-Solving Process teams carefully examine reasons why a problem is occurring. When teams generate these possible reasons, they brainstorm ideas within four domains: Instruction, Curriculum, Environment and Learner. The acronym “ICEL” is commonly used to
refer to these four domains. Each domain includes multiple elements for teams to consider when trying to determine the cause of a particular skill gap or problem.

However, when learning takes place beyond the traditional brick and mortar setting to include innovative learning environments, the elements within each domain increase in number. Simply stated, when teams factor in innovative learning options, there is more to consider in terms of problem analysis. This analysis is critical in any format, but it is especially important when innovative learning is first implemented. Some special considerations related to innovative learning are provided below for each domain, but it is not intended to be an exhaustive list.

- **Instruction**: Is the level of instruction matched to the students’ needs? Is the instruction provided at a rate that keeps the student(s) engaged without overwhelming? Is the presentation of the instruction optimal for learning?
- **Curriculum**: Is there a common scope and sequence across media (e.g., brick and mortar and/or innovative environments)? Are sufficient learning materials available to support developmental and/or age appropriate learning? Is rigor maintained across settings? Is the format well-suited for the content (e.g., availability of manipulatives to develop early math skills)?
- **Environment**: Are instructional routines and expectations established and consistent across settings? Are measures taken to minimize distractions in the home learning environment? Are students “attending” by logging into synchronous learning sessions or completing asynchronous lessons?
- **Learner**: How are prerequisite skills deficits impacted with the introduction of innovative learning (i.e., continuing to reduce, remain the same or increase)? Are strategies to motivate students used across instructional settings? Are accommodations for students with disabilities maintained across instructional media?

**Alterable variables within innovative learning environments**

Problem Analysis is much more efficient when teams narrow down the possible reasons why a problem is occurring to those that are most likely to be true or “valid.” The most efficient way of doing this is to consider which ideas are based on alterable variables. Alterable variables are those that educators can reasonably expect to change through the interaction among instruction, curriculum, the environment, and the learner (Howell & Nolet, 2000).

When teams seek to address a particularly complex or intense problem, the temptation to gravitate toward unalterable variables can be strong. Team members can often fall into a habit of citing or discussing variables that, although potentially important, cannot be changed by effective instruction. Unalterable variables include such things as family poverty, birth order, and natural disasters. Attributing learning problems to such reasons can diminish the power of the team, hinder decision-making and derail the development of actional intervention.

Instead, teams must consider how the issue manifests in terms of instruction, curriculum, environment and the learner. So if the idea is presented as, “The students are not meeting expectations because of Hurricane Alice,” team members can reframe the idea in terms of how that crisis is impacting student learning. By reexamining the issue in this way, the team can uncover that the root cause is not necessarily “the hurricane,” but the resulting interruption to learning or lack of direct instruction. The revised hypothesis would then be, “The students are not meeting expectations because of the lack of core instruction.” In so doing, the team is empowered by redirecting problem solving toward factors over which they have direct influence and by anchoring their analysis to ideas that will ultimately inform or lead to instruction/intervention.

B. How can educators use the methods of Review, Interview, Observe and Test (RIOT) to gather information that allow for verification of the most likely reason why the problem is occurring?

Key Consideration

Additional RIOT assessments/information due to innovative learning environments

In general, time invested in problem analysis (1) improves the efficiency of the Problem-Solving Process; (2) helps teams identify the most likely reasons why a problem is occurring; (3) increases the likelihood that interventions will result in improved student outcomes. This efficiency is due in large part to the time spent utilizing the RIOT procedures to either validate or refute the potential underlying causes of the problem.

Therefore, when innovative learning serves to expand learning options and instructional media, it’s possible that additional assessments and data will become available. These new details should be considered when the team gathers information to find out if an educated guess or “hypothesis” about why a problem is occurring may in fact be accurate or viable.

