Literature Review: Needs Assessment in Action

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FEA Plan: Enhancing Collaboration in Graduate-Level Group Projects

Introduction: Let's be honest, most group work doesn't fail because students are lazy. It fails because no one took the time to figure out what the actual problem was before the assignment ever launched. That's where needs assessment and front-end analysis (FEA) come in. They're not buzzwords. They're the part nobody wants to slow down for but should.

In instructional design, needs assessment is how we stop guessing and start knowing. It's the process of identifying the gap between what's happening and what should be happening then tracing that back to its root causes. As Smith and Ragan (2005) frame it, FEA helps us determine whether a training issue even exists in the first place, or if the real problem is environmental, motivational, or organizational. It's diagnostic. Grounded. And when done right, it saves everyone time, money, and frustration.

This project, anchored in the team proposal from Team L3M0N8's FEA Plan identifies a clear and pressing issue: graduate students consistently report negative experiences with group work. Despite instructors using common support strategies like role assignments, peer evaluations, and group contracts, performance gaps still show up. Assignments get lopsided. Feedback goes ignored. One or two students end up doing the work for everyone else. Sound familiar? That's not just an annoyance; it's a performance problem.

And so, this literature review serves one job: to look at how needs assessments and front-end analysis show up in the real world, especially in the context of collaborative learning. Four peer-reviewed articles were selected, each presenting a different slice of the group work problem, from firsthand student frustrations to systematic breakdowns in design. Together, they paint a picture of what's really going on underneath the surface and what instructional designers need to consider before they slap another group assignment into a syllabus.

This isn't about redesigning group work for the sake of aesthetics. It's about solving for actual problems, rooted in real data. Because when you take the time to assess needs up front, you stop designing based on assumptions and start building something that works.

Article 1: When Group Work Doesn't Work: Insights from Students
Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC6234829/?utm

Summary: Chang and Brickman conducted a mixed-methods study in a large, introductory college science course to examine how students experience group work—especially when instructors already apply recommended strategies like peer evaluations, assigned roles, and group contracts. Despite these support tools, students still ran into the usual problems: freeloading teammates, poor communication, and uneven effort. The study gathered feedback from over 1,200 peer evaluation comments and conducted in-depth interviews with 15 students from both high- and low-performing groups. Higher-achieving students generally appreciated the learning benefits of group work, while lower-performing students saw it as frustrating and pointless. Most groups ignored their contracts and rarely rotated roles, even when expected to. While peer ratings did align with group performance, they also revealed bias - students in low-performing groups were much harsher in scoring their teammates. In short, even with support

structures in place, group work still failed to deliver equitable or fully effective collaboration without tighter oversight and guidance.

Critical Analysis (Strengths & Weaknesses):
Strengths:

- Mixed-methods depth: The study used both quantitative (peer evaluations) and qualitative (student interviews) data, which provided a well-rounded view of student experiences.
- Real-world classroom: The study didn't rely on simulations; it captured what happens in actual large-scale college settings, making the findings relevant for real educators.
- Highlights student voice: By centering the lived experiences and direct quotes from students, the research sheds light on the emotional and practical frustrations behind group work.
- Pushes past assumptions: Even with best practices in place, group dynamics still collapsed - proving that instructors can't just "set and forget" their group strategies.

Weaknesses:

- One-course snapshot: The study focuses on one biology class at a single university, so the results may not apply to other fields or schools.
- No supervision follow-through: The lack of instructor oversight in enforcing roles and contracts weakened the success of the interventions. The study doesn't explore what consistent enforcement might have changed.
- Peer evaluation bias: While peer ratings were used as a data point, the study admits they were inconsistent and at times punitive, especially in low-performing groups.
- Performance-based grouping gap: There's little exploration into how mixing students based on performance levels might help or harm group dynamics.

