IJTE International Journal of Technology in Education
www.ijte.net

A Grounded Theory Exploration of Factors Igniting Students' Passion for Learning via Digital Platforms

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Article Info

Article History

Received:
21 June 2025

Revised:
18 November 2025

Accepted:
26 December 2025

Published:
1 January 2026

Keywords

Passion
Digital platforms
Grounded Theory

Abstract

Recently, digital platforms have emerged as a fundamental educational tool, but their efficiency largely depends on their ability to ignite students' passion for learning. Based on this, the current research aimed to identify the factors through which digital platforms can ignite students' passion for learning via digital platforms. A qualitative approach was adopted, using grounded theory, to identify the key factors that can serve as theoretical foundations for igniting students' passion for learning via digital platforms. The participants in the research were teachers and students, totaling (12) participants, comprising (6) teachers and (6) students in order to reach deep insights that identify the factors affecting and reinforcing students' passion across platforms. The results reached three main factors that can be trusted as foundations for igniting students' passion across educational platforms. These factors were: digital incentives, ongoing support, and control and customization. These outcomes lead to the development of theories related to igniting students' passion. The current results also enhance practical practices that ensure the success of educational platforms in developing environments that stimulate students' passion.

Citation: Alsuhaimi, M. A., Al-Hafdi, F. S., & Alhalafawy, W. S. (2026). A Grounded Theory exploration of factors igniting students' passion for learning via digital platforms. *International Journal of Technology in Education (IJTE), 9*(1), 168-189. https://doi.org/10.46328/ijte.5144

ISSN: 2689-2758 / © International Journal of Technology in Education (IJTE).

Introduction

Using digital platforms has spread in educational settings, as they represent an integrated system for teaching and learning and provide an interactive environment through a set of technologies that support the learning process efficiently and without any time or spatial constraints (Alrashedi, Alsulami, et al., 2024; Alrashedi, Najmi, et al., 2024). Digital platforms are designed to simplify and improve the teaching and learning process. These platforms provide an online space where students can access educational materials, participate in interactive activities, collaborate with their peers, and receive feedback from their teachers. They also enable teachers to organize and deliver educational content, assess student progress, and enhance communication and interaction in the virtual classroom (Anghelo et al., 2023). The digital learning environment is more flexible, diverse, and accessible to a wider and more varied audience, with access to digital resources and the acquisition of basic skills to navigate digital platforms, allowing for the use of diverse pedagogical methods such as flipped classrooms (Idowu Sulaimon et al., 2024; Zaki et al., 2024). Digital platforms intensify the effectiveness of knowledge sharing by accessing vast amounts of data, in addition to enhancing collaboration between students and teachers through discussion forums and online chats(Maatuk et al., 2022). These platforms enable students to interact with each other and with their teachers, share ideas, ask questions, and receive guidance. This raises a more constructive and collaborative learning environment where knowledge sharing and collaborative problem solving are stimulated(Anghelo et al., 2023).

Passion is one of the variables that affect the overall attitudes toward using digital platforms. The concept of passion refers to a strong human emotion and inclination toward various activities to achieve the highest levels of performance(Najmuldeen, 2021). It is considered one of the positive variables that has recently been framed within the academic and cognitive context, after its use in positive psychology, where it is associated with positive practices and outcomes such as commitment to hard work, goals achievement, and learning for mastery(Alsawaries & Khataybeh, 2020). It plays an important role in creating a positive learning environment that leads to actual teaching and learning, adaptation to the culture of the educational institution, and appropriate relationships with teachers and other students. Its dimensions include focus and immersion in academic activities (Izadpanah, 2023). Continuous use of and interaction with digital platforms affects the actions taken and the time spent in learning (Peixoto et al., 2021). The research gap can be identified in several factors, including the scarcity of studies examining passion as a variable in digital platforms. In this situation, a study (Peixoto et al., 2021) recommended the importance of studying passion as a variable in educational settings. A study by Alrashedi, Alsulami, et al. (2024) indicated the need to pay attention to certain variables that contribute to enhancing learners' motivation and encouraging their enthusiasm, including passion. Some studies have also reported on the association of passion with other learning outcomes, such as Li et al. (2021), which found a correlation between passion and academic achievement; such an academic achievement can be predicted based on passion. A study by Alsawaries and Khataybeh (2020) found that e-learning models had a moderate impact compared to traditional education on developing academic passion. Based on the researchers' experience teaching via certain digital platforms, the research team discovered a decline in students' levels of passion for studying via digital platforms. This prompted an attempt to study and contextualize factors that could ensure students' passion for learning via digital platforms is enhanced. In a initial experimental analysis, the research team discussed with some students

who are passionate about using digital platforms, as well as expert teachers who have documented and recognized experiences in using digital platforms, the factors that can enhance their students' passion during learning. The teachers reported that this depends on an integrated structure of factors that contribute to improving the structure of passion. This encouraged the research team to attempt to frame these factors using the grounded theory methodology to arrive at a standard structure for enhancing passion and establish a number of studies that can build a broader concept for enhancing passion across e-learning environments. Thus, the main question of the current study was: How do expert teachers and students passionate about digital platforms view the factors that ignite students' passion across platforms?

Accordingly, the aim of the current study is to frame the basic factors that can be structured during teaching via platforms. This study is expected to contribute to theoretical principles that will help educational institutions understand the mechanism of building student passion via digital platforms. It is also likely to benefit educational platform designers, enabling them to become more capable of retaining students and making them more passionate about learning.

