OPEN PRAXIS

Exploratory Study of Students' Creative Mindset, Perceived Values of Open Educational Resources, and Flow

RESEARCH ARTICLE

HUNGWEI TSENG
MARK SCIUCHETTI
YINGQI TANG
*Author affiliations can be found in the back matter of this article

INTERNATIONAL COUNCIL FOR OPEN AND DISTANCE EDUCATION

ABSTRACT

As the awareness, benefits, and adoption of Open Educational Resources (OER) in various fields have increased, so have efforts to conduct research on its impact on students learning behaviors, experience, and engagement. However, limited research has been conducted regarding the efficacy of using OER on students' perceived enjoyment in learning and interactions with educational materials. This study aimed to examine the relationships between creative mindset, flow experience, and perceived values of OER among 88 online undergraduate students. First, results revealed that students who have a growth-oriented creative mindset are more likely to understand and embrace OER's intrinsic worth. Their willingness to learn new things and creative thinking fit in nicely with the OER tenets of accessibility, cooperation, and ongoing development. In addition, students reporting higher flow levels—characterized by control, attention, curiosity, and intrinsic interest—perceived greater value in OER materials. This indicates that the design and implementation of OER should consider the content and how it interacts with users to maximize engagement and flow. These findings emphasize the importance of a strategic approach to OER integration for educators and institutions, focusing on both resource quality and pedagogical frameworks that support its use. Ensuring OER materials engage and foster creative, and growth mindsets can significantly enhance students' learning experience and academic enjoyment.

CORRESPONDING AUTHOR:
Hungwei Tseng
Jacksonville State University, United States of America
htseng@jsu.edu

KEYWORDS:
open educational resources; OER-enable pedagogy; flow experience; creative thinking; creative mindsets; online learning experience; online teaching strategy; higher education; learning engagement; correlational analysis

TO CITE THIS ARTICLE:
Tseng, H., Sciuchetti, M., & Tang, Y. (2024). Exploratory Study of Students' Creative Mindset, Perceived Values of Open Educational Resources, and Flow. *Open Praxis*, *16*(4), pp. 595–609. DOI: https://doi.org/10.55982/openpraxis.16.4.747

INTRODUCTION

The emergence of Open Educational Resources (OER) not only increases equity by providing students with free or low-cost, the most up-to-date and relevant content, but it also empowers teachers to customize learning and assessment materials to educate students with creative thinking and problem-solving skills in their learning process. Open Educational Resource (OER) is defined as "The open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes" (UNESCO, 2002, p. 24). As traditional textbooks and instructional materials often focus on information delivery only, the use of OERs in this digital era can enrich students' learning experiences through an open, social, and transparent environment. Moreover, OER as a cognitive tool and OER-enabled pedagogy bring additional values to educational technology practices, that is, instructors can act as the creative agents to design and deliver more meaningful and personalized instructions. Most important, the 5R's features (reuse, retain, revise, remix, redistribute) of OER encourage educators to freely explore the utilization of resources in different educational settings and contexts by purposefully amplifying their scope (Ariza et al., 2020).

The core concept of open education involves teaching and learning strategies and tools that empower educators and students to freely access, create and share knowledge while fostering profound learning experiences (Burnett et al., 2019). According to the Open Education Consortium (n.d.), open education encompasses "resources, tools and practices that employ a framework of open sharing to improve educational access and effectiveness worldwide." UNESCO (2012) views OER as providing a strategic opportunity to improve the quality of education and facilitate policy dialogue, knowledge sharing, and capacity building. OER not only can foster knowledge sharing among all students and educators when accessing broad open learning materials that promote lifelong learning, but it also provides the potential to generate valuable collaborative learning opportunities by allowing stakeholders to reuse, remix, and repurpose OER to fulfill their specific needs and demands (Drevensek & Urbancic, 2022). Thus, OER creates an active and collaborative learning environment that facilitates instructor-learner partnership in cognitive learning processes that leads to "increased confidence, satisfaction and enthusiasm for the subject" (Farrow et al. 2015). Furthermore, OER can promote student's creative thinking skills (Natthaphatwirata, 2018) and creative mindset because of the benefits of revising and remixing to be suitable for specific target groups and course learning objectives (Dennen & Bagdy, 2019). Since the integration of innovative technologies in teaching and learning practices, evidence has emerged that students are demonstrating higher creativity while they perceive that learning materials are more attractive and enjoyable. According to Degraff and Degraff (2020), the creative mindset is "a state of mind – a way of thinking, a way of seeing opportunities to sprinkle creativity into ordinary practices. When we are using our creative mindset, we are more aware of the problem or challenge we're working on and where we can add a little creativity to change it." (p. 4).

As the awareness, benefits, and adoption of Open Educational Resources (OER) in various fields have increased, so have efforts to conduct research on its impact on students learning behaviors, experience, and engagement. However, limited research has been conducted regarding the efficacy of using OER on students' perceived enjoyment in learning and interactions with educational materials. To increase our understanding in this regard, this study aimed to investigate outcomes in the aspects of deeper learning from students (perceived values of OER and creative mindset) and to examine the relationships between students' creative mindset, flow experience, and perceived values of OER. Furthermore, our objective is to understand students' perspectives on how OER-designated courses can influence their creative mindset and learning experience.

