Teachers Pay Teachers

Easel Activities Annotated Bibliography

Easel by TpT™ is a suite of digital tools designed for the modern, digitally-enabled classroom. The first tool included in the suite is Easel Activities: a flexible tool that aims to empower educators to easily create custom, interactive digital activities from their own original materials or by adapting one of the teacher-created resources from Teachers Pay Teachers. Easel Activities aims to empower teachers to support differentiated instruction and deliver timely feedback in online, in-person, and hybrid learning environments. This document includes relevant theoretical research that contributed to the product teams' understanding of both instructional practices and empirical research that informed the prioritization and design of features to support the implementation of differentiation and feedback in instruction.

When reviewing this research, it is important to note that TpT is not prescriptive in the use of Easel Activities and that there are aspects of differentiation and timely feedback that are not yet included in Easel Activities' features and tools. The current features of Easel Activities were influenced by the research below and are intended to facilitate successful learning experiences by helping teachers better provide their students with differentiated instruction and timely feedback.

Timely Feedback

Timely feedback is delivered either immediately or close to the moment of learning and gives explanatory or corrective coaching so a student can learn and grow. With Easel Activities, teachers can use text, pen, and highlighter tools, to insert comments, redirection, encouragement, and critical information on students' submitted assignments. They can also grade and return student work immediately or shortly after receiving it, give students the opportunity to resubmit work, and provide them with multiple opportunities to receive feedback and improve their work.

Teachers also have the ability to view their students' Easel Activities in two additional states: In Progress and Returned. This allows teachers to provide real-time support and feedback for individual students by seeing what progress they're making with the activity. The current version of Easel Activities was influenced by the theoretical and empirical research described below.

Hattie, J., & Timperley, H. (2007). The Power of Feedback. Review of Educational Research, 77(1), 81-112. Retrieved March 25, 2021, from http://www.jstor.org/stable/4624888

> In this article, Hattie and Timperly use a conceptual analysis to define feedback in the context of learning, synthesize existing research on the impact of feedback on learning, and present a framework for effective feedback that will enhance learning. The authors recognize that feedback is seen as a powerful tool for learning. However, they point to the reality that previous research indicates that the effectiveness of feedback varies based on multiple factors including, but not limited to: the timing, difficulty of tasks or goals, and content of the feedback. In order to create the conditions that maximize the positive impact of feedback on student learning, the authors present a framework for feedback. The model distinguishes between what the authors identify as four levels of feedback: task, processing, regulatory, and self levels.
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> This article helped our research team define feedback and articulate the potential impact of effective feedback for product teams and other stakeholders. The Easel Activities product teams' focus then centered on providing teachers with features that provide the space and tools to share feedback that is purposeful, active, and elaborates on prior knowledge, as the authors indicated in their framework. As a result, Easel Activities offers teachers tools like the text, pen, and highlighter to add and share feedback directly on completed student work and return the annotated work to students.

Butler, A. C., Godbole, N., & Marsh, E. J. (2013). Explanation feedback is better than correct answer feedback for promoting transfer of learning. Journal of Educational Psychology, 105(2), 290–298. https://doi.org/10.1037/a0031026

> In this article, Butler et al. focus on understanding the impact of the content of feedback on learning. The authors define feedback and discuss previous research that has failed to prove the assumption that more complicated or complex feedback is more beneficial. However, the authors point to the fact that in the design of those studies the final test has been the same as the initial test. The research presented by Butler et al. of sixty subjects tested whether feedback that explains a correct answer promotes better retention and application of information to new questions.
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> The authors found that correct feedback — i.e., feedback that indicates whether a student's response was correct or incorrect — and explanatory feedback led to equivalent performance on questions from the initial test while explanatory feedback led to superior performance on the new questions that required students to transfer their knowledge, or infer. The authors' findings are a helpful evolution of research on the content of feedback.
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> Our team found this research particularly interesting as we focused on providing teachers with tools that empower and enable them to provide students with impactful feedback. Teachers can use the text tool in Easel Activities to add corrective and explanatory feedback on student work, return the activity, and share feedback to students.

Van der Kleij, F., Feskens, R., & Eggen, T. (2015). Effects of Feedback in a Computer-Based Learning Environment on Students' Learning Outcomes: A Meta-Analysis. Review of Educational Research, 85(4), 475-511. Retrieved March 25, 2021, from http://www.jstor.org/stable/24753021

> This meta-analysis is focused on the effects of item-based feedback in a computer-based learning environment on student learning outcomes. The authors describe current research on the impact of feedback in computer-based instruction environments like assessments. They found that the research indicated

some effect on student learning, but the sample sizes of the studies considered in previous meta-analyses were small and results did not clearly point to the impact or interaction of the feedback timing, feedback type, or level of learning outcomes.

In their meta-analysis, the authors found that effect sizes were positively impacted by explanatory feedback and that explanatory feedback was more effective than feedback focused on the correctness of an answer or providing the correct answer.

