Technological Integration in Management Curriculum

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Abstract. Curriculum is the programme of instruction students are exposed to in the teaching and learning process. It is all the teaching and learning activities teachers and students are engaged in a formal school system from the beginning of the course of study or training to the end. For effective utilization of the curriculum there is the need for proper classroom management which involves students, subject matter, learning materials and learning environment in an orderly manner. However, the educational system is witnessing digital transformation driven by technological advancement which seems promising. To keep pace with this novel phenomenon and benefit from the usage, management education needs to equip teachers with the knowledge and skills necessary to leverage this technological advancement through its integration in curriculum. This paper therefore examines the technology to be deployed to the classroom for effective management of students, its benefits, potential approaches and considerations for successful implementation.

Keywords: Technology, Educational Technology, Integration, Classroom Management, Curriculum.

1. Introduction

Classroom management is a complicated process in which teachers deal with unexpected situations and a changing teaching and learning environment to maximize students' learning achievement. Management competency requires teachers to have knowledge and skills in effective management of classroom, support learners during learning process, as well as identify and interpret situations which could come up in the classroom. Beside this, they need to encourage students to participate in learning activities, solve learners' problems, improve collaborative relations in the classroom, motivate students to learn, prevent and manage undesirable behaviours (Glock &

Kleen, 2019; Hochweber et al., 2014; Hofman, 2022; Korpershoek et al., 2016; van Driel et al., 2022). Nevertheless, to achieve effective classroom management there is need for technology driven environment for the reason that "technology-enhanced learning environment yields benefit in changing pedagogical styles, applying new teaching strategies, accessing useful information sources, organizing and managing the learning environment" (Casanova et al., 2020; Fayez et al., 2021; Mei and May, 2018); (Nguyen et al., 2022).

1.1 Classroom Management

Hornby (2014) defines management as "the act or skill of dealing with people or situations in a successful way, such as classroom management". Classroom management are strategies used by teachers in dealing with students in teaching-learning process in successful manner. "It involves a complex system, made up of many parts which includes the classroom environment, teacher-student relations, behavioral expectations and consequences, as well as daily routines "(Antoine, Nu-man & Reyes-Aceytuno, 2024). However, demonstrating effective approaches in classroom management allows teachers to decrease the behaviors that block learning for both single students and groups of students, while increasing the behaviors that enrich learning. Effective teachers exhibit strong classroom management skills. Less effective teachers have disorganized classrooms, loaded with students who are distracted, off task, or not paying attention to the lesson" (Antoine, Nu-man & Reyes-Aceytuno, 2024). Moreover, instruction and student learning are impacted when there is no classroom management in place. Chaos becomes the norm when classrooms do not have established behavior expectations, are disorganized, or when students are allowed to be discourteous. Nevertheless, "discipline, classroom management, and engagement

strategies are critical in developing a risk-free environment where students are engaged in learning" (Rischer, 2009, p. 47). Educators who possess a sound classroom management system allow for a learning environment where both teachers and students can thrive. Research conducted over 30 years indicates that classroom management is a key element in successful teaching (Marzano, 2003).

1.2 Technology

Technology is the application of conceptual knowledge for achieving practical goals, especially in a reproducible way (Skolnikoff, (1993) through hardware (machines) and software; while educational technology (commonly abbreviated as edutech, or edtech) is the combined use of computer hardware, software, and educational theory and practice to facilitate learning *(*Robinson, Molenda, & Rezabek, 2015; Mastellos et al, 2018). There are a number of ways teachers can use educational technology in the classroom to facilitate learning and one of which is through classroom management.

2. How Technology Supports Classroom Management

With the ever-growing list of teacher responsibilities, the use of technology to support classroom management can help relieve some stress of having to juggle all the everyday tasks of teaching. Technology provides teachers the opportunity to track, monitor, and engage students in their learning effortlessly. Ultimately, utilizing technology makes tasks much easier as well as helps educators efficiently manage their classrooms (Colao, 2012). In addition, technology provides a better platform for teachers to celebrate students' accomplishments, reward them for their positive behaviour, and communicate with the parents easier (Antoine, Nu-man & Reyes-Aceytuno, 2024).