LITERATURE

CREATIVITY AND CREATIVE MINDSET IN LEARNING

According to Tosato and Bodi (2011), creativity refers "to the ability to deal with change, the ability that we put in place when we address new problems, when we invent new strategies to tackle them" (p. 1). Creativity challenges an individual to be open-minded about absorbing new knowledge and to be an active agent who can produce new discoveries. Hwang et al.

(2007) defined creativity as "the cognitive skill of proposing a solution to a problem or making something useful or novel from ordinary" (p. 193). Students who are creative would establish their beliefs in solving problems in a proactive perspective, explore multiple possibilities before settling on a particular idea, and adopt adequate learning strategies that can foster their consistent growth in performance. The foundation of fostering creativity lies in the concept of creative mindsets—attitudes, beliefs, and learning methodologies which encourage students to retain positive changes and embrace new ideas and approaches. Incorporating with the social-cognitive approach, Dweck and Leggett (1988) posited the original "implicit theories" referring to an individual's two self-belief systems of intelligence: stability (fixed mindset) versus malleability (growth mindset). A fixed mindset is characterized by the belief that personal traits are inherited and one cannot do much about them. Conversely, a growth mindset is characterized by the belief that an individual's intelligence, skills, and capabilities are malleable and can be nurtured over time (Dweck et al., 1995). The implicit theories have been widely applied in various fields and disciplines as a framework for examining personality change (Yeager et al., 2014), emotion and social outcomes (Tamir et al., 2007), and creativity (Karwowski, 2014). According to Karwowski (2014), creative mindsets are understood as "the beliefs about the stable-versus-malleable character and the nature of creativity." (p. 62).

More specifically, Zarrinabadi et al. (2021) found that a growth mindset, which positively predicts enjoyment, self-concept, and self-efficacy through adaptability, plays a critical role in fostering positive emotions in foreign language schools. Similarly, Gopalan and Yeager (2020) suggested that adopting a growth attitude toward intelligence can significantly enhance academic achievements, particularly for low-achieving students. Furthermore, the Organisation for Economic Cooperation and Development (2021) reported that students with a growth mindset achieve higher scores in math, reading, and science compared to those with a fixed mindset. Importantly, individuals who endorse a growth mindset demonstrate resilience and a willingness to persistently improve even in challenging situations, whereas those with a fixed mindset tend to avoid challenges (Dweck, 2012). King and Trinidad (2021) further support this idea, revealing that a growth mindset is positively associated with increased motivation and engagement across students from diverse socioeconomic backgrounds. Montano (2023) affirmed that a growth mindset is intricately tied to elevated academic performance through engagement. On the other hand, studies have shown that individuals who have a fixed mindset tend to avoid challenges, have innate limitations, are reluctant to take on new tasks, and are afraid of failing, which can limit their ability to learn, perform poorly, be resilient, creative, low self-esteem and more (Gál, & Szamosközi, 2021; Murphy & Thomas, 2008; Royston & Reiter-Palmon, 2019). The relationship between Open Educational Resources (OER) and fostering creativity or a creative mindset reflects the transformative potential of OER in educational settings. Research highlights the significant impact of OER on promoting a creative mindset in students. According to Weller (2013), open education facilitated by OER supports "freedom for individuals to access content to reuse it in ways they see fit, to develop new methods of working and to take advantage of the opportunities the digital networked world offers" (p. 1). It also encourages a knowledge society that is free and open, enabling students to critically consume, produce, and synthesize information. This process enhances creative abilities and promotes collaborative and social learning environments where creativity can flourish. The ability to revise and remix OER to suit particular learning objectives and target groups further amplifies these benefits, making learning materials more engaging and enjoyable, which is essential for fostering creativity (Natthaphatwirata, 2018). In addition, the engaging nature of OER, including multimedia and interactive components, played a significant role in stimulating students' interest and creative thinking (Gisip et al., 2024).

FLOW EXPERIENCE

Csikszentmihalyi (1990) described the flow experience as "The state in which people are so intensely involved in an activity that nothing else seems to matter; the experience itself is so enjoyable that people will do it even at great cost, for the sheer sake of doing it" (p. 4). Students are completely immersed in what they are learning as they reach a certain state of flow by feeling great absorption, engagement, and motivation (Csikszentmihalyi, 1990). Building upon that, Webster et al. (1993) identified four dimensions of the flow experience include: control (the user senses a level of authority in controlling the interaction), attention focus (the user feels that his or her attention is concentrated on the interaction), curiosity (the user's curiosity

is stimulated throughout the interaction), and intrinsic interests (the user experiences intrinsic interest in the interaction). These components give a more sophisticated understanding of the cognitive and emotional processes that underlie the flow state.