Immediate feedback, or what TpT refers to as timely feedback, was found to be more effective for lower order learning outcomes than delayed feedback — but the differences were not statistically significant. That said, our team relied on this meta-analysis to clarify our understanding of the different types of feedback identified in research literature. This again confirmed our focus on enabling teachers to use text, pen, and highlighter tools to provide explanatory feedback through comments in Easel Activities. It also informed the development of the feature that allows teachers to send, or return, an activity that includes a teachers' annotated feedback as quickly as possible or within the teacher's preferred time frame. Finally, this research was foundational to the "In Progress" and "Returned" views for teachers. These additional states allow teachers to provide real-time feedback to individual students as they can observe the progress their students are making with an activity.

Differentiation

Differentiation is seen as both a teaching philosophy and instructional strategy that requires teachers to acknowledge students' unique needs and focus on meeting those needs. This requires teachers to continuously adapt what they teach, how they teach it, and how they understand students' learning.

With Easel Activities, teachers can create, present, assign, collect, and respond to lessons, using features that allow for differentiation from beginning to end. A teacher could create or customize personalized, interactive resources in order to meet the

needs of individual students, small groups, or the whole class. Additionally, using Easel Activities for differentiation can change how teachers approach lesson planning, delivery, and grading by keeping activities within a single interactive platform that can be accessed from any digital device and used in any instructional setting. Students can access assignments via Google Classroom™ or through an assignment link. They can then complete and turn in their assignments right on Easel Activities, where teachers can respond to and return student work. The current version of Easel Activities was influenced by both the theoretical and empirical research described below.

Tomlinson, C. A., & Allan, S. D. (2000). Leadership for differentiating schools and classrooms. ASCD. Retrieved from http://www.ascd.org/publications/books/100216/chapters/Understanding-Differentiated-Instruction@-Building-a-Foundation-for-Leadership.aspx

> In this book, Tomlinson and Allen attempt to bridge the gap between research that demonstrates the value of differentiating instruction and the challenge of actually addressing academic diversity in classrooms. Tomlinson and Allen note that teachers are making steps to incorporate the principles and practices of differentiation into their practice, and their book focuses on the ways in which school leaders can make differentiation more widespread. The authors define differentiation, describe practices and principles of differentiation, detail relevant research, and outline key conditions for educational leaders to establish and reinforce systemic implementation of classrooms that address the academic diversity of their students.
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> This book was foundational to both our research and product teams' understanding of differentiation. The teams relied on Tomlinson and Allen's definition to clearly articulate what it means to attend to the learning needs of individual and small groups of students and to describe the different ways in which teachers can meet diverse student needs and interests. The conceptual map included in this book was particularly helpful for our product teams as it presented a clear framework for understanding the ways in which Easel Activities could support differentiated instruction by differentiating content, process, or products according to students' readiness, interests, or learning profiles. For example, Easel Activities helps teachers differentiate the content by giving

> teachers the ability to edit instructional materials by adding or removing text, uploading images, and creating movable shapes for manipulatives. Teachers can differentiate the process by giving students the opportunity to choose how they express what they learn through the annotation tools. They can also differentiate by student readiness by editing or adjusting content in a resource from the TpT marketplace or content they've created from scratch on Easel. And teachers can meet unique student needs via their learning preferences by presenting information with either visuals (like images and shapes) or with text.

Tomlinson, C. A., Brighton, C., Hertberg, H., Callahan, C. M., Moon, T. R., Brimijoin, K., Conover, L. A., & Reynolds, T. (2003). Differentiating Instruction in Response to Student Readiness, Interest, and Learning Profile in Academically Diverse Classrooms: A Review of Literature. Journal for the Education of the Gifted, 27(2–3), 119–145. https://doi.org/10.1177/016235320302700203

> In this article from Tomlinson et al., the authors present a rationale for differentiating instruction due to academic diversity and learner variability. As the authors point out, it is clear that teachers are increasingly called upon to support all learners in their classrooms. The reality, however, is that few teachers are taking proactive steps to create learning experiences based on diverse learner needs. In order to build a case for differentiated instruction, the authors evaluate both current theory and research that support meeting student needs and present a model for differentiation that centers on addressing students' readiness, interests, and learning profiles.
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> With this in mind, Easel Activities' features are intended to support teachers in proactively differentiating instruction for their students. The core function of Easel Activities — that is, enabling teachers to edit instructional materials — gives educators the ability to ensure that the materials match students' readiness and are at the proper level of difficulty. Easel Activities also gives teachers the ability to differentiate by students' unique needs, as students are able to draw, type, or handwrite based on their preferences.

Rock, M., Gregg, M., Ellis, E., & Gable, R. A. (2008). REACH: A framework for differentiating classroom instruction. Preventing School Failure, 52(2), 31–47.