Nevertheless, technology enables teachers to access more of the world than ever, so modifying the lesson delivery and how these tools are approached is essential. Making lesson plans to use different applications depends on what is the objective. Technology can seem like a disrupter, or a means of driving a lesson based on how the tools are used. Having tight transitions is a strategy which establishes transitional routines for students to learn. Students adapt quickly to repeated instances without considerable teacher direction. For example, a timer found on the Class123 Timer website tool can be projected on the wall or a screen to alert the students of the time parameters of each assignment and how much time is left to the next transition. This strategy

helps to increase instructional time by decreasing the potential chaos and lag time often associated with changes between activities. It also keeps the students alert and engaged in the lesson. Whichever form of management tool a teacher incorporates in class, it is wise to have several tools and plans ready in case the current one is not working (Antoine, Nu-man & Reyes-Aceytuno, 2024).

3. Technology in Classroom Management

There are many different tools and strategies that can be utilized through several digital tools to help with classroom management. These Educational technology tools can help with classroom management by structuring activities for enhancing classroom routines, sharing information with parents regarding students' behaviour, and providing digitally enhanced strategies to help maintain positive learning environments for all students which are discussed as follows (Antoine, Nu-man & Reyes-Aceytuno, 2024):

3.1 Class Dojo

Class Dojo is one of the technology tools that aid teachers in different aspects of classroom management. It helps the teacher with the collection of student data collected and creates weekly or monthly reports. As a result, it allows the teacher to set up positive reward systems. Class Dojo was developed through consultations with teachers and parents in 2011 by a former management consultant and gamer. Class Dojo grants teachers the ability to share information with students and parents in real time with over 30 languages in which it can translate. It is a versatile app which is accessible by computer, tablet, and smartphone. Class Dojo has eight different tools within the toolkit, as described below:

Direction: Direction is a tool the teacher can use to display instructions for students electronically.
Music: Music can be played as background music to enhance the class environment.
Think Pair Share: Class Dojo allows users to create a digital display of prompts for students to turn and talk with a partner using the Think Pair Share strategy.
Random: Random is random student generator that helps the teacher select a student for checking for understanding or to volunteer.
Today: The today feature functions as a display for daily messages and bulletins to students.

3.2 GroupMaker

GroupMaker is another technology tool that has multiple features to improve classroom management

and increase productive student collaboration by listing all group members. GroupMaker randomly assigns students to pairs, or groups of threes, fours, or more. Currently, it is only available for iPhone, iPad, and iTouch. The primary focus of the app is to create and manage various student groups. GroupMaker has a feature for student pictures that could assist substitutes in identifying all students who need to be in groups. Similar to Class Dojo, other features of GroupMaker are:

Timer: The timer feature embedded to help with transitions, group work, independent work, etc. Just like utilizing a timer in the classroom, this application allows the teacher to project the timer on the whiteboard and create student groups. This allows a visual for the students while they work on the task at hand. It can provide structure and feedback to students.

Noise Meter: A Noise Meter monitors class noise levels with visual displays to help students self-manage. This feature monitors student noise level and reminds the class if their volume is appropriate and conducive to the learning environment. It can provide structure and feedback to students.

3.3 Class123

Class123 is a free downloadable classroom management medium with several classroom tools and communication resources. Class123 is available on both a mobile app and on a web-based app on the desktop. This classroom management medium aids with the daily routines that teachers face while involving parents in their child's participation in the classroom. In addition, Class123 creates the atmosphere classroom management is a more entertaining experience as teachers build their confidence in the classroom setting. The application is colourful and laid out with avatars representing the students. It provides the teacher opportunity to give instant feedback from a mobile device or computer to students. It also has two other features: 'Lucky Draw' and 'Timer.' The 'Lucky Draw' feature will randomly select any number of students, set by the teacher, revealed on the whiteboard (if teacher allows it). The 'Timer' has a handy countdown and stopwatch resource that can time sections of the lesson or tasks. The animations for these features are amusingly appealing and supplemented by a notes section at the end. Similar to other learning management system (LMS), other features of Class123 are:

Digital Chalkboard: This digital board can be used to display information and work through problems which can be saved and reused by teachers or students. It can also provide structure and feedback to students.