Research shows that flow experience results in several positive attitudes and performance in learning, including exploratory mindset (Finneran & Zhang, 2005), intrinsic motivation (Hoffman & Novak, 1996), and creativity (Schutte & Malouff, 2020; Zubair & Kamal, 2015). For instance, Pacauskas et al.'s (2017) study found that there were connections between the state of flow and one's creativity development and quality. Flow experience in learning has been associated with various positive outcomes for students. Individuals who experience flow while learning often report increased engagement, enjoyment, and satisfaction with the learning process. Flow is linked to enhanced learning outcomes, including improved academic performance, higher levels of creativity, and greater retention of information. Research indicates that OER can facilitate flow experiences by providing engaging, adaptable, and interactive learning materials. Studies by Finneran and Zhang (2005) and Schutte and Malouff (2020) demonstrated that flow experiences were associated with higher levels of creativity and improved academic performance. Educators can create learning environments that support these optimal engagement states by integrating OER into educational practices, fostering creativity and academic success. Furthermore, Faiola et al. (2013), Hsieh et al. (2016), and Ro et al. (2018) explored a positive association between flow and learning outcomes, with Faiola and Hsieh concentrating on game-based learning and Ro on an undergraduate operations management class. Buil et al. (2019) further revealed that the balance of skill and challenge, feedback, and goal clarity all have a positive impact on students' flow, which improves perceived learning and satisfaction. Students display increased levels of involvement and attentiveness during their learning process when these components are in harmony. Importantly, students who frequently experience flow in learning are more likely to develop a lifelong love for learning and pursue challenging tasks with enthusiasm (Arquero et al., 2022).

Despite these promising findings, there is still a need for more comprehensive research on the direct impact of OER on students' creative mindsets and learning experiences. Future studies should explore more profound learning outcomes and how OER-designated courses influence students' creativity and engagement. Understanding the interplay between creative mindset, flow experiences, and the perceived value of OER can provide valuable insights for educators and instructional designers, helping to maximize the creative potential of OER in various educational settings. The literature all points out that fostering creativity and a creative mindset are key objectives of OER in education. OER's natural flexibility and adaptability, when paired with supportive pedagogical methods, foster a conducive environment for innovative learning and problem-solving. Continued research and development in this area are essential to fully realize the potential of OER in fostering creativity and innovation in educational contexts.

Based on the analysis of relevant theories and our review of existing literature, the following hypotheses and research question have been developed to guide this study:

Hypothesis H1. Participants' fixed creative mindset is negatively related to perceived values of OER.

Hypothesis H2. Participants' fixed creative mindset is negatively related to flow experience dimensions.

Hypothesis H3. Participants' growth creative mindset is positively related to perceived values of OER.

Hypothesis H4. Participants' growth creative mindset is positively related to flow experience dimensions.

Hypothesis H5. Participants' flow experience dimensions are positively related to perceived values of OER.

RQ1. To what extent and in what manner do the fixed and growth creative mindset, and flow experience dimensions explain variation in the perceived values of OER.

METHODS

PARTICIPANTS AND OER-BASED COURSE DESIGN

This study involved 88 online undergraduate students (70% female) from researchers' institutions enrolled in courses designated for Open Educational Resources (OER) usage, such as World Regional Geography (GY 120) and Physical Geography I (GY 250). The surveys were distributed to 10 different sections taught by four faculty. These courses are lower-level introductory general education courses and therefore contain both majors and non-majors. These courses integrated OER within both their pedagogical frameworks and curriculum adaptation strategies, providing a basis for evaluating the impact of open resources on educational practices and student outcomes. Eighty-three participants (94.3%) were full-time students and 80.6% (n = 71) of them were enrolled in more than 12 credit hours. The majority of them (n = 60, 68.1%) reported being in the age range of 25–30. Of the participating students, 51.1% (n = 45) reported they had avoided purchasing textbooks because it was cost prohibitive, while 69.3% (n = 61) of them indicated they would be more likely to enroll in a course if they offered free online educational materials. The surveys were distributed to 10 different courses. They were a mix of majors and non-majors as we only used lower-level courses for this work.

Pedagogical Implementation

The pedagogical framework of our geography courses was carefully designed to foster a dynamic, student-centered learning environment. The framework enhanced student engagement and deepened understanding of geographical concepts through the innovative integration of OER and active, team-based learning strategies. The initiative transformed traditional lecture-based sessions into interactive experiences that encouraged student collaboration. By implementing team-based learning from the semester's start, we cultivated a cooperative environment where students collaboratively addressed practical geographic problems and assignments. This approach was crucial for meaningful engagement with the course material and leveraging collective knowledge and skills.

The strategic implementation of OER significantly alleviated students' financial burdens, as highlighted by survey feedback. Utilizing free, high-quality educational resources from repositories like OpenStax and the Saylor Foundation, we provided up-to-date, relevant content aligned with our learning objectives. This not only reduced costs associated with traditional textbooks but also allowed us to tailor materials to better meet course needs. For example, incorporating tailored OER in World Regional Geography enabled the integration of local case studies and recent research, enhancing material relevance and helping students link global concepts to local realities. This adaptation made the content more engaging and accessible, deepening students' understanding of complex geographic phenomena.