So with respect to each of the RIOT methods, teams might consider Reviewing existing data or permanent products; Interviewing students and parents about off-site learning experiences or the transition from innovative environments to brick and mortar (or vice versa); Observing synchronous sessions, recordings or instruction supported through video conference platforms; Testing with the use of environmental scales in various settings, instructional routine checklists and self-ratings.

A RIOT/ICEL Matrix is often used to illustrate the use of the RIOT procedures within each of the ICEL domains. As innovative learning becomes more pervasive in schools and districts, teams might find it helpful to create a matrix customized with their own options for gathering information. Two sample matrices are provided in the resources section below.


C. If we effectively intervene, what would we expect to observe as an outcome?

Another way to ensure that Problem Analysis leads to efficient instructional/intervention design is to make a prediction about what the outcome would be if the barrier is effectively reduced or eliminated. The benefit is two-fold. First, making a prediction helps make certain that the educated guess is “instructionally relevant” or something can be impacted through effective instruction. Second, the prediction creates a direct link to intervention wherein, if the reason is confirmed, there is a clear idea of what the intervention will be.

For example, if the educated guess is, “The problem is occurring because in an innovative learning environment, students lack opportunity for corrective feedback.” The prediction statement would be, “If we utilize digital media that enables corrective feedback, then the students’ multi-digit multiplication accuracy will improve.” Here we can see that the idea itself is relevant to instruction and the prediction statement outlines the strategy to be implemented. When innovative learning is part of the landscape to any degree, there are certain variables that teams should consider:

- How unique is the barrier/root cause to a particular instructional format?
- How might a sudden change in media impact the barrier?
- How will a strategy that is linked to resolving that barrier transfer to other formats?
- How will an increase or decrease in innovative learning, as circumstances may dictate, influence the root cause? Will a change likely reduce or exacerbate the issue?
- Will strategies designed to target specific barriers transfer easily to other learning formats? What changes or adjustments may need to be made?
- How might the district’s Instructional Continuity Plan guide decisions related to sudden or gradual transitions and minimizing disruption to core as well as more intensive instruction?
Step 3: Instructional/Intervention Design, “What are we going to do?”

A. How does innovative learning impact instruction or intervention plan development?

After a validated hypothesis has been selected, the instructional or intervention plan serves to document “What are we going to do?” The plan identifies exactly what will be done, who will do it, when and where it will occur, as well as how fidelity and progress will be measured, and what decision rules will be followed once evaluation data is available. Regardless of the students’ learning environment, there are essential elements of the plan that need to be designed. However, when planning for instruction or intervention delivered in an innovative learning environment, additional details may have to be considered.

Key Considerations

What, Who, When and Where

The process of designing appropriate instruction/intervention, whether Tier 1, Tier 2, or Tier 3, can be more efficient and effective if teams know what resources are available, and how each is used. Intervention inventories, or resource maps, can help. When organized by skill, the inventory or resource map can provide information such as a) the interventions that address the particular skill, b) what assessment tools are available and appropriate for progress monitoring, c) the recommended frequency for collecting progress monitoring data, d) where the intervention is located (e.g., on campus, in what online learning platform), e) the names of staff who have experience or are trained in using the intervention, etc. Using an online repository for the resource map allows educators access to this information from any location.

What: When designing intervention, teams should be confident that:

- The intervention directly addresses the validated hypothesis and prediction statement developed during the Problem Analysis step
- It is suitable for use in the students’ learning environment (e.g., brick and mortar or innovative learning), and that any supports needed for innovative learning are included
- It is something that can be reasonably implemented by the teacher or interventionist

Resource: Tiered Instruction/Intervention Across Learning Environments document

Who: Who is selected to deliver the intervention depends on several factors. Teams should consider the implementer to be someone who:

- Has participated as a team member in the problem-solving process so that they have a deep understanding of the problem and why it is occurring
- Is knowledgeable about the intervention, e.g., has received training, has previously implemented with success
- Has sufficient time available in their schedule, matching the student’s availability, to deliver the intervention and associated supports needed, with fidelity
- To the greatest extent possible, has a relationship with the student