Bell: The bell is a feature for a teacher to use to call the class to order.

Goal Setting: This item allows for teachers to place goals within the lesson for students to work towards to achieve.

Feedback: Teachers can receive feedback from parents and student and send feedback to parents and students.

Customization: Class123 allows students the ability to customize their app by allowing them to customize the interface and settings to match their specific preference.

3.4 Skolera school management software

Skolera smart classroom management system through its software provides schools with a platform on which teachers can upload diagrams, materials, notes, and resources; share and attach content and files with their students as well as videos of themselves explaining the lessons. Using it, students can also access notes, slides, and videos from a learning management system (LMS) equipped with cloud storage. Assessment and assignments can also be completed on the system. The class is where they ask questions, get a more complete understanding, and put the new knowledge and skills into practice. This also facilitates the self-directed learning approach of experience first and foremost, invented by progressive education movement and John Dewey. Self-directed learning is one of the best advised effective classroom management strategies for new teachers, which motivates students to lead the way to their own futures. This approach can be used effectively in classroom management by incorporating it in several ways starting from lesson plans design to using classroom management technologies, learning management system (LMS), gamification, and online resources (Nasr, 2024).

3D simulations and videos

3D simulations and videos can be used be used in effective learning and thus ensure an orderly classroom. Teachers top priority is ensuring that students reach their educational goals. Since students often learn in many different ways, incorporating new modalities in the classroom can help maximize learning opportunities and ensure the success of each student (Interplay Learning, 2023).

3.5 Web-based apps.

There are some promising classroom management web-based apps available to teachers that they can used in effectively managing their classrooms. "Keeping students' attention, guiding them through lessons, and making sure the classroom environment is respectful, supportive, and productive takes

constant effort and sucks a lot of time and energy out of the teachers' day. However, these great classroom management tools can be teachers' time-saving and energy-freeing sidekicks, helping them instantly deliver and assess learning, create seating charts, improve students' behaviour, and set timed tasks to make the classroom run like a well-oiled machine. They can also help the teacher manage class discussion, even asynchronously, and get a clearer picture of participation (Common sense education, 2024) which include the following:

Class Charts: Class Charts is a seating chart system which makes managing classroom behaviour simple.
Bottom Line: An easy-to-use, engaging tool for managing student behavior and participation, especially if the teacher focus on the positive.
Grades: K–6

ClassDojo: ClassDojo is an exemplar bridge between home and school which also aids learning.
Bottom Line: When used thoughtfully, ClassDojo can help adults support students' growth through goal-setting, reflection and celebration.
Grades: K–6

Additio: Additio is a flexible, feature-filled learning management system (LMS) which facilitates focus on whole child.
Bottom Line: Being able to access lots of customizable data, group students beyond classes, and communicate easily with families gives teachers a clear picture of each student that they can share.
Grades: K–12

Bloomz: Bloomz is an effective district-wide communication platform for school and home.
Bottom Line: This multifunctional platform provides many ways for districts, administrators, teachers, families, and students to connect and offers a ton of features—perhaps even too many, for some.
Grades: K–12

Bouncy Balls: Bouncy Balls measure classroom sound levels with simple fun themes.
Bottom Line: This is a fun tool that offers a silly but possibly effective solution to managing noise levels.
Grades: K–12

sskick: sskick assign, assist, and assess with real-time, interactive classroom.
Bottom Line: It is a great option for teachers who want to go paperless, provide specific feedback, and encourage collaboration among students in virtual or 1-to-1 classrooms.
Grades: K–12

Equity Maps - Chart Dialogue: Equity Maps-Chart Dialogue is a real-time participation tracker shows who is talking in the classroom.