In line with the objectives of the current research, the remainder of this paper is organized as follows: Section 2 introduces the conceptual framework of digital platforms and passion. Section 3 covers the research methods. Section 4 presents the main findings. Section 5 discusses the results and implications. Section 6 outlines the limitations of the research. Finally, Section 6 concludes with recommendations for future work.

Conceptual Framework

Digital Learning Platforms

Digital educational platforms are a software system that helps create and manage online learning environments (Turnbull et al., 2021). This software system delivers educational content, organizes learning processes, and serves as a line or interface between education providers and learners (Thurm et al., 2024). Digital learning platforms provide an effective, flexible, and secure learning environment for students (Ismail et al., 2021). They also provide educational tools that improve learning processes and enable synchronous and asynchronous interaction and communication among students themselves, on the one hand, and between teachers and their students, on the other, and facilitate participation in various tasks (Alshammary & Alhalafawy, 2023). Moreover, digital learning platforms provide the functions essential to carry out educational activities, including publishing educational materials, communication, assessment, monitoring progress, and record keeping (Turnbull et al., 2022).

Digital platforms share a set of common features, such as learner-led interaction and positive engagement with available knowledge and tasks. In addition, they are flexible, scalable, and adaptable, share the ability to conduct tests and assignments, provide feedback to learners, provide content, support interactive educational resources, provide discussion forums, allow for live chat between learners and teachers and between learners themselves, conduct video conferences, and conduct assessment (Alshammary & Alhalafawy, 2023). It provides learners with the opportunity to be active participants, be self-reflective, be independent, actively engage learners and attract them to a more interesting environment that reflects on improved learning outcomes (Al-Hafdi & Alhalafawy,

2024; Alkinani & Alzahrani, 2021).

Digital platforms enable personalized education, as personalizing learning transforms the traditional organization of the educational process and ensures that every student achieves high results (Seleznev et al., 2022). Through automated processes, digital platforms can generate massive amounts of student data that can be stored, analyzed, and repurposed to improve learner experiences (Turnbull et al., 2022), such as suggesting subjects for students to study, reducing dropout rates, and managing grading systems and graduation thresholds (Ismail et al., 2021). Digital platforms are mainly significant during various emergency situations, as they provide the opportunity to stay in touch remotely with classmates and teachers and follow lessons(Ferri et al., 2020). Besides, they contribute to the sustainability of learning and the modernity of content, with the possibility of providing educational support through chatbots, enhancing the educational system's ability to access multiple and ongoing sources of support, making the learning environment supportive of educational sustainability (Seleznev et al., 2022).

Constructivist principles encourage the use of digital platforms in education by enabling knowledge construction through learners' personal experiences, expertise, and explanations (Amineh & Asl, 2015; Moreno, 2010). Besides, digital platforms enable active, collaborative, self-directed, and fair participation among learners; and knowledge is built through the sharing of multiple perspectives, which supports the application of constructivist principles across digital platforms (Alnimran & alhalafawy, 2024; Zaki et al., 2024). The Social learning theory can also be considered as one of the theories that supports the use of digital platforms. According to the social learning theory, learning takes place through engagement with others, and learners' interactions with others who are more knowledgeable or capable influence their way of thinking and interpreting different situations. Thus, social learning theory is a foundation for understanding how digital platforms can be used by teachers, experts, and peers to provide ongoing educational support to learners. Learners can gain knowledge if they are helped to construct a structure within which to place new information (Nodeland & Morris, 2020).

Digital platforms are a fertile environment for applying the foundations and principles of the social learning theory. Under their current structure, digital platforms occur through social participation and interaction between learners and their peers and teachers. Learning is a social result of conversation and negotiation among learners, who acquire knowledge through participation in relevant interactive activities (Alsayed et al., 2024; Najmi et al., 2024; Saleem et al., 2024). Finally, digital platforms provide multiple tools to facilitate social interaction (Ibrahim et al., 2024; Zohdi et al., 2024).

Passion

The term passion refers to a strong inclination toward an activity that a person loves, finds important, and invests time and energy into. A person can be considered passionate about an activity when that activity is important to their life and they spend regular time on it (Vallerand et al., 2003). Passion is a desire for an activity that a person loves, finds important, and invests time and energy into(Carbonneau et al., 2008). Passion has two dimensions: harmonious passion (HP) and obsessive passion (OP) (Peixoto et al., 2021). Harmonious passion allows for full participation in the activity with focus, alertness, and flow. It is a feeling of complete immersion resulting from

an internal drive where the person feels pleasure and satisfaction when practicing the activity they love, without feeling pressure or force, unlike obsessive passion, which pushes the person to practice the activity compulsively, and in which they feel pressure and anxiety if they are unable to practice it (Lord et al., 2023). Both types of passion increase engagement in activities. It is practical to assume that both types of passion will lead to high levels of performance through careful practice. Nevertheless, engaging in study with consistent passion enhances enjoyment and protects one from boredom and anxiety, while engaging with obsessive passion is expected to lead to boredom and anxiety (Sverdlik et al., 2021).