When: When the intervention is delivered (e.g., day(s) of the week, time of day, duration, etc.) will depend on:

- The intensity (frequency and dosage) needed to close the gap
- The students’ attention/engagement needs (should the intervention be provided more frequently for shorter periods of time, or will larger doses at a lower frequency be suitable?)
- The level of instruction or intervention being provided (is this plan for Tier 1, Tier 2, or Tier 3 intervention?) and where the student is receiving foundational instruction; e.g., if planning for Tier 2 or Tier 3 intervention, does it make sense for it to take place prior to core instruction, or after?
- If the intervention is designed to be synchronous, consideration of the student and family schedule may need to be taken into account to ensure that the student can be available at the scheduled time
Where: Where the intervention will be received will depend on the students’ current learning environment. If students receive the instruction as a component of their innovative learning programs, teams may consider working with parents and families to support at home learning spaces that are most conducive to learning.

What should be included in the plan to support the person implementing the intervention?

One of the responsibilities of the team when developing an instructional/intervention plan is to include how the interventionist will be supported. This support may include training, coaching, observation with feedback, or something as simple as scheduled check-ins to discuss questions, successes, or concerns. Planned support is especially important for interventionists who may be providing instruction in an innovative learning environment for the first time. The interventionist should sufficiently understand why the intervention is needed, and feel confident in their ability to deliver the intervention as intended. Even if the intervention is one that has been delivered with previous success, planning opportunities for deadline reminders, or observation and feedback can ensure consistency between intervention design and practice. As part of the designing the intervention, documenting what support will be provided, by whom, and when and where it will occur is considered best practice.

Does planning for how fidelity will be measured change significantly when the intervention is provided in an innovative learning environment?

The team should first consider how fidelity of the instruction or intervention would be measured in a traditional, brick and mortar learning environment. Using that as a starting point, they can then adapt the method for use in an innovative learning setting. Fidelity can be measured in many ways, including self-report, review of permanent products, or observations. For students engaged in asynchronous innovative learning, teams might consider recording the session or asking the parent to provide observational information regarding the presence or absence of particular key elements of the intervention (i.e., adherence). Regardless of the instructional setting, teams should plan to collect data regarding: attendance, session duration, student engagement, and other pertinent information. The more information available to measure implementation fidelity, the better the chance that decisions made during Step 4 will be valid and defensible.

Resources: An Overview of Intervention and Instructional Fidelity, online course available in Thinkific; intervention documentation template (individual student) - InterventionCentral; intervention documentation template (small group) - RtINetwork


B. Is planning for monitoring progress different in an innovative learning environment?

Key Consideration

Components of a progress monitoring plan

Regardless of the student’s learning environment, student response data must be collected in order to determine whether students are making adequate progress. The components of this particular part of the plan for an innovative learning environment are no different from those that teams would use for brick and mortar implementation. Teams should determine the assessment data that will be used to monitor student progress, the frequency of data collection, who will collect the data, and when the data will be reviewed. Once those decisions have been made, teams should establish decision rules. Decision rules allow the team to efficiently identify whether student progress is positive, questionable, or poor.

Resources: PaTTAN Resources for Progress Monitoring in a Virtual Setting; Progress Monitoring in a Virtual Environment, SC Dept. of Ed., Data Evaluation & Assessment Across Learning Environments document
Step 4: Response to Intervention/Instruction, “Is it working?”

A. How will teams respond if the response to innovative instruction/intervention is questionable or poor?

Key Considerations

Data considerations

When learning takes place remotely, out of the sight of the teacher, it can be difficult to determine what went wrong if data indicate a “less than positive” response to instruction or intervention. Teams may first want to examine the assessment tool that was used to measure the response; is there sufficient confidence that it yields valid, reliable, and relevant data when assessing students in an innovative learning environment? Researching assessments that are appropriate for innovative learning settings, or consulting with district level staff responsible for data and assessment may provide additional, better suited options.