Bottom Line: If used delicately, this is a potentially eye-opening tool that can help teachers modify discussions.
Grades: K–12

FreshGrade Connect: FreshGrade Connect is a multimedia digital portfolios which connect students, teachers, and parents.
Bottom Line: It is designed with student learning in mind, and teachers can encourage students to submit quality content and engage in reflective feedback.
Grades: K–12

LessonUp: LessonUp is a flexible interactive presentation tool which engages kids at school and home.
Bottom Line: It is great for creating customized and differentiated lessons, but it might not be accessible for every student.
Grades: K–12

Nearpod: Nearpod engage and assess students with media, videos, and interactive slides.
Bottom Line: The teacher-or student-paced learning can improve 1-to-1 environments and the learning activities are top notch.
Grades: K–12

Otus: Otus is free learning management system (LMS) which feels rich in offering data-driven differentiated instruction.
Bottom Line: This teacher-created site solves more problems than it causes, but it will take some up-front professional development to take full advantage.
Grades: K–12

Seesaw: Seesaw is a versatile digital portfolio which appeals to teachers, students, and parents.
Bottom Line: A powerful multimedia learning and communication tool that demonstrates student progress over time.
Grades: K–12

Time Timer: Time Timer manage and conceptualize time with great visuals, but with a few bugs.
Bottom Line: A decent option for visual timer needs, being sufficiently customizable, but there are still a few bugs and room for improvement.
Grades: 1–12

Google Classroom: Google Classroom is an exceptional, simple communication, collaboration, and document sharing.
Bottom Line: Though it does not have it all, it is an incredible tool for managing and organizing learning.
Grades: 3–12

ClassroomQ: ClassroomQ minimize classroom distractions with virtual hand-raising tool.
Bottom Line: An easy way to gauge understanding, adjust instruction, and provide student support in real time.
Grades: 3–12

Classwork Zoom: Classwork Zoom keep tabs on student workflow with handy Google extension.
Bottom Line: Classwork Zoom can be a great tool for any teacher who frequently assigns Google documents.
Grades: 3–12

Along: Along messaging tool helps classrooms forge and foster meaningful dialogue.
Bottom Line: This tool opens up avenues for conversation and relationship building between teachers and students.
Grades: 4–12

Classcraft: Classcraft motivate students and monitor behaviour with clever gamified platform.
Bottom Line: When used thoughtfully, this classroom gamification can encourage positive behaviour and develop essential collaboration skills.
Grades: 4–12

ClassFlow: Classflow is a robust lesson creation and delivery tool which aids assessment.
Bottom Line: With some creativity, this interactive platform can support instruction and assessment.
Grades: 4–12

Parlay: Parlay is a comprehensive discussion platform which develops critical-thinking skills.
Bottom Line: A great tool in any subject or topic for teachers looking to make discussion a central part of their classroom.
Grades: 5–12

Schoology: Schoology is a robust learning management tool which comes with challenges.
Bottom Line: With patience and creativity, it can evolve into a rich learning management system.
Grades: 3–12

Showbie: Showbie is a flexible desktop, mobile assignment tool works best with pro features.
Bottom Line: A flexible way to collect student assignments and offer written and verbal feedback, especially with the premium features.
Grades: 5–12

Peergrade: Peergrade is a feedback tool with great rubrics which might work best for older students.
Bottom Line: With appropriate teacher support, this could be a powerful way to help teach students about giving and receiving critical feedback.
Grades: 6–12

Credly: Credly is a great how-to content, flexible features boost digital badge tool.
Bottom Line: A useful tool for issuing digital badges.
Grades: 7–12

GradeCraft: GradeCraft use a game-inspired classroom structure to offer some autonomy and flexibility.
Bottom Line: GradeCraft has the potential to revolutionize the teacher's classroom by inspiring students to take control of their own learning.