Passion is a motivating and facilitating factor for learning, positively impacts the educational process, and is linked to student achievement. It is a key component of academic success and achievement, and a focal point for discussions of academic achievement (Liu et al., 2023). The results show that students who are consistently passionate are more likely to pass through experience, self-determination, and engagement in learning because they are sincerely interested in the activity. This arises when the learning climate is focused on specific activities and tasks (Castillo et al., 2020). To develop motivation for passion, three basic needs must be met: autonomy, competence, and relatedness, which are elements of the self-determination theory (Vasconcellos et al., 2020). Autonomy must be stimulated by giving the learner a sense of will and freedom to carry out tasks. Competence must be encouraged by giving the learner a sense of effectiveness in completing tasks and influencing their environment. Finally, relatedness must be stimulated by the learner building relationships with peers within the learning environment and a sense of belonging to the groups formed during learning (Alrashedi, Alsulami, et al., 2024; Alrashedi, Najmi, et al., 2024). Consequently, passion is one of the key challenges to make the most of the benefits of digital platforms (Alenezi et al., 2023). If learners are not passionate about the activities taking place across learning platforms, these platforms become unable to achieve their desired goals. Hence, it is important to explore the factors that can increase learners' passion across digital platforms and make them more engaged with these platforms based on internal motivations that achieve harmonious passion within them. Passion plays an important role in creating a positive learning environment that leads to effective teaching and learning and adaptation to the culture of the educational institution. It also leads to building interactive relationships between teachers and students (Izadpanah, 2023). It can be argued that passion is one of the primary drivers that motivate students to engage in academic activities and includes both positive and negative emotions that influence their academic experience and behavior(Rahimi & Vallerand, 2021). Passion is also considered as one of the variables affected by the use of digital tools, including those for digital platforms (Alenezi et al., 2023), as well as artificial intelligence tools (Zhou & Izadpanah, 2023).

Methodology

Approach

The current qualitative study sought to identify a set of interrelated factors that can foster passion for learning via digital platforms. Therefore, a grounded theory approach was selected. This approach identifies elements that constitute a new theoretical foundation based on a rigorous qualitative analysis of data collected through interviews and qualitative observation. The grounded theory approach is most appropriate when no theory is available to explain a process, theories exist but are incomplete, or they have been developed and tested on samples

and groups other than those of interest to the qualitative researcher (Creswell & Poth, 2016). The grounded theory methodology consists of a set of inductive strategies for analyzing data, beginning with individual cases, incidents, or experiences and gradually evolving into more abstract conceptual categories to collect, explain, understand, and identify patterned relationships within data. It is a logically consistent set of data collection and analytical procedures aimed at developing theory (Charmaz, 2015).

Participants

Participants in the current study were intentionally selected from teachers and students who use digital platforms in both teaching and learning. Teachers were selected according to a set of criteria, including: at least (3) years of experience using digital platforms in teaching, use of at least (3) digital platforms to ensure diversity in the tools used, attendance at training courses on the use of digital platforms in teaching, and finally, each teacher described at least three specific examples during the last semester in which students' passion for using a digital platform was clearly evident. Regarding the criteria for selecting students, they were based on the students studying more than (5) courses as a minimum via digital platforms, and that the student evaluates the level of his/her passion and interaction when using digital platforms in learning with a score of no less than 4 out of 5 in a simple initial questionnaire, and giving preference to students who have obtained electronic training courses outside the educational context, in addition to the selected students describing some of their passion cases via digital platforms.

Table 1. Characteristics of Teachers Participating in Qualitative Interviews

Teacher's number	Years of experience in platforms	Number of platforms used	Cases of describing passion	Courses in digital technologies
T1	5	3	4	2
T2	4	4	5	2
T3	5	3	5	3
T4	6	3	5	3
T5	6	4	4	4
T6	5	3	5	2

Table 2. Characteristics of Students Participating in Qualitative Interviews

Student's number	Number of courses	Passion Level Assessment	Cases of describing passion	Courses in digital technologies
S1	5	4	3	1
S2	5	5	3	2
S3	6	5	3	2
S4	5	5	4	2
S5	5	5	4	1
S6	5	5	4	2

Accordingly, (6) teachers were selected as shown in Table 1, and (6) students were selected as shown in Table 2 to conduct qualitative interviews with them. This number is considered appropriate to achieve the study objective and suitable for reaching the stage of data saturation, as the number of individual interviews reached 12. The teachers were coded with the symbol (T) with numbers (from 1 to 6), and the students were coded with the symbol (S) with numbers (from 1 to 6).

Data Collection and Analysis

In the current study, a semi-structured interview was used with all participants. Semi-structured interviews are generally organized around a set of pre-determined open-ended questions, with additional questions emerging during the interview. They are the most commonly used form of interview in qualitative studies and can occur either individually or in groups (DiCicco-Bloom & Crabtree, 2006). This interview method allows for understanding the phenomenon as seen by the participants, identifying their perspective on the subject of study and answering questions related to how and why. It also allows the researcher to immerse himself/herself in the practice by obtaining diverse responses and different perspectives from the participants, as well as adding a number of new questions that target concepts emerging from the participants' responses based on the sequence of interviews.

A semi-structured interview guide was developed, including questions about passion for learning via digital platforms, based on the literature and the expertise of education researchers. The questions were presented in their initial form to an educational technology expert and another expert in qualitative research in psychology for feedback on the questions and their relevance to the study topic. The interviews included, for example, participants' experiences using digital platforms:

- Why do they use them? How do they use them?
- How do they contribute to developing the learning environment?
- How can their passion for using digital platforms be increased?
- How do teachers view students' engagement and passion with digital platforms?
- How do students view teachers' engagement and passion with digital platforms?

It is worth noting that while the participants were answering, questions were used to encourage them to elaborate, such as: Explain your answer further, do you have an example of this, can you provide more details, or do you have any additions you would like to discuss? Due to the theoretical sensitivity, the interview guide was updated, and several new questions were added that target concepts emerging from the teachers' responses in the previous stages.