Team-based and active learning

Our pedagogical strategy emphasized a structured, team-based, active learning approach deeply integrated with Open Educational Resources (OER). From each semester's start, students were grouped into teams, creating a cooperative and engaging educational setting essential for courses like World Regional Geography and Physical Geography I. This format was designed to boost student engagement and enhance their analytical and practical skills by applying geographical concepts to real-world scenarios.

Instructional sessions were meticulously planned each week to include the reading and analysis of specific OER chapters. These sessions began with students in their designated teams discussing and dissecting the content to identify uncertainties or areas needing clarification. This proactive engagement tailored the ongoing lectures to address specific student needs, making the learning experience more relevant and impactful (Redmond et al., 2018). The active learning sessions were designed around hands-on activities and problem-solving tasks, crucial for substantive interaction with the content. This approach reinforced the understanding and application of geographical theories and practices through continuous engagement with high-quality, accessible OERs, keeping the course content fresh and directly applicable to contemporary geographical issues.

This methodical integration of OER with team-based learning strategies significantly contributed to a dynamic and responsive learning atmosphere, allowing students to see the immediate relevance of their studies to real-world geographical problems. The collaborative nature of this process, supported by OER, provided a robust framework for students to thrive academically and develop a deeper understanding of the subject matter, creating an ideal environment for nurturing skilled geographers.

Integration of OER and adoption strategies

The strategic implementation of Open Educational Resources (OER) was aimed at enhancing educational accessibility and reducing the financial burden on students. This initiative embedded free and open resources into the curriculum, allowing faculty to tailor content to better meet specific course requirements and student needs. This process involved a rigorous evaluation of the resources' quality, relevance, and alignment with course objectives, ensuring that only the most suitable materials were selected for educational use.

Incorporating Open Educational Resources (OER) into the geography courses represents a strategic initiative designed to significantly enhance educational accessibility, enrich content relevance, and support pedagogical innovation. This comprehensive approach to integrating OER into our curriculum is rooted in a deliberate and thoughtful selection process. The selection criteria focus not only on the scholarly content but also on the pedagogical value and the extent to which the materials address contemporary geographical issues. This meticulous vetting process, aligning with recommendations by Hilton (2016), ensures that the resources are current, credible, and comprehensive, thereby addressing the essential topics of each course's syllabus while fostering critical thinking and analytical skills among students.

INSTRUMENTS

Creative mindset

Students' creative mindset was measured using ten survey questions developed by Karwowski (2014). All items were measured on a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questions in the survey included, for example, "Everyone can create something great at some point if he or she is given appropriate conditions" and "You have to be born a creator—without innate talent, you can only be a scribbler." In this study, Cronbach's Alpha of .813 indicated an acceptable internal consistency.

Flow experience

For measuring flow experience, a 5-point Likert scale was adapted from Park et al. (2010), who based their survey questions on the dimensions established by Webster et al. (1993). The survey of 12 items grouped into four dimensions were: (a) control – 3 items; α = .866 (b) attention focus – 3 items; α = .866 (c) curiosity – 3 items; α = .866, and (d) intrinsic interests – 3 items; α = .866.

Perceived values of OER

To measure the perceived values of OER from students, seven 5-point Likert scale questions were adapted from De Los Arcos' et al. (2016) study. These items were chosen because they are commonly accepted indicators of student well-being and are central to understanding the impact of OER on student learning engagement and experiences. Example questions include "Using OER in this course has led to my increased interest in the subjects taught" and "Using OER in this course has led to my being more likely to complete my course of study." The Cronbach's Alphas in this study was .96, which indicates strong reliability.

DATA COLLECTION AND ANALYSIS

A questionnaire was distributed in an online survey format, and a survey invitation letter was sent to students enrolled students from researchers' institutions enrolled in several geography courses designated for Open Educational Resources (OER) usage, such as World Regional Geography (GY 120) and Physical Geography I (GY 250) during the finals week. The questionnaire was expected to take about 20–25 minutes for participants to complete. This study was reviewed and approved by the Institutional Review Board (IRB) with Protocol number 06022023-02 prior to the data collection process.

To test Hypotheses 1 to 5, a correlational analysis was conducted to test the relationships between students' mean levels of creative mindset, perceived values on OER, and flow state. Moreover, a multiple regression analysis was performed to explain the relationship between six predictor variables and students' perceived values on OER.

FINDINGS

DESCRIPTIVE STATISTICS

As shown in Table 1, the data reveal the benefits of using OER to positively influence various aspects of students' learning experience, engagement, and motivation, with mean scores ranging from 3.78 to 4.07. To be specific, the top three perceived values of OER reported from respondents' ratings were a) an increased likelihood of completing their study (M = 4.07, SD = .852), b) improved grades (M = 4.06, SD = .912), and c) greater satisfaction with the learning experience (M = 3.93, SD = .967).

Table 1 Means and standard deviations of Perceived Values of OER.