Grades: 9–12
Notion: Notion is a cool, customizable tool which turns notebooks into workspaces.
Bottom Line: With some scaffolding, this could be a great way to capture, organize, and share information without juggling a class site, notebook, to-do list, and more.
Grades: 9–12

Discord: Discord is a social hub which offers a novel but tricky spin on classroom communication.
Bottom Line: With some creativity and moderation, this student-loved messaging alternative to Google and Microsoft could be a key extension of the classroom.
Grades: 10–12

My Study Life - School Planner: My Study Life-School Planner is an organizational tool makes managing complex schedules a cinch.
Bottom Line: If teachers can make it a habit by the use of this tool; students will love staying on top of assignments and test dates with this handy, pocket-sized "personal assistant."
Grades: 10–12

4. Importance of Technology in Classroom Management

Classroom management technologies are not only changing the way education is, but they are also allowing teachers now to go beyond merely making sure the learning objectives are fulfilled. They are letting educators open up a new world of innovation, positive personality and behaviour development, and success to their students. Smart classroom management allows the teachers to empower their students and prove that not only can technology be a tool for learning but also for making things happen. Now they are free to share their views with not only their peers but with the whole world with a single click of a button. Moreover, it can expand the limits of teaching skills, so that along with successfully managing the class, teachers can also allow their students to do, not just think and learn. Technology in classroom has many perks. It allows the teacher to learn more every day about students and explore all the possible it offers for better learning, organization, pedagogy, and better student engagement. However, here are four advantages of using technology in classroom management (Nasr, 2024):

4.1 Classroom management technologies allow for better control

Teachers have a whole lot better classroom control with technology on their side. Controlling the

classroom is one of the most essential teaching skills of a good teacher. It can be quite aggravating having to fear losing grip on the class. Classroom management technologies, e.g., Skolera school management software, can help with that. With effective classroom management and using the right tech, students can stay focused on their lesson, engaged with the knowledge they are acquiring, and organized as well. In conjunction, with competing and dynamic behaviour management techniques, teachers are able to maximize classroom time by minimizing any possible classroom disruption or student misbehavior mid-class.

4.2 The best behaviour management strategies

Classroom management technologies also allow students more independence. Through shared learning documents, videos, audios, and interactive images, they can be free to learn independently. Classroom management technologies open up the possibility for students to choose their own kind of learning. Having this right makes them have more ownership and responsibility for what the knowledge they are acquiring every day. In addition, with classroom management software system Skolera, teachers can more fully use flipped classrooms strategy, which involves students getting a grasp of the material before class by watching the presentation and preparing any questions they may have.

4.3 Classroom management technologies: better engagement

Classroom management technologies are a great way to creates fun and come up with interactive, engaging lessons for your students. Skolera has recognized the importance of all those aspects and has also created a feature called 'zones' through which students, teachers, and parents can take part in extracurricular activities. A Chinese proverb says:
"If you tell me, I'll forget; if you show me, I may remember; if you involve me, I'll understand"

Nevertheless, in line with this statement it is pertinent to posit that gamification is one of the most exciting tools classroom management technologies offer. Gamification drives challenge and motivation, especially if it is part of the subject lesson plan. Advanced classroom management software systems get the dull, monotonous atmosphere out of the class and colour it with the excitement of playing learning games. Gamification in itself is an old concept. It is being used for ages now. However, what is really new about it is that it is considered one of the behaviour management strategies that can be integrated into

technology. Moreover, gamification is a learning approach used to motivate students through learning games in order to reach the highest levels of engagement and participation within the classroom, or outside if the teacher is using classroom management software. This approach can even affect students' behaviour; it makes them more open to learn and excited to get back to the teacher and colleagues to share the feedback with them. In addition, it allows them to also relate to what they actually want and how they think! And it is one of the very good classroom discipline ideas for teachers as well. To make gamification more related to the learning objectives teachers use Skolera's badges and Hall of Fame, which allows them to motivate students by placing up to five students in the list. No criteria are set for the Hall of Fame, but the choice of students is left to the teacher's discretion. Also, for every homework or task a student makes, points are added. The following are seven advantages of Classroom Management Technologies Gamification:

- Motivating students to be a leading part of the self-directed learning model.
- Allowing learners, a safe, virtual environment for trial, where they can fail and fail again before succeeding without a real negative outcome.
- Although it is only virtual, it is also connected to the learning objectives of the class: practical.
- Drives them to work harder in order to see the rewards of this learning activity.
- Giving students the opportunity to learn with more freedom.
- Class is just way much more fun!
- Learning that technology is essentially used not just for fun but for learning and experience.