Procedures

Ethical Procedures

Participants were provided with full details about the study, including its nature, objectives, and significance.

Informed consent was obtained from participants before they began the study. All participants were fully informed of their rights to freely decide whether to participate, to give informed consent, and to withdraw from the study at any time. Furthermore, the participants were coordinated to select a time that suited them for the interviews. To ensure the participants' privacy, their names would remain anonymous, and they would be referred to by codes. Participants were informed of the confidentiality of the information they would provide. The semi-structured interviews would last no more than 30 minutes.

Implementation Procedures

Depending on the criteria established for research participants, and after visiting more than one general education school in Jeddah, a separate list was created for teachers and another for students who met the criteria. Each participant list included contact information and suitable times for individual interviews. As agreed, upon with each participant, interviews were conducted with teachers on six separate days over the course of a week, with one interview with each teacher. The same procedure was conducted with students the following week, with one student per day. Interviews were conducted at varying times, some in the evening and others in the early afternoon, according to the participants' preferences. The interviews were fully recorded and then transliterated for subsequent data coding.

Data Analysis

In this study, data were analyzed, classified, and interpreted using a grounded theory methodology, whereby themes, categories, and axes that emerged during the analysis process were noted in parallel with data collection. Data analysis was conducted using Maxqda. In the analysis process, the researchers continuously compared the codes and categories that appeared in the first interview with the second interview to build open and axial coding for the theory. This is called theoretical sampling (Creswell & Poth, 2016).

The comparison continued until the final interview to discover the similarities and differences and to group similar categories under a higher category. The categories continued to develop until they reached the stage of saturation in both data and concepts. Coding in this study was carried out according to the proposal of the researchers (Al-Hafdi & AlNajdi, 2024; Corbin & Strauss, 1990) that coding is the basic analytical process carried out by the researcher in the grounded theory methodology. There are three basic types of coding that were implemented: open coding, axial coding, and selective coding. The three coding were implemented as follows:

Open Coding

By generating an emerging set of concepts and their properties to be integrated into a theory, many descriptions emerged when coding the qualitative data line by line(Glaser, 2016). Line by line open coding was chosen, as shown in Table 3, so that the codes were derived directly from the data, with the aim of achieving a clear vision of what the data expresses. A set of codes was generated and employed in axial coding.

Table 3. Open Coding Model Used in Qualitative Interviews

Quote from Teacher Interview 4	Line-by-line open coding
"Of course, I use them for several reasons, the most important of which is enhancing the learning experience for students, so that we present content in an interactive and attractive way that suits different learning styles. These platforms provide tools that enable me to accurately monitor students' progress and help me create interactive activities and competitions, and I use them a lot. In fact, I often use competitions among students to enhance their social skills. These platforms truly make lessons more interactive, and frankly, I benefit from the latest technologies. I simplify complex mathematical concepts, especially in my teaching of mathematics, so that they are clearer and easier for students. I also find that when I use technology in education, this helps prepare students for the digital world, and frankly, it develops their technical skills, and I see that this helps them face the technical challenges of the future."	Reinforcement Different Learning Styles Follow-up Interactive Activities Social Skills Simplification More Clarity Student Qualification

Axial Coding

Open coding resulted in (130) primary codes. Axial coding aims to decrease these codes and establish connections and links between the codes and higher categories that emerged from open coding through continuous comparison. Through axial coding, the focus was on codes that have greater analytical value, that were repeated more than once in the interviews, and that are related to the study question. Some open coding codes were combined due to their similarity and closeness in meaning. It is worth noting here that the coding process at all stages was not linear; rather, there was a continuous review of codes and categories, and repeated reading of the data to achieve immersion and familiarity with the qualitative data.