ITEM	*MEAN*	*SD*
Using OER in this course has led to my increased interest in the subjects taught.	3.87	.975
Using OER in this course has led to my increased satisfaction with the learning experience.	3.93	.967
Using OER in this course has led to my grades improving.	4.06	.912
Using OER in this course has led to my increased engagement with lesson content.	3.87	.976
Using OER in this course has led to my increased enthusiasm for future study.	3.78	1.019
Using OER in this course has led to my becoming interested in a wider range of subjects than before I used these resources.	3.88	1.030
Using OER in this course has led to my being more likely to complete my course of study.	4.07	.852

CORRELATIONAL ANALYSIS

The Pearson correlation coefficients between fixed creative mindset, growth creative mindset, perceived values of OER, and flow experience dimensions are shown in Table 2. Growth creative mindset was positively and significantly correlated with perceived values of OER (r = 0.40, p < .01) and with three out of four flow experience dimensions, including flow control (r = 0.43, p < .01), flow curiosity (r = 0.39, p < .01), and flow interests (r = 0.31, p < .01). Moreover, perceived values of OER was positively and significantly correlated with all flow experience dimensions with Pearson correlation coefficients (r) ranging from r = .27 to r = .77.

Table 2 Descriptive statistics and correlations for study variables.

* p < .05, ** p < .01.

VARIABLES	*MEAN*	*SD*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Fixed creative mindset	2.68	.90	—	–.24	.04	–.17	–.12	.02	–.13
2. Growth creative mindset	4.15	.61		—	.40**	.43**	.10	.39**	.31**
3. Perceived values of OER	3.92	.85			—	.68**	.27*	.77**	.76**
4. Flow control	3.63	.76				—	.43**	.59**	.66**
5. Flow attention	2.95	.60					—	.25*	.46**
6. Flow curiosity	3.60	1.02						—	.81**
7. Flow interests	3.53	.83							—

The results of a multiple regression analysis (see Table 3) indicate that flow experience dimensions play a significant role in explaining participants' perceived values of OER. It also shows that flow experience, along with fixed creative mindset and growth creative mindset, explained 71.2% of the variance in the perceived values of OER, R^2 = .712, $F(6, 81)$ = 25.14, p < .001. Post-hoc coefficient examination further indicates that flow control ($t(81)$ = 3.02, p < .01), flow curiosity ($t(81)$ = 2.24, p < .05), and flow interests ($t(81)$ = 2.40, p < .05) were effective explanatory variables of perceived values of OER.

VARIABLES	UNSTANDARDIZED COEFFICIENTS *B*	UNSTANDARDIZED STANDARD ERROR *SE B*	STANDARDIZED COEFFICIENTS *β*	*SIG.*
Fixed creative mindset	.13	.07	.14	.001
Growth creative mindset	.13	.11	.10	
Flow control	.34	.11	**.30****	
Flow attention	–.12	.12	–.08	
Flow curiosity	.25	.11	**.30***	
Flow interests	.35	.15	**.34***	

Table 3 The regression results of Creative Mindsets and four subscales of Flow on Perceived Values of OER.

*$p < .05$, **$p < .01$.

LEARNERS' PERCEPTIONS OF OER

First, to gain insights into students' perceptions of and learning experience with OER, one open-ended question was asked: "How do the learning materials used in this course affect your learning experience and creativity?" The responses from 55 students reflected a very positive experience. They noted that OER definitely made learning about topics easier, the learning materials helped them learn and do well in this course, and OER has challenged their creativity and learning experience in positive ways. The feedback from students is presented as follows:

> *"The learning materials used in this course made me want to be more creative and expand my learning experience."*
>
> *"The materials helped me learn and do well in this course."*
>
> *"The learning materials used in this course affect my learning experience and creativity by using materials that I have never used before."*
>
> *"The learning materials that I've used in this course have positively [affected] my learning experience and helped me with visualizing each subject."*
>
> *"The materials used positively affected my learning experience by giving me a visual form of learning."*
>
> *"I felt I gained a greater understanding of the information and will retain it longer. The OER broke down the information into more "digestible" parts instead of just one long section to read. It was less daunting as I could engage with a smaller resource when I had a shorter amount of time to spare instead of having to carve out large amounts of time to read."*
>
> *".... the variety of ways that the information was presented in the OER engaged different types of learning. I'm a big fan and hope to see this type of thing become more common."*

DISCUSSION

Our work has yielded some noteworthy findings about the customization of OER that integrates current research and local case studies, enhancing the relatability and applicability of course content. First, a growth creative mindset enhanced the value recognition of OER. Students with a growth-oriented creative mindset are more likely to understand and embrace OER's intrinsic worth. Their willingness to learn new things and creative thinking fit in nicely with the OER tenets of accessibility, cooperation, and ongoing development. They view OER as a useful tool that can improve learning satisfaction, engagement, and outcomes in addition to being a way to cut costs. Active student engagement is a cornerstone of our OER strategy, as it involves students in selecting and evaluating materials to ensure that the resources align with their learning needs and preferences. This participatory approach, advocated by Zawacki-Richter and Naidu (2016), facilitates real-time adjustments to teaching strategies and resource utilization, thereby enhancing the educational experience. By involving students directly in the OER adoption process, the initiative empowers them to play a significant role in shaping their educational tools and environment, which is instrumental in fostering a sense of ownership and engagement with their learning materials. This customization process made the material more relevant and facilitated a deeper understanding of geographic phenomena, thus contributing