4.4 Make Classroom Management, Grading, and Revision Easier

Teachers' daily routine is never ending. They have a lot of work to do: revision, correction, grading, organization, etc. With technology, teachers can use classroom management software to make that work a little lighter. Using Skolera, students will immediately know their grades and the teacher's comments either through their mobile phones or computers. Moreover, this gives the teachers much needed time to direct efforts more fully towards coming up with better classroom management ideas and improving the educational material and teaching strategies as well as student performance.

5. Challenges in Integration of Technology into Management Curriculum

Despite its myriad benefits, integrating technology into management curriculum poses several challenges such as:

Lack of knowledge: Most teachers lack knowledge, skills and experience in handling educational technology tools in classroom management due to the dynamic nature and the continuous production of numerous novel educational management technological tools.

Resistance to change: Educational institutions and teachers may find it difficult to cope with technological innovations in classroom management practice which may lead to resistance in adopting new technologies, impede integration effort requiring cultural shifts and professional development initiatives.

Curriculum Relevance: Rapid technological advancements necessitate frequent curriculum updates to ensure alignment with industry needs and emerging trends, posing challenges for curriculum design and implementation.

Cost of educational technology tools: The cost of educational technology management tools may deter teachers from accessing and effective usage of these technological tools in classroom management.

Maintenance of technology tools: Due to lack of experienced engineers and cost of maintaining educational technology tools in classroom management may hinder the effective usage.

Pedagogical adaptation: Integrating technology requires rethinking pedagogical approaches to leverage interactive, experiential, and collaborative learning methods that harness the potential of digital tools which most teachers lack.

Lack of accessibility: Some of the educational technology management tools such as LessonUp might not be easily accessible for every student.

Technological challenges: Some of the educational technology management tools pose challenges such as Schoology, Otus which "solves more problems than it causes" and Time Timer which has a few bugs.

6. Considerations for successful implementation of technology into management curriculum

Overcome these challenges, maximizing the benefits of technology and successfully integrating technology in management curriculum requires careful consideration of the following:

- Educational institutions should train teachers through seminars and workshops on means of utilizing available technological management tools. Providing them with training and support in utilizing technology-enhanced classroom management tools fosters a culture of innovation and enhances effective classroom management.
- Educational institutions should train students through seminars and workshops with needed skills on the use of educational technology tools for effective learning and classroom management.
- Government and educational institutions should make available educational technology tools to teachers as this would assist in them in effective classroom management.
- Experienced engineers should be employed for proper maintenance of educational management hardware and software technology tools for effective usage.
- Constant training should be organized for curriculum planners to keep them abreast with educational management technological innovations needed to be included in the curriculum.
- Educational institutions should make educational technological tools for learning and classroom management easily accessible to every student.
- Researchers should develop means of resolving some of the challenges pose by the use of educational technology management tools in the classroom.
- Educational institutions should have continuous assessment and feedback mechanisms on the use of technology in classroom management. Implementing performance-based assessments and feedback mechanisms enables continuous evaluation of teachers' technological competencies in classroom management and informs instructional improvements which should be encouraged as it would in a long way assist in developing and improving management education.

7. Conclusion

Schools have marched into the digital age and teachers in classroom management and school discipline need to follow suit for effective learning to take place. However, "teachers are often cautious and mindful at initial marking periods, but as the semester/term proceeds, interactions with students are moving along

well and the expectations relax a bit. At times, this can result in a classroom that starts getting out of control. Having a classroom with students who are testing their boundaries causes frustration. Using these strategies regularly will work to create results in student behaviour in any class (Antoine, Nu-man & Reyes-Aceytuno, 2024), effective classroom management and an enhanced students' academic performance. Moreover, technological integration is no longer an option but a necessity for effective classroom management. By embracing technology and adopting innovative educational management, educators can prepare future managers with the skills and knowledge needed to thrive in a technology-driven business world. Nevertheless, technological integration in management curriculum holds promise for enhancing the relevance, effectiveness, and inclusivity of classroom management. By leveraging theoretical frameworks, methodological approaches, and empirical findings, scholars and practitioners can advance understanding of best practices and challenges in integrating technology into management curriculum, ultimately preparing students to thrive in the digital era for the benefit of mankind.

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