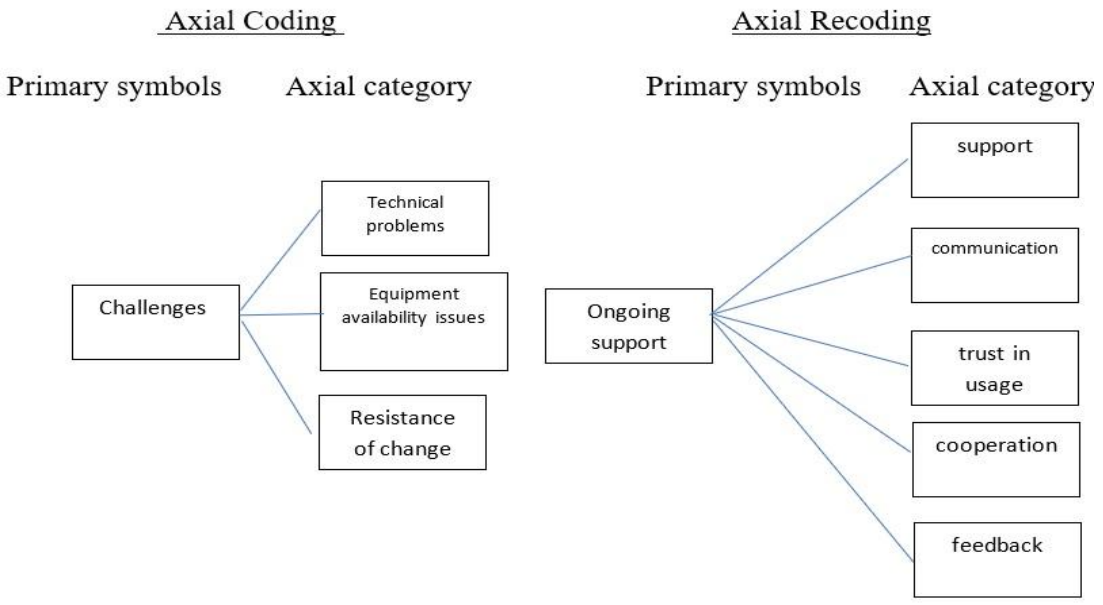

Figure 1. Example of Primary Codes Being Combined into Axial Coding and Recoding

Consequently, the data was better and more deeply understood, and it was a shared task between the researchers. Discussion occurred at each stage of coding, which led to the abandonment of some codes, the retention of others, and the merging of some similar categories, leading to the maturity of the categories. For example, the following initial codes emerged: “Technical issues,” “hardware availability issues,” and “resistance to change” were combined into a single category above “challenges,” but after reading the data and codes again, this category was moved to a higher category, “continued support,” to accommodate a larger number of codes that appeared, as shown in Figure 1, which illustrates the axial coding models in the research.

Selective Coding

The goal of selective coding is to integrate the different categories developed, elaborated, and interconnected during axial coding into a single, coherent theory. Selective coding is very similar to axial coding, but it is implemented at a more abstract level. Categories are theoretically integrated into a coherent, overarching theory, categorized under a core category that links all other categories created in axial coding. These relationships need to be validated, and some categories may require further refinement and elaboration.

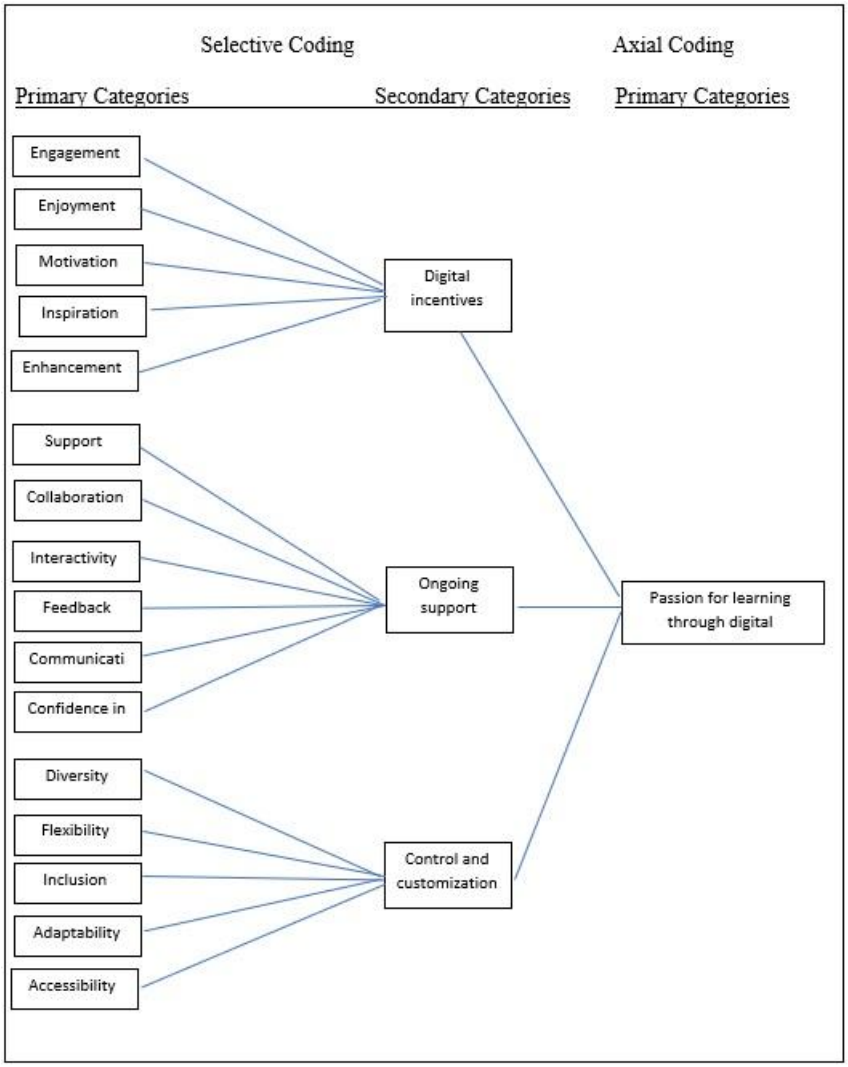

Figure 2. Selective Coding of the Core Categories of Passion for Learning Across Digital Platforms

If a core category is found, the researcher identifies the central phenomenon of their research and can finally answer the research question. The product of the research process—the grounded theory that emerged from the data—is revealed (Vollstedt & Rezat, 2019). At this stage, the data and categories were read with greater focus to preserve the greatest number of categories that had explanatory power in order to build the theory. Consultation between the researchers continued throughout the coding process with the aim of defining the categories more clearly. Figure 2 shows the selective coding of the axial categories.

Memo Writing

Brief memoranda were used throughout the study to directly record initial opinions and impressions of the data and during the coding process. This stems from the fact that memo writing is an ongoing activity for grounded theory theorists, beginning from the early stages of planning the study until its completion (Birks & Mills, 2022). To demonstrate the importance of these memos, the following is an excerpt from a memo written by one of the researchers after the first interview:

> *"Teacher 1 seemed rushed and preoccupied, even though he is one of the most enthusiastic teachers using digital platforms. I suggested rescheduling the interview for another time, and he agreed."*

The time and location of the interview had been agreed upon in advance. Thus, the memos helped provide a general context for all the data obtained and subsequently analyzed.