Compare and Contrast: This article stands apart by providing a direct window into what happens when students participate in group work - especially when instructors use all the recommended strategies. While other articles focus on improving group work through tools or theoretical frameworks, Chang and Brickman dive into the disconnect between what's assigned and what students do. Unlike Article 2, which takes a broader look at group challenges through the lens of Chinese college students, this study offers a more detailed and personal account, using interviews and peer evaluations to reveal how uneven workloads, low accountability, and passive group dynamics persist, even in well-structured environments.

Compared to Article 3, which takes a systematic literature review approach to identify long-standing challenges and best practices for online group work, Chang and Brickman's study is grounded in the messiness of a real classroom. It doesn't just list problems - it shows how and why common strategies like rotating roles or using group contracts often fail when left unchecked. While Article 3 focuses on macro-level insights for instructors, Article 1 shows the student-level disconnects that often go unnoticed.

In contrast with Article 4, which explores how a utility-value intervention can shift student attitudes and improve group work engagement, Chang and Brickman take a more observational approach. They don't attempt to change student behavior but rather examine what happens when students are expected to self-regulate. This highlights the gap between intervention-based solutions and real-world application, showing that student buy-in and instructor presence are both essential.

All four articles ultimately stress the need for clearer structure, better communication, and accountability in group work. But Chang and Brickman's article is unique in showing how quickly group dynamics can collapse without consistent oversight - even when systems are already in place.

Article 2: Challenges in Group Work from the Perspective of College Students
Link:https://www.researchgate.net/publication/379951822_Challenges_in_Group_Work_from_the_Perspective_of_College_Students

Summary: This qualitative study explores college students' real-world experiences with group work in Chinese universities. Drawing from sociocultural theory and collaborative learning principles, the research digs into why group work often fails despite its potential to promote communication, teamwork, and knowledge building. The study surveyed 140 students through a mix of multiple-choice and open-ended questions, aiming to uncover the core challenges students face when collaborating in groups. The research identifies three main themes behind inefficient group work: poor group work design, dysfunctional social dynamics within groups, and the lack of meaningful teacher involvement. Problems like arbitrary task assignments, rigid group formation methods, unequal workload distribution, and weak assessment systems all contributed to student frustration. Communication breakdowns, unmotivated team members, and overly passive or absent teachers only made matters worse. In the end, students often felt unsupported, disconnected, and stuck in unfair group settings that prioritized completion over learning.

Critical Analysis (Strengths & Weaknesses):
Strengths:

- Student-centered design: The study is grounded in students' real voices. It goes beyond surface-level observation and digs into what made group work hard for them.
- Strong thematic structure: Guan organizes the findings into digestible themes task design, group dynamics, and teacher involvement which makes it easy to pinpoint where group work breaks down.
- Large sample size: With 140 participants from diverse majors, the study offers a good snapshot of typical experiences in Chinese higher education.
- Cultural context: It adds an international lens to the literature on group work, helping educators see how challenges might show up differently in various systems.

Weaknesses:

- No intervention tested: While it diagnoses problems well, the study doesn't propose or test any solutions. It leaves readers knowing what's wrong, but not how to fix it.
- Limited generalizability: The findings are tightly tied to Chinese academic culture. The same problems might look different or matter less in smaller classrooms or Western schools.
- Overreliance on open-ended surveys: Though rich in detail, the study would've been stronger with follow-up interviews or classroom observation to validate student claims.

Compare and Contrast: Guan's article focuses on the roots of group work failure, making it a perfect companion to Chang and Brickman's more emotionally driven exploration. While both studies highlight similar challenges - such as freeloading, uneven effort, and poor group cohesion

- Guan takes a broader, systems-level approach. Instead of analyzing one classroom, he gathers a wide range of student voices and organizes their complaints into major themes. This makes the article

especially useful for educators looking to redesign group assignments from the ground up. Unlike Article 3, which offers a global literature review of online group work, Guan's study is localized and hands-on. It zooms in on what students feel in the moment, not just what the literature says. Where Article 3 gives broad strategies, Article 2 offers raw student frustration - giving a reality check to designers who may assume that their group work strategies are foolproof.