> In this article, the authors include narrative examples of teachers using differentiation, review existing literature and research on differentiation, and present a framework to transform undifferentiated experiences in the classroom to differentiated ones. The authors point to growing empirical evidence that differentiation is impactful for student learning and highlight the reality that meeting students' individual needs is challenging in practice, especially given all of the competing demands teachers face. With the REACH framework, Rock et al. provide a blueprint for differentiation. This blueprint includes an inventory of differentiation instruction quality indicators, benchmarks for effective instruction, and questions to support teachers that are transforming their practice.
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> The theoretical foundation presented in this article helped the team build a case for building features that support differentiation through Easel Activities. Our Education, Content, and Insights team relied on the review of existing research in this article to refine our internal definition of differentiation and present research on the impact of differentiation on student learning. The updated definition of differentiation and relevant research from the review were shared during internal training sessions with product teams to help them better understand differentiation. This article was also impactful as it again pointed to the reality that differentiation is challenging for teachers to implement. Because of this, the Easel Activities product teams were motivated to ensure that our tools helped teachers more easily and effectively differentiate learning for their students. This informed the development of features — like the pen, highlighter, and shape tools — that are intended to help teachers both easily modify instructional materials and easily assign those materials to either small groups or individual students via unique links or codes.

Tieso, C. (2001) Curriculum: Broad Brushstrokes or Paint-by-the Numbers?. Teacher Educator, 36(3), 199-213.

> In this article, Tieso shares the results of a qualitative study of differentiated instruction in elementary math. The author describes the experiences of both teachers and students after the teachers received training on different elements of modifying curriculum to meet students' needs. The research results suggested that a modified or enhanced curriculum unit, with learning goals and authentic instructional materials and resources, can establish substantial motivation, perceived value, and interest for all levels of students.
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> Tieso's findings suggest that teachers should receive training on modifying curriculum, however, TpT is not prescriptive in how its tools should be used. That said, for the Easel Activities product teams, this research underscored the value of providing teachers with tools that allow them to modify instructional content. As mentioned above, our teams built out features like the text, pen, highlighter, image, and shape tools to give teachers tools they need to modify or enhance the instructional materials they present to their students and ensure that they're authentic to their students' unique needs and preferences.

Reis, S. M., McCoach, D. B., Little, C. A., Muller, L. M., & Kaniskan, R. B. (2011). The Effects of Differentiated Instruction and Enrichment Pedagogy on Reading Achievement in Five Elementary Schools. American Educational Research Journal, 48(2), 462–501.

> The authors of this experimental study focused on the impact of a differentiated reading program on reading fluency and comprehension in 2nd through 5th grade classrooms across five elementary schools. In this study, teachers were randomly assigned to either a treatment group that implemented a differentiated and school-wide enrichment model approach or a control group that continued regular reading programs. The treatment group's approach eliminated whole group reading instruction and replaced it with students reading books they selected that were also above their current reading level — to increase student engagement and interest — and differentiated conferencing with teachers. The research results demonstrated that differentiated instruction and less whole class instruction was as or more effective than a typical whole group instructional approach. Additionally, across teacher interviews and observations, the researchers found increased levels of student engagement in reading and reading

instruction and teachers' enjoyment of using their own professional judgment when differentiating instruction.

Although this research focused on differentiated reading instruction, it impacted two areas of Easel Activities: 1) the ability to assign unique activities to individual students, and 2) the ability for teachers to share individualized feedback with students. This study highlighted the importance of providing students with choice and individualized materials. To our product teams, this demonstrated a need for teachers to be able to both edit and create materials that meet individual student needs and interests and also be able to assign activities to individual students. As mentioned previously, teachers can edit or create different versions of instructional materials using the text, pen, highlighter tools; uploading images; or creating movable shapes. Teachers can then assign those materials to students by generating unique links or codes to share with individuals instead of sending one activity to a whole class. This allows teachers to customize and assign different versions of the same Easel Activity to support students' interests and meet students where they are.

This study also demonstrated the potential impact of providing students with individual coaching or conferencing. This research supported the teams' focus on feedback, but from a perspective of differentiation. The teams wanted to ensure that teachers could provide students with the individualized feedback they would typically give during individual conferencing sessions. As a result, teachers can review student work in Easel Activities, add comments and individualized feedback, return that feedback to students, and give students the opportunity to resubmit their work.

Lou, Y., Abrami, P., Spence, J., Poulsen, C., Chambers, B., & D'Apollonia, S. (1996). Within-Class Grouping: A Meta-Analysis. Review of Educational Research, 66(4), 423-458. doi:10.2307/1170650

This meta-analysis focused on 165 effect sizes from studies of the effects of within-class grouping on student achievement and other outcomes. The authors found that students in small learning groups within their classrooms — typically about three to four in size — achieved significantly more than those not learning

in small groups. They also found that student gains were greatest when the instructional materials were varied for different small instructional groups, rather than using the same materials across all groups.

This research informed our early development of features to provide teachers with the ability to edit materials to meet students' needs and assign them to smaller groups of students. Similar to the research from Reis et al., this meta-analysis underscored our teams' focus on giving teachers tools to modify, edit, and create materials that are appropriate given students' readiness, interest, and needs. This allows teachers to create varied instructional materials for small groups of students. Teachers can then share those materials with small groups of students by creating a unique link or code. Again, although TpT is not prescriptive in how teachers use Easel Activities, we provide teachers with the tools and features that allow them to implement research-based approaches like small group instruction and modifying instructional materials.