Results

In this section, the results will be presented and supported by direct quotes from participants that clearly relate to the theme. It is worth recalling the question of this study: How can passion for learning be restored through digital platforms? After analyzing and coding the data to answer the study question, three main themes emerged that form the theory of passion restoration in digital learning: digital incentives, ongoing support, and control and personalization. The basic concepts that comprise the theory of passion recovery across digital platforms are defined, as shown in Figure 3.

Depending on data analysis and conceptual definition, we can say that restoring passion for learning via digital platforms is achieved by providing digital incentives, ongoing support, and enabling control and personalization in digital learning environments. These concepts are closely interrelated. When digital incentives are available to maintain learner engagement, ongoing support facilitates the learning process, and the learner has the ability to control and personalize what they learn in a way that suits them, passion for using digital platforms succeeds. However, if one of these elements is unfair or imbalanced—such as a lack of incentives leading to boredom, an imbalance of support causing frustration, or a lack of control and personalization that may result in cognitive overload the learning experience will be negatively impacted, potentially leading to learner discontinuation. These findings will be detailed below.

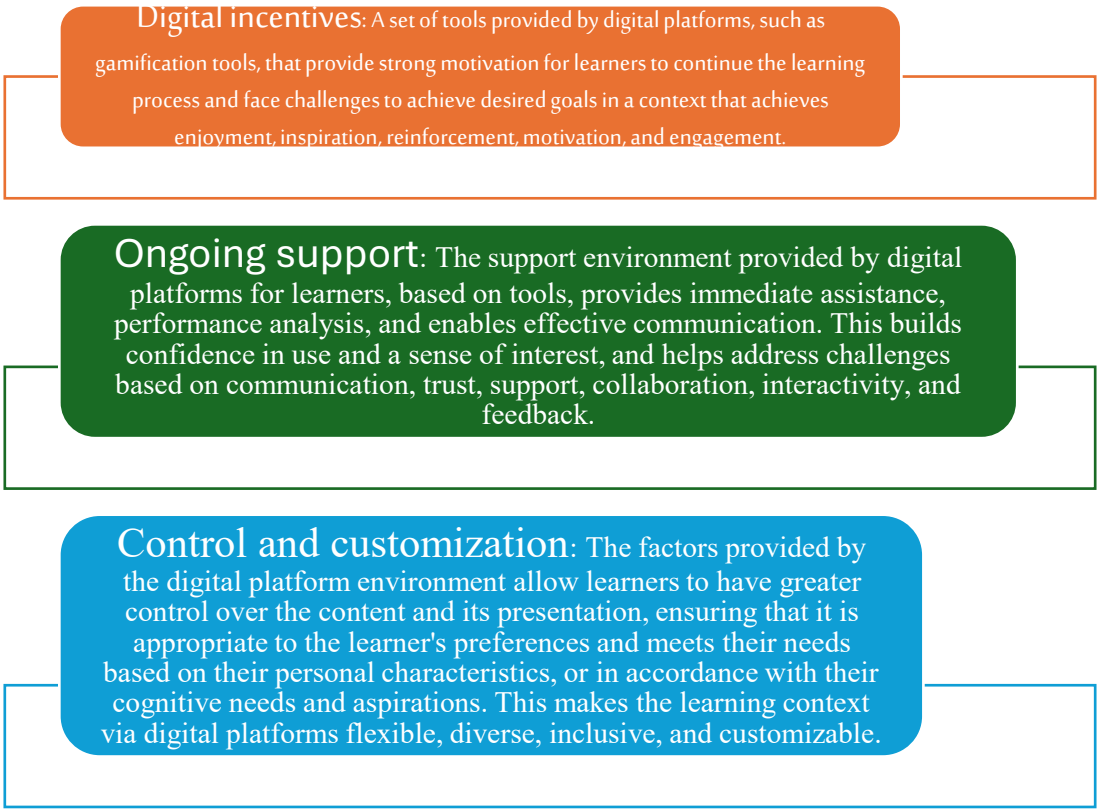

Figure 3. Key Concepts of Passion Igniting Factors Across Digital Platforms

Digital Incentives

Digital incentives, such as gamification elements like points, badges, levels, and leaderboards, are essential tools for igniting students' passion for learning through digital platforms. Digital incentives can be considered as the first spark that can be relied upon to create an environment that stimulates learners' passion. In this context, one participating teacher stated the following:

> *"The rewards displayed across platforms play an essential role in igniting students' passion for learning. For example, when a student completes a specific section of the curriculum, the system rewards them with virtual points or badges, which gives them a sense of enjoyment and inspires them to continue. This immediate reinforcement motivates them to continue and explore what's next with endless curiosity, and increases students' engagement in the educational process, transforming studying into an engaging learning experience that motivates them to learn more and continuously develop themselves" (T2)*

In a related context, another teacher stated the following:

> *"Digital platforms have transformed students' interactions with knowledge, and I see how the packaging elements stimulate their passion in an extraordinary way. These incentives, such as virtual badges and points, give them a sense of fun and challenge, and become a source of inspiration, which enhances their engagement and motivates them to explore more and continually develop themselves" (T6).*

As for students, one of them expressed his perspective on how digital incentives across platforms contribute to fostering passion, as follows:

> *"As a student, honestly, digital platforms have completely changed the way I study and made me love learning even more! The rewards the platform offers us, such as points and badges, motivate us to continue learning to see what the next reward will be. It's as if they ignite our passion for challenge. This makes me enjoy learning, and I feel like I want to discover new things and constantly improve myself. This makes learning fun and inspiring, rather than boring." (S3)*

Based on the above, feedback from both teachers and students clearly demonstrates the fundamental role of digital incentives in nurturing a passion for learning. A system that rewards students with points or badges upon completion of a course creates a sense of enjoyment and inspiration, encouraging them to continue exploring more with endless curiosity. This increases their engagement and changes learning into a true pleasure, igniting a passion for challenge and motivating them to continually discover new things and develop themselves, making education fun and inspiring.