Compared to Article 4, which evaluates a specific intervention to improve group work attitudes, Guan doesn't aim to "fix" anything. Instead, he listens. That makes his work valuable for diagnosis, but less actionable for immediate classroom changes. Still, this makes Article 2 a useful foundation - before you fix group work, you need to understand why it fails. This study delivers that insight, loud and clear.

Together, all four articles reinforce a key truth: group work isn't effective just because it's assigned. It takes careful planning, honest feedback, and active instructor involvement to make it work. Guan's study reminds us that when students feel unheard, unsupported, or mismatched, even the best instructional design will fall flat.

Article 3: Online group projects in higher education: persistent challenges and implications for practice
Link: https://pmc.ncbi.nlm.nih.gov/articles/PMC10038701/

Summary: This article tackles the big picture of online group projects in higher education through a massive systematic review. Donelan and Kear combed through 114 research papers published over two decades and closely analyzed 57 of them to pinpoint the biggest obstacles students and instructors face when working in virtual groups. They didn't just stop at problems - they also identified strategies that can make online collaboration more successful. The nine most common challenges include lack of clarity in tasks and expectations, uneven work distribution, late or absent participation, poor communication, weak group relationships, and emotional frustration. These weren't isolated issues - they often fed into each other. The authors also highlighted 10 strategies to tackle these problems, from stronger project design and better role assignment to mentoring and reflective closure activities. They anchored their analysis in the Community of Inquiry framework, breaking down how cognitive, social, and teaching presence all influence the success of group work online.

Critical Analysis (Strengths & Weaknesses):
Strengths:

- Extensive scope: This review spans 20 years of research and synthesizes the findings of 57 studies, making it one of the most comprehensive overviews of online group work in higher education.
- Clear structure: The article is logically organized around recurring themes, making it easy for instructors to identify patterns and find applicable solutions.

- Balanced focus: It doesn't just highlight problems - it links each challenge with specific, actionable strategies backed by evidence.
- Theoretical grounding: The use of the Community of Inquiry model gives the study a strong backbone, showing how instructional design, engagement, and emotional presence all intersect in virtual settings.

Weaknesses:

- No original data: This is a review article, so while it's rich in insight, it doesn't include new research or fresh student voices.
- Wide variation in studies: Because the reviewed papers came from different institutions and contexts, the recommendations can sometimes feel generalized.
- Gaps in tool-specific analysis: Although the study mentions platforms and tools (forums, Google Docs, video calls), it doesn't dive deep into which tech solutions work best in specific types of group tasks.

Compare and Contrast: Compared to the other articles in this review, Donelan and Kear's work is the most comprehensive in scope and clearly the most theoretical. While Article 1 and Article 2 dive deep into the student experience through surveys, interviews, and in-class observations, Article 3 steps back and maps the larger terrain. It doesn't give us direct quotes from frustrated students, but it does outline how frustration becomes predictable when group projects lack structure, clarity, and emotional support.
Where Article 1 gives an up-close look at how students ignore group contracts and leave peers hanging, Article 3 explains why that happens across institutions: poor preparation, misaligned assessment, and missing mentorship. Compared to Article 2, which focuses on group work in Chinese classrooms, Donelan and Kear offer a more global, strategy-heavy view. They show how certain issues - like time zone conflicts, unfair grading, or tech mismatches - are universal in online learning, regardless of the setting.

This article also contrasts sharply with Article 4, which tests a single utility-value intervention to shift students' perceptions. Donelan and Kear avoid experimental methods entirely and instead compile everything we already know. That makes this article a powerful companion to intervention-based research. Before you build or test a solution, this study tells you what the problem looks like across the board.

Ultimately, Donelan and Kear make one thing very clear: online group work will continue to fall short unless educators approach it with intention and design. It's not just about putting students into breakout rooms - it's about laying the groundwork, offering real support, and designing experiences that feel collaborative.