to a higher creative mindset, enthusiasm for future study, academic achievement, and student satisfaction. These outcomes are consistent with the research by Zawacki-Richter and Naidu (2016), who found that contextually adapted educational resources significantly enhance student learning experiences. Moreover, students are more likely to try out new materials, incorporate these resources into their learning, and support the growth of open educational resources. Cash (2016) explains how learners who have a growth mindset welcome challenges, persevere through failures, see effort as a means of achieving success, and take constructive criticism to heart. These qualities fit in well with the creative process, which frequently entails trying new things, taking chances, and iterating in response to feedback. Growth creative attitude is associated with adaptive motivational approaches and performance outcomes (Puente-Díaz & Cavazos-Arroyo, 2017). Further support for these findings was offered by Sbaih (2023), who showed a positive relationship between academic success and creative thinking skills, particularly originality, fluency, flexibility, and elaboration. Furthermore, Akpur (2020) emphasized creativity's critical role in the academic setting and its significant impact on academic achievement. All these results point to how crucial it is to encourage creative mindsets to improve academic achievement. By providing a range of adaptable, captivating, and engaging learning resources that foster creativity and invention, integrating OER into teaching can assist students in cultivating creative mindsets.

Second, OER could improve educational results, as evidenced by the positive and strong link found between the perceived values of OER and an experience of flow. OER contributes to the establishment of the conditions required for students to reach a state of flow by offering collaborative, adaptable, and easily accessible learning resources. Furthermore, considering the strong explanatory power of flow experiences, it is sensible to enhance the elements of control, curiosity, and interest when adopting OER. The findings correspond to Ghani and Deshpande's (1994) study, which concluded that a sense of being in control was the key factor that resulted in a state of enjoyment and intense concentration. In addition, Finneran and Zhang (2003) noted that having a sense of control with the artefact is important, hence, users can focus on the tasks and challenges. In terms of curiosity, Kashdan and Silvia (2009) claimed that curious learners are more inclined to go beyond the surface level of learning in their disciplines. This in-depth investigation encourages a more thorough understanding of the subject. Furthermore, knowledge that is acquired out of interest is frequently better retained. Curiosity stimulates an emotional and cognitive investment that helps to cement memory and comprehension, ensuring that the knowledge acquired is lasting and meaningful. Research has indicated that students who demonstrate a high degree of curiosity typically achieve better academically. Better grades and academic results are a result of their involvement, in-depth comprehension, and problem-solving abilities (Tariq et al., 2013; Von Stumm et al., 2011). By incorporating OER, educators and instructional designers can create a learning environment that promotes sustained engagement and intrinsic motivation, ultimately leading to improved students' academic performance. OER can improve the flow of the learning experience, which leads to better academic performance by boosting deeper knowledge, persistent motivation, and higher levels of student success. In addition, librarians' involvement in providing support and training, establishing a transparent process for uploading learning materials, and organizing feedback on the quality of OER are important in the developmental cycle according to Versantvoort and Schuwer (2023).

The adoption of OER significantly impacted pedagogy and resource utilization, leading to a noticeable increase in student engagement (Varma & Ren, 2023) and satisfaction. Survey feedback in this study indicated that students recognized the enhanced value of courses utilizing OER, with many expressing a great engagement in such courses. Students also reported that they appreciated the interactive and flexible nature of OER. The combination of OER and team-based learning strategies enriched the educational experience, making it more interactive, accessible, and effective (Geith & Vignare, 2008). This pedagogical shift not only supported students' academic and financial needs but also showcased the transformative potential of innovative teaching strategies in higher education. This result echoes Cooney (2017), Eichelberger and Ngo (2020), and Mathew and Kashyup's (2019) findings that OER is easier to access, and most students reported positively that OER can increase their engagement with the course lessons, increase their interest in the subjects taught.

IMPLICATIONS

The insights gained from this study into the effects of Open Educational Resources (OER) on students' creative mindset and perceived values have several actionable implications for the educational ecosystem. Educators and curriculum designers are encouraged to integrate OER as core components of pedagogical design to foster innovation and creativity, especially in disciplines that benefit from current content and diverse perspectives. Moreover, educators can use OER to design collaborative projects that foster a learning community and allow students to interact with and reflect on one another's ideas, thus improving their creativity. Administrators and policymakers are encouraged to realize OER's potential to democratize education by making high-quality learning materials available to a larger audience. Institutional support for OER use may result in higher student satisfaction and retention rates, indicating the need for policies that provide greater financing for OER initiatives while also facilitating faculty acceptance and adaptation of OER.