Ongoing Support

According to the findings, ongoing support is a crucial factor in ensuring a passionate learning experience. When a learner encounters any problem, whether with usage or content, or stumbles upon learning tasks, their ability to receive appropriate support makes them feel cared for. This aspect, in particular, leads us to wonder how the availability of this support can increase students' passion for using digital platforms. One of the teachers interviewed explained this as follows:

> *"I believe that the platform's tools themselves, and how they are used to provide ongoing support to our students, play a fundamental role in fostering their passion for learning. When students know that direct support tools are available (such as chats and forums), they feel safe and confident. This support transforms the educational experience into an interactive and enriching process, which motivates them to continue learning with greater passion" (T1)*

Another teacher emphasized the above, saying,

> *"I believe that immediate feedback and constant communication, seamlessly available through the platform's tools, play a crucial role in nurturing our students' passion for learning. When a student sees the results of their efforts immediately, receives constructive guidance, or can communicate effectively to resolve any obstacles, it builds confidence in their abilities. This supportive environment encourages deep engagement and fuels the student's desire to continually explore and learn with renewed passion." (T4)*

Concerning the students, one of them expressed his view on how ongoing support across platforms contributes to

fostering passion, as follows:

> *"As a student, I feel that the ongoing support on the platform is what encourages us and keeps us motivated to learn. When I find immediate help with a difficult question or an unclear point, it gives me confidence that I can continue. It makes learning enjoyable and not boring, and it increases my passion for discovering new things." (S6)*

The above comments clearly highlight that the ongoing support provided by digital learning platforms is a crucial factor in igniting a passion for learning. Whether it's through direct support tools such as chats and forums, or through immediate feedback and effective communication, this support builds confidence in students and transforms the learning experience into an interactive and engaging process. Eventually, teachers and students alike confirm that a student's sense of interest and ability to overcome challenges thanks to the available support fuels a renewed passion for exploration and learning.

Control and Customization

A significant factor highlighted in the results was control and customization. Participants indicated that the more digital platforms are able to provide a personalized learning experience for students and give them control over the learning process, the more they will contribute to developing a passion for learning through digital platforms. In this context, one teacher stated the following:

> *“I believe that the ability of students to shape their own learning experience and adapt content to suit them, provided by digital platforms, plays a fundamental role in enriching their passion for learning. This flexibility and diversity of options ensures that every student can find something that interests them and suits their needs, enhancing their sense of ownership over the learning process and making them more engaged. This individualization ensures a comprehensive learning environment that nurtures students’ deep desire for exploration and continuous learning” (T3)*

Another teacher added to the above, stating:

> *"In my opinion, the autonomy in learning and the ability to customize content offered by digital platforms are remarkably inspiring for our students. These platforms give them the flexibility to navigate through materials and choose what suits their style, enhancing their sense of mastery over their learning journey and increasing their engagement. This ability to customize creates a flexible and stimulating learning environment, nurturing their insatiable curiosity and desire to learn." (T5)*

In a related context, one student highlighted the role of control and customization in fostering a passion for learning through digital platforms, as follows:

> *"As a student, I feel that the most important thing about digital platforms is that I can choose what I*

learn and how I learn it. When the platform gives me the freedom to choose the lessons I need or focus on, and to find the content that best suits my learning style, it makes me truly motivated to study. It's not just about receiving information. It makes me feel that studying is an enjoyable process, and it increases my passion to discover new things and learn more" (S1)

Teacher and student testimonials indicate that control and customization on digital platforms are key drivers of a passion for learning. The ability to shape the learning path and adapt content gives students a sense of control, which enhances their engagement and ignites their intrinsic motivation to explore and continuously learn, transforming learning into a personalized and engaging experience.

Discussion and Implications

Digital incentives, such as gamification elements such as points, badges, levels, and leaderboards, are effective factors in fostering students' academic passion and building a solid foundation for a productive educational experience. Digital incentives are an educational approach that facilitates the learning process, enhances learners' engagement and interaction with content, and expands their knowledge and develops their thinking (Ding, 2019; Sanchez et al., 2020). This growing trend towards integrating digital incentives into educational platforms is due to their direct impact on learners' motivation, which positively impacts their educational performance and increases their motivation to complete educational tasks and academic achievement(Leclercq et al., 2020). In addition, digital platforms within educational platforms contribute to increased social interaction among learners and encourage feedback on digital learning objects (Chen et al., 2020; Hassan et al., 2019). Digital incentives play a prominent role in motivating learners to participate in voluntary activities, complete challenging tasks, and reduce knowledge gaps (Höllig et al., 2020; Jackson, 2016). Besides, digital incentives contribute to enhancing students' mental health (Alrashedi, Alsulami, et al., 2024). This finding is consistent with a several of studies that have demonstrated the positive effects of digital incentives on educational and psychological variables, such as self-regulated learning (Alhalafawy & Zaki, 2022), Ambition in learning (Alrashedi, Alsulami, et al., 2024; Alrashedi, Najmi, et al., 2024), Social Skills (Palomino et al., 2025), self-efficacy, interest, and enjoyment (Rayan & Watted, 2024), engagement (Gaurina et al., 2025) and motivation (Al-Hafdi & Alhalafawy, 2024).The current finding is also consistent with studies that have indicated that the design of incentive systems stimulates students' extrinsic motivation, a key effect when using digital learning elements (Lomos et al., 2023). These findings are consistent with the recommendation of Alrashedi, Alsulami, et al. (2024) regarding the need to employ digital incentives to increase the effectiveness of platforms in improving learning outcomes. Furthermore, Bala (2020) revealed the positive impact of incentives and rewards on students' attitudes and motivation.