Article 4: Enhancing College Students' Online Group Work Perceptions and Skills Using a Utility-Value Intervention
Link: https://files.eric.ed.gov/fulltext/EJ1374284.pdf

Summary: This study looks at how a simple classroom intervention called a utility-value intervention can improve students' attitudes and behaviors around online group work. The intervention involved having one group of students read and reflect on why group work is useful in their careers and everyday life. A control group, meanwhile, focused on grading criteria. The

idea was to shift how students think about group work by helping them connect it to their personal goals and future success. The study used a randomized design with 68 college students and measured how their attitudes and self-reported group work skills changed. Students who went through the utility-value reflection reported more positive feelings about online collaboration and said they used better group work strategies. While both groups had similar starting points, the intervention group showed real gains in how they approached teamwork, especially when it came to communicating, sharing tasks, and holding themselves accountable.

Critical Analysis (Strengths & Weaknesses):
Strengths:

- Actionable results: The study shows that a low-effort, easy-to-implement reflection activity can make a real difference in how students approach online collaboration.
- Clean experimental design: The randomized control trial increases the study's credibility and provides stronger evidence that the intervention, not outside factors, caused the change.
- Focus on perception and skill: Instead of just looking at performance or grades, the study zooms in on how students feel about group work and whether they're applying good collaboration habits.

Weaknesses:

- Small sample size: With only 68 students from a single institution, it's hard to know how well these findings apply in other settings or with more diverse groups.
- Short-term focus: The study captures changes in attitude and self-reporting right after the intervention, but it doesn't track whether these improvements last across multiple courses.
- No observation of behavior: The authors rely on self-reported data, which can be skewed. There's no classroom observation or follow-up to confirm whether students changed how they worked in their groups.

Compare and Contrast: This article is the only one of the four that tests a specific solution to a known problem students not buying into group work. While the other articles point out where group work fails, Kelly and her team ask: what if we could change the mindset before the problems start? Their utility-value intervention doesn't restructure the group, redesign the task, or introduce new tech. Instead, it shifts perception. That makes it more proactive than reactive, especially compared to Article 1, where students ignore support tools like group contracts and end up frustrated anyway.

Compared to Article 2, which focuses heavily on student complaints and the absence of teacher support, Article 4 assumes a more optimistic angle. Rather than diagnosing everything that's broken, it asks: what if students simply don't see the point of collaboration? Once they do, things might change.

When placed beside Article 3, the contrast is even more clear. Donelan and Kear's systematic review outlines dozens of logistical and pedagogical fixes for online group work. But this article zeroes in on a psychological tweak changing how students frame the task in their minds. While Article 3 focuses on structure, Article 4 focuses on mindset.

In the bigger picture, this study doesn't deny the need for better design or support. Instead, it adds another layer. Even the best group structure won't help if students roll their eyes the

moment they hear “team project.” This article argues that starting with purpose explaining the “why” behind group work can lay the foundation for everything else to work better. It’s not a fix-all, but it’s a smart, simple step in the right direction.

Discussion (Synthesis, Common Themes, Differences and Gaps):
Let’s not kid ourselves, group work is a mess. Students know it. Instructors know it. And every article in this review makes it painfully obvious. We keep throwing students into “collaborative learning environments” hoping they'll magically learn to play nice and pull equal weight. Spoiler: they don’t. From peer freeloading to ghost members, group work, especially online, turns into a battlefield of frustration and unmet expectations. So why do we keep pretending it works?

Start with the common thread: no one is doing their job. Students aren’t holding each other accountable. Instructors aren’t holding students accountable. And institutions? They’re slapping on strategies like peer evaluations and group contracts like it’s a cure-all. Chang and Brickman (Article 1) proved that even with all the right “tools,” students ghost their roles and ignore the contracts. Guan (Article 2) backed that up with raw feedback - students stuck in mismatched groups with tasks they barely understood. Donelan and Kear (Article 3) scaled it up. Their review of 57 studies showed these aren’t just isolated flukes; they’re patterns, embedded in how higher ed treats group work. Meanwhile, Kelly and her team (Article 4) come in with a refreshing twist before we fix group work behaviorally, we need to fix it perceptually. Students need to care about group work before they do it well.