Furthermore, the compatibility of OER with microlearning platforms—characterized by short, focused learning activities—points to opportunities for integrating OER into microlearning modules to facilitate just-in-time learning and personalized education pathways. Open educational resources (OER) and microlearning seamlessly blend, enhancing one another to offer educators and learners unrestricted access to adaptable, small-scale learning materials (Word & Dennen, 2021). Understanding the influences of OER on students' creative mindset and their perceived values of OER and learning experience is vital for instructional designers, IT, and learning and development professionals when making decisions on contributing to the advancement of the OER and microlearning movement. The capacity of OER to be customized for diverse cultural and linguistic contexts makes it a powerful tool for enhancing global educational equity. International collaborations on OER projects could facilitate cross-cultural educational exchanges and innovations, promoting worldwide literacy and learning equity. The expanded understanding of OER's impact offers a compelling case for its broader integration into educational systems, enhancing educational accessibility, improving pedagogical outcomes, and fostering a more inclusive and dynamic educational environment worldwide. Ghaderi (2023) presented a case study of a comprehensive OER statistics course redesign at Guttman Community College. To integrate culturally and locally relevant practices in design, she promoted the incorporation by taking students' lives and experiences into account and aligning learning objectives across various disciplines.

Furthermore, the technological integration of OER is facilitated by our robust Learning Management System (LMS), which ensures seamless access to and interaction with resources. The LMS supports the incorporation of interactive elements such as asynchronous and synchronous discussion, and multimedia content, which significantly enhances the learning experience (Tseng, 2020). Moreover, the use of various educational technologies allows for the systematic analysis of the impact of OER on learning outcomes, providing valuable data on student engagement, performance metrics, and resource utilization. This integration is consistent with the most recent developments in educational technology, which highlight the value of data-driven decision-making and adaptable learning environments (Baas et al., 2019). We are dedicated to consistently improving our tactics to make sure they match the changing demands of our students and the larger educational landscape as we adapt and increase our use of open educational resources (OER). This approach has been very helpful in developing a dynamic, engaging, and educational environment that actively fosters students' academic progress and helps them become competent and knowledgeable geographers. The interaction between OER and educational technology also suggests areas for enhancement. Technology providers should focus on developing platforms that support OER's easy integration and customization, with features such as enhanced search capabilities, community-based content curation, and tools for adapting materials to local contexts (Tang & Tseng, 2023).

LIMITATION AND FUTURE RESEARCH

Regarding limitations, first, the findings from this study should be interpreted in light of the small sample size (n = 88), which limits the generalizability of the results. Second, self-reported data were used to measure students' flow experiences, which can be influenced by self-reporting bias. This bias may stem from students' introspective abilities and their feelings toward the OER learning materials at the time they completed the survey. Third, the study was conducted using data from a single discipline. Future research should explore the long-term

impacts of OER on student success and retention, particularly across different disciplines and student demographics. Research into the longitudinal impact of OER on learning outcomes across different disciplines and demographic groups is crucial to validate and expand upon these findings. It is also challenging to distinguish between the impact of pedagogical strategies used in the course and the impact of OER. Because the OER was closely connected to the active learning strategies utilized in the course, students' experiences and interactions with those strategies may have influenced their perceptions of the OER. Additionally, further study can identify the specific elements of OER that most effectively promote creative mindsets and flow experiences to optimize the design and utilization of these resources in higher education. Studies focusing on the psychological and behavioral effects of OER use, such as its impact on student motivation, anxiety, and self-efficacy, could provide deeper insights into how these resources influence learning processes.

CONCLUSION

This study examines the relationships between creative mindset, flow experience, and perceived values of OER among online undergraduate students. The research findings highlight the significant benefits of OER in educational contexts, particularly in nurturing a creative mindset and enhancing students' flow experiences, which are positively linked to their perceived value of educational materials. Furthermore, the study reveals a strong correlation between students' growth creative mindsets and their positive perceptions of OER, which aligns with existing research indicating that growth mindsets contribute to higher academic achievement and deeper engagement in learning. This suggests that students who view their abilities as improvable engage more deeply with OER, emphasizing the role of mindset in educational outcomes. Furthermore, the research underscores the relationship between flow experiences and learning satisfaction among OER students. Students reporting higher flow levels—characterized by control, attention, curiosity, and intrinsic interest—perceived greater value in OER materials. This indicates that the design and implementation of OER should consider the content and how it interacts with users to maximize engagement and flow. Moreover, this study affirms the value of OER in transforming the educational landscape by supporting active learning among students, promoting engaging and flow-rich learning experiences, and providing equitable access to high-quality educational resources. OER plays a pivotal role in ongoing efforts to improve educational outcomes and foster continuous learning and creativity. The integration of OER within the curriculum demonstrates significant benefits, including reduced student costs and increased access to diverse and adaptable learning materials. This study's findings suggest that the strategic use of OER can enhance educational quality and student outcomes, particularly in fostering an environment that supports a growth mindset, learning creativity, and active learning.

In conclusion, this study contributes to our knowledge of how mentality affects OER uptake and efficacy and offers insightful information to researchers, educators, and policymakers who want to improve teaching methods and resource use. Furthermore, this study presents how crucial it is to incorporate OER into teaching methods to promote deep engagement, motivation, and successful learning. Understanding and taking advantage of these open resources might result in more successful and satisfying educational experiences for students.