Therefore, to foster student passion, educational institutions must effectively integrate digital incentives into their platforms. This can be achieved by designing systems based on gamification elements, such as points, badges, levels, and leaderboards. These elements transform the learning process into an interactive and engaging experience, offering immediate rewards that enhance students' intrinsic motivation. When students see their progress and are rewarded for their achievements, they are more motivated to explore and continue learning, which improves their performance, reduces knowledge gaps, and contributes to building positive mental health

toward learning.

Ongoing support for users of digital learning platforms is also vital to ensuring a smooth and continuous learning experience. When a student encounters challenges with usage or content, or struggles with completing tasks, access to appropriate support enhances their sense of care. This confirms Rizana et al. (2020) finding that a lack of support leads to frustration when encountering problems with e-learning systems. This goes with Alsayed et al. (2024) study, which emphasizes the need to develop learning platforms to provide ongoing support environments without interruptions that might hinder the student's learning journey. Tait (2014) further supports this idea by suggesting that student support be understood as an integral part of the teaching and assessment processes. Fan et al. (2024) study indicates that educational support is the most important and effective mechanism for online learning. Finally, these findings align with Wei (2023) call for institutions to invest in robust student support services that go beyond academic assistance.

Providing ongoing support to learners across digital platforms is vital to ensuring a smooth and frustration-free learning experience. Institutions must invest in comprehensive support mechanisms that enable students to access immediate assistance when they encounter any challenges, whether technical or content related. This can be achieved by providing direct communication tools, immediate and constructive feedback, and additional support resources. When a student feels a support system is at their side, they gain confidence in their ability to overcome challenges, which increases their engagement and maintains their passion for learning.

Control and personalization of digital platforms are also essential factors in maintaining students' passion and use of these platforms. The more platforms provide a customizable learning experience and give students control over their learning process, the more this contributes significantly to enhancing their engagement. Alamri et al. (2021) suggests that personalization represents a fundamentally different way of learning, where students lead their own learning and actively participate in designing their path. This confirms Wei (2023) call for policymakers to develop flexible learning paths that accommodate diverse learning styles and steps. Policies that encourage educators to design adaptable learning experiences can increase student engagement, motivation, and success. Seleznev et al. (2022) also indicated that personalizing learning transforms the traditional organization of the educational process and ensures that every student achieves high results. Alhalafawy et al. (2021)also demonstrated that learning environments that support control and personalization, built on adaptive systems, are conducive to digital happiness, enhancing the psychological factors that make the learning environment more capable of supporting students' high levels of motivation.

To strengthen students’ passion, digital platforms must give students control over their learning path and customize content to suit their individual needs. By providing flexible learning paths that allow students to choose what and how they learn, platforms enhance their sense of control over the learning process. This personalization enables each student to find what interests them and aligns with their learning style, increasing engagement and igniting their fundamental motivation for exploration and continuous learning. Learning environments that support these choices nurture students' desire for self-development and contribute to their academic success.

Limitation

The research reached important results related to the factors that ignite students' passion through digital platforms. However, it is important to note that the research relied on a limited sample of teachers and students who were the most passionate about using digital platforms. Despite the limited number, saturation in the participants' responses was achieved, as saturation in the participants' responses can be achieved through qualitative research through (6) interviews (Guest et al., 2006). It may be appropriate to conduct further studies with different participant characteristics, which may contribute to reaching results in other areas that identify the factors influencing passion through digital platforms. Given the nature of the approach used in the current research, which is grounded theory, the research may not address the causal relationships between the identified factors—digital incentives, ongoing support, control, and customization—and passion quantitatively or in a way that quantifies the extent of each factor's influence individually. This requires further expansion of research that examines the causal relationships associated with these factors and passion.

Conclusion

The current study aimed to identify the crucial factors that ignite students' passion for learning via digital platforms. Using a grounded theory approach and the insights of teachers and students, three main themes emerged: digital incentives, ongoing support, control, and personalization. These findings provide a theoretical framework and practical practices to support educational institutions in designing engaging programs and platforms capable of retaining students and stimulating their passion. In the context of future studies, it is important to conduct quantitative research to confirm these findings, explore interactions between factors, conduct deeper studies to evaluate long-term impacts, and design educational interventions based on these factors and evaluate their effectiveness in diverse contexts.

Statements and Declarations

Funding: This research received no external funding.

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by faculty of education King Abdulaziz University. All participants provided informed consent to participate in the study. All participants were informed that participation is voluntary, and withdrawal is the participant's inherent right and can be done at any time. In addition, researchers were committed to keeping the provided data confidential.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author due to ongoing data collection.

Conflicts of Interest: The authors declare no conflict of interest.

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