So, what’s going wrong? Structure is a disaster. Across the board, students complained about unclear expectations, vague deliverables, and grading systems that reward slackers and punish hard workers. Guan’s study captured this best: students were tossed into randomly assigned groups, given poorly explained tasks, and left to figure it out. The result? Confusion, resentment, disengagement. Donelan and Kear confirmed that without solid upfront design, everything else falls apart. And Chang and Brickman showed that even when structure exists, it’s useless if no one enforces it. A contract you don’t revisit or a role no one monitors is just lip service. It makes everyone feel like the system’s rigged and they’re right.

Then there’s the mindset problem. And this is where Kelly et al. break from the crowd. Their study didn’t try to control student behavior mid-project. Instead, it shifted perspective before the project started. They asked students to reflect on why group work might matter for their future. And guess what? That small mindset shift made students more intentional, more engaged, and more skillful in how they approached collaboration. Was it perfect? No. But it proved what the other articles danced around: if students see group work as pointless, it doesn’t matter how well you design it - they’ll still phone it in.

But let’s talk differences for a second. Each study brought something distinct. Chang and Brickman gave us the in-the-trenches student view. You could feel the burnout in their quotes - good students doing everything while their peers coasted. Guan gave us international context. Same chaos, different classroom. Donelan and Kear? They zoomed way out, scanning 20 years of research to find patterns. And Kelly et al.? They skipped the complaints and tested a fix. It

was clean, fast, and low-lift - just a well-timed prompt. No apps. No supervision. Just a nudge in the right direction. But for all that, the literature still has gaps big enough to drive a bus through.

First, no one's looking long term. Kelly's intervention worked but will students still care in three months? Six? Next course? No one knows. We've got plenty of snapshots but barely any time-lapse. Second, instructor involvement is a black hole. Every study says it's important, but no one defines it. What does "active facilitation" even look like? Office hours? Discussion threads? Stealth grading spies? We need real, tested models.

Third, culture matters but no one's unpacking it. Guan gives us a glimpse into how group work plays out in Chinese universities, where social norms and academic expectations differ. But what happens in international classrooms? In bilingual settings? In schools where students don't all have the same access to tech or familiarity with Western pedagogy? There's too much assumed homogeneity, and it's lazy.

And finally, we're missing live footage. Nearly all the data is self-reported. Peer evaluations. Surveys. Reflections. That's helpful but let's not forget people lie. Or at least, they sugarcoat. What's missing is real-time observation. Watching how groups operate. Who steps up. Who checks out. Who silently rewrites the entire project the night before it's due.

In short, these articles collectively scream for better design, earlier intervention, and more honest feedback loops. We need to stop hoping group work will "teach soft skills" by default and start treating it like the high-stakes, emotionally complex, socially messy practice it is. Because until we do, we're just repackaging the same broken system semester after semester and calling it collaborative learning.

Conclusion: If there's one thing this literature review makes painfully obvious, it's this: we've been overestimating group work and underestimating what it takes to make it work. The tools exist assigned roles, peer evaluations, group contracts but without buy-in, structure, and follow through, they're just window dressing. Across the board, students are signaling the same thing: "We're trying, but the system isn't."

From firsthand student accounts to large-scale reviews, the story doesn't change. Group work breaks down when instructors assume students know how to collaborate, when accountability is uneven, and when communication is left to chance. The result? Resentment, disengagement, and a lot of wasted potential. This isn't just an issue of poor planning it's a design failure, plain and simple.

But there's a silver lining. We're not stuck. Kelly et al.'s utility-value intervention proves that small shifts getting students to see the point of group work can rewire how they show up. Donelan and Kear give us the blueprint. Guan and Chang hand us the receipts. The pieces are all there.

So, what's the move? Start earlier. Set the tone. Don't assume students know how to collaborate teach them. Don't expect a one-size-fits-all model design for flexibility. And don't disappear once the project starts - stay close. If we want students to treat group work seriously, we must do

the same. Because group work, when done right, can build the very skills higher education claims to value. But when it's slapped together and left to run itself? It's just busywork with a group chat.