Instructional/Instructional “fit”

Also, it may make sense for teams to consider the fit of the instruction or intervention for particular student(s). Using a validated hypothesis and prediction statement in Step 3 helps ensure that what is provided is matched to the instructional needs of the student(s). However, in addition to ensuring the instruction is appropriate to be delivered via innovative learning environments, there are other measures of ‘fit’ to consider as well; factors that are not typically considered for traditional brick and mortar learning. For example:

- Is there a match between the technology required for implementation with fidelity and the technology available in the home?
- Do the levels of self-motivation, organization, and engagement required for the instruction match the student(s) abilities?
- Does the instruction, the plan for implementation, and/or the method of delivery provide the student the levels of teacher feedback and support he/she needs?
- Do the circumstances in the home and family allow for or provide the support required for implementation?

Resources: An Overview of Intervention and Instructional Fidelity, online course available in Thinkific

Selecting the right instructional model

While it is imperative that the instruction or intervention is designed to match student need, it must also be presented using the right instructional model. Given the variety of instructional models available, teams may consider replacing the current instruction with one that not only addresses the targeted skills, but will better suit the student’s needs for the learning environment. This may mean moving to or from asynchronous and synchronous learning, or transitioning between digital and analog content.

Resources: Frequently Asked Questions on Collecting Progress Monitoring Data Virtually, National Center on Intensive Intervention; An Overview of 4-Step Problem Solving, online course available in Thinkific

B. How will high stakes decisions be made with students in various learning environments?

Key Consideration

Precautions when making high-stakes decisions

There will be students who, even with high quality instruction and intervention delivered through innovative learning environments, will require the support of Exceptional Student Education to be successful. Federal guidance for such considerations is available, as well as resources and information
regarding evaluation from the National Association of School Psychologists. It is important to note that under state statute, a lack of appropriate instruction in reading or math cannot be the determinant factor in determining eligibility. In light of the fairly recent changes in instructional delivery methods, this will be a significant factor for teams considering eligibility, and makes engaging in ongoing structured problem solving even more critical.

Resources: Data Evaluation & Assessment Across Learning Environments document, An Overview of 4-Step Problem Solving, online course available in Thinkific; Data-Based Decision Making, videos and modules from the Center on Response to Intervention; Evaluation and Eligibility in Distance Learning: Guidance from BEESS PS/RtI Project, recorded webinar featuring Dr. David Wheeler, School Psychology Consultant, 6/11/20. (00:27:39)

Establishing the Infrastructure for Problem Solving

A. What teaming structures are already in place for problem solving?

Key Considerations

Team membership for problem solving

4-step problem solving should occur whether or not staff are physically together. Planning and problem solving teams should be mobilized to review, revise, and implement plans for continuing instruction regardless of the learning environment. Instituting best practices on effective teaming (Nellis, 2012) will help educators continue problem solving efforts to address the needs of all students. This includes such things as establishing a clear purpose for the team, ensuring multidisciplinary team membership and assigning member roles and responsibilities. Problem solving teams are more effective when members have roles and responsibilities, such as a facilitator, note taker, and timekeeper. Typical membership for problem solving teams should include individuals representing a variety of disciplines and skills (e.g., administrator, general and special education teachers, student services personnel), as well as a district or school leader with the authority to allocate resources and approve actions that align with team decisions and planning. While many problem solving teams share similar core membership, team composition should be unique to the purpose of the team and should include others (e.g., behavior or literacy specialists) as appropriate. School leaders should consider how to involve parents where appropriate and consider the options for flexibility in brick and mortar and innovative environments.