DATA ACCESSIBILITY STATEMENT

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

ETHICS AND CONSENT

The Jacksonville State University Institutional Review Board (IRB) reviewed the protocol application and approved the research exempt with Protocol number 06022023.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR CONTRIBUTIONS (CRediT)

Hungwei Tseng: Writing – review & editing, Writing – original draft, Conceptualization, Visualization, Validation, Methodology, Investigation, Formal analysis, Data curation; Mark Sciuchetti: Writing – review & editing, Writing – original draft, Resources, Conceptualization, Project administration; Yingqi Tang: Writing – review & editing, Writing – original draft, Validation, Investigation, Formal analysis. All authors have read and agreed to the published version of the manuscript.

AUTHOR AFFILIATIONS

Hungwei Tseng orcid.org/0000-0001-9690-1847
Jacksonville State University, United States of America

Mark Sciuchetti orcid.org/0000-0003-1264-1158
Jacksonville State University, United States of America

Yingqi Tang orcid.org/0000-0002-8868-6494
Jacksonville State University, United States of America

REFERENCES

Akpur, U. (2020). Critical, reflective, creative thinking and their reflections on academic achievement. *Think. Skills and Creativity, 37*, 100683. https://doi.org/10.1016/j.tsc.2020.100683

Ariza, M. R., Quesada, A., Abril, A. M., & **Rodríguez, P. G.** (2020). Multidimensional research on the impact of open educational resources. In *INTED2020 Proceedings* (pp. 8886–8886). IATED. https://doi.org/10.21125/inted.2020.2417

Arquero, J. L., Romero-Frías, E., & **Del Barrio-García, S.** (2022). The impact of flow, satisfaction and reputation on loyalty to MOOCs: the moderating role of extrinsic motivation. *Technology, Pedagogy and Education, 31*(4), 399–415. https://doi.org/10.1080/1475939X.2021.2018031

Baas, M., Admiraal, W., & **van den Berg, E.** (2019). Teachers' adoption of open educational resources in higher education. *Journal of Interactive Media in Education, 2019*(1), 1–11. https://doi.org/10.5334/jime.510

Buil, I., Catalán, S., & **Martínez, E.** (2019). The influence of flow on learning outcomes: An empirical study on the use of clickers. *British Journal of Educational Technology, 50*(1), 428–439. https://doi.org/10.1111/bjet.12561

Burnett, M., Solomon, J., & **Healy, H.** (2019). *Getting started with open educational resources*. University of Iowa Pressbooks.

Cash, R. M. (2016). *Self-regulation in the classroom: Helping students learn how to learn*. Free Spirit Publishing.

Cooney, C. (2017). What impacts do OER have on students? Students share their experiences with a health psychology OER at New York City College of Technology. *The International Review of Research in Open and Distributed Learning, 18*(4), 155–178. https://doi.org/10.19173/irrodl.v18i4.3111

Csikszentmihalyi, M. (1990). *Flow: the psychology of optimal experience*. Harper and Row.

De Los Arcos, B., Farrow, R., Pitt, R., Weller, M., & **McAndrew, P.** (2016). Adapting the curriculum: How K-12 teachers perceive the role of open educational resources. *Journal of Online Learning Research, 2*(1), 23–40.

DeGraff, J., & **DeGraff, S.** (2020). *The Creative Mindset: Mastering the Six Skills That Empower Innovation*. Berrett-Koehler Publishers.

Dennen, V. P., & **Bagdy, L. M.** (2019). From proprietary textbook to custom OER solution: Using learner feedback to guide design and development. *Online Learning, 23*(3), 4–20. https://doi.org/10.24059/olj.v23i3.2068

Drevensek, M., & **Urbancic, T.** (2022). The role of teamwork in the creation of open educational resources for closing SDG-related knowledge gaps. *Open Praxis, 14*(2), 148–161. https://doi.org/10.55982/openpraxis.14.2.266

Dweck, C. S. (2012). Mindsets and human nature: Promoting change in the Middle East, the schoolyard, the racial divide, and willpower. *American Psychologist, 67*(8), 614–622. https://doi.org/10.1037/a0029783

Dweck, C. S., Chiu, C., & **Hong, Y.** (1995). Implicit theories and their role in judgment and reactions: A world from two perspectives. *Psychological Inquiry, 6*, 267–285. https://doi.org/10.1207/s15327965pli0604_1

Dweck, C. S., & **Leggett, E. L.** (1988). A Social-Cognitive Approach to Motivation and Personality. *Psychological Review, 95*(2), 256–273. https://doi.org/10.1037/0033-295X.95.2.256

Eichelberger, A., & **Ngo, H.** (2020). Beyond the basics: Adapting an open textbook to accommodate a flipped class. *IAFOR Journal of Education, 8*, 67–88. https://doi.org/10.22492/ije.8.2.04

Faiola, A., Newlon, C., Pfaff, M., & **Smyslova, O.** (2013). Correlating the effects of flow and telepresence in virtual worlds: Enhancing our understanding of user behavior in game-based learning. *Computers in Human Behavior, 29*(3), 1113–1121. https://doi.org/10.1016/j.chb.2012.10.003

Farrow, R., Pitt, R., de los Arcos, B., Perryman, L. A., Weller, M., & **McAndrew, P.** (2015). Impact of OER use on teaching and learning: Data from OER Research Hub (2013–2014). *British Journal of Educational Technology*, *