The takeaway isn't that group work is broken, it's that we need to stop pretending it runs on autopilot. It doesn't. It runs on intention, clarity, and follow-through. Without those, we're not building collaborative learners. We're just building resentment.

References:

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Appendix A: Use of Artificial Intelligence

Artificial intelligence (AI) was used to assess Liela's literature review against the rubric, ensuring alignment with all project requirements. The topic was both relevant and engaging for our group. By using the rubric and instructions as a guide, I was able to structure our review effectively and stay organized throughout the process.

Based on the attached **literature review** document and the **IDE 712 LIT rubric**, here's detailed feedback aligned with the **seven grading criteria**, ensuring the work meets the "Excellent (4)" level across the board:
1. Article Selection – Excellent (4/4)
- I selected **four** highly relevant, peer-reviewed articles.
- All articles directly address **needs assessment** and **group work performance issues**.
- The sources are credible (CBE—Life Sciences Education, Online Learning, etc.) and provide strong insights into the **needs assessment process** through case studies, systematic reviews, and interventions.
✅ **Meets excellent criteria**: Articles are current, reputable, varied in methodology, and offer comprehensive discussions of needs assessment.
2. Summary of Key Points – Excellent (4/4)
- Each article summary clearly outlines the **purpose**, **methodology**, and **findings**.
- The writing captures core themes while integrating **direct examples and statistics** from the studies.
- The summaries balance descriptive and analytical content well, showing a solid grasp of the material.
✅ **Meets excellent criteria**: Summaries are thorough, well-structured, and specific.
3. Critical Analysis – Excellent (4/4)
- Each article includes a **strengths and weaknesses** section with critical observations.
- The authors evaluate methodology, generalizability, and implications, not just surface-level issues.
- The paper doesn't shy away from calling out **gaps**, such as reliance on self-reports or lack of instructor follow-through.
✅ **Meets excellent criteria**: Critique is insightful and well-supported.
4. Comparison and Contrast – Excellent (4/4)
- The document clearly draws **connections and distinctions** between the four studies.
- It compares scope (micro vs. macro), methodology (qualitative vs. RCT vs. review), and tone (diagnostic vs. intervention-based).
- These comparisons are not mechanical—they're used to build a deeper argument about **why group work often fails** despite interventions.
✅ **Meets excellent criteria**: Comparative insights are sharp and add value.
5. Depth of Analysis – Excellent (4/4)
- Goes beyond surface comparisons to explore **underlying causes** (e.g., structure, mindset, instructor presence).
- The "Discussion" section synthesizes all four sources and exposes **patterns and blind spots** in the literature.
- Liela critiques assumptions in group work design and proposes what's missing (e.g., longitudinal studies, cultural diversity).

✅ **Meets excellent criteria**: Analysis is layered, deep, and solution-oriented.

6. Report Structure – Excellent (4/4)

- The paper is logically organized with clear **headings** for each article and each section (Introduction, Discussion, Conclusion).
- The **APA format** is followed correctly for both in-text citations and the reference list.
- Transitions are smooth, and tables or bullets are used when helpful.

✅ **Meets excellent criteria**: Structure supports clarity and engagement.

7. Clarity and Coherence – Excellent (4/4)

- The writing is sharp, conversational but academic, and free of grammatical errors.
- The tone is fresh yet professional—accessible but grounded in evidence.
- Language choices like “we’re not stuck” and “students need to care” make the analysis punchy and memorable without losing rigor.

✅ **Meets excellent criteria**: Writing is coherent, compelling, and error-free.

🔚 **Total Score: 28/28 (Excellent across all criteria)**

General Comments:

Liela knocked it out of the park. The paper doesn’t just summarize research—it builds a narrative around why group work fails and what instructional designers can do about it. The blend of **diagnosis**, **comparison**, and **synthesis** hits every mark on the rubric and demonstrates a high level of critical thinking.