Professional learning for necessary tools and related skills

Collectively, team members must have the knowledge and skills to follow a structured problem solving process (see the online course, An Overview of 4-Step Problem Solving). Team members should also possess skills to utilize technology to access and participate in the meeting, as well as collect, analyze, and interpret data to make informed decisions. Instructional videos on using virtual meeting platforms (e.g., Google Hangouts, Zoom, Microsoft Teams) and other digital resources are available for free on websites such as YouTube. District and school leaders should explore opportunities to provide high quality professional learning (Joyce & Showers, 2002) that includes the theory or rationale, modeling new skills, opportunities for practice and reflective feedback in order to increase educators’ knowledge and skills to engage in effective problem solving to support data-based decision making. Considerations for providing professional learning virtually can be found on the Learning Forward blog, The 3 C’s of Professional Learning from a Distance.

B. What is the established schedule for problem solving team meetings to support students across tiers of instruction?

Key Consideration

Maintain schedule regardless of location of staff

Just as with brick and mortar problem solving, district and school leaders should consider how to embed problem solving meeting times within the master school schedule(s) for innovative learning. It is recommended that teams develop a meeting calendar in advance in order to prioritize the work, establish meeting structure and expectations, and minimize scheduling conflicts. If meetings are not included during the initial creation of master innovative learning schedules, leaders will have to creatively plan for problem solving team meetings to occur within the assigned school schedule. Leaders must prioritize team time and plan ahead to avoid scheduling conflicts for team members with instructional responsibilities. Teams should consider the frequency and duration, goals, and develop an agenda for each meeting. Teams must also consider whether to convene in person, virtually, or a combination of both to provide flexibility and leverage team effectiveness. Ad-hoc meetings will likely need to occur, and teams should develop a plan for how these will be scheduled and communicated, and to what extent face to face and virtual meeting environments will be utilized.

Resources: How to Run a Great Virtual Meeting; 16 Secrets of Engaging Remote Meetings; 9 Best Practices for Engagement in Virtual Meetings; The Ultimate Guide to Remote Meetings in 2020; Scheduling team meetings using a meeting map

C. How will participation be maintained across stakeholders and team members to support planning and problem solving?

Key Considerations

Meeting norms

Facilitators of new problem solving teams should propose or co-develop meeting norms to establish a way of work and increase the effectiveness of the team. Existing teams that transition to virtual meetings should review norms and discuss whether they need to be adapted, added, or removed to meet the needs of the current environment. At a minimum, the meeting norms should establish an expectation for participation by all team members, regardless of their mode participation. More information about developing, maintaining, and benefitting from educational team meeting norms can be reviewed in the article, The Power of Team Norms, in the Journal of Educational Leadership. Some examples of norms specific to virtual meetings can be found in the article, 9 Best Practices for Engagement in Virtual Meetings.

Documenting, maintaining, and sharing problem solving efforts

As districts and schools engage across a wide range of teaching and learning environments, leaders should consider how meeting notes, intervention plans, and other documents will be made accessible across environments. Groups at all levels of the system (i.e., district, schools, problem solving teams) should consider how existing communication methods can be utilized, as well as what additional communication methods need to be harnessed to meet needs across virtual environments. District and school leaders should explore what tools (e.g., Google Suite, Microsoft 365, Canvas, Slack) are supported by their district Instructional Technology (IT) department. Districts and schools may choose to evaluate their existing online learning management and data systems to determine which platforms allow for storage and access of documents safely and effectively. Communication and training on these systems should be provided to staff to ensure that teachers can utilize the platforms to access problem solving meeting notes, intervention plans, and evaluation data. Problem solving materials (e.g., paperwork, data displays) may need to be adapted for team access in a virtual environment. Schools and teams should make decisions about how meeting notes will be collaboratively developed and housed, so multiple team members can share access while maintaining confidentiality. Also, when parents are involved, educational leaders must consider multiple means of access (e.g., email, online learning
platform, paper mail), to allow access to their child’s educational records and plans in ways that maintain confidentiality and adhere to district policy regarding the dissemination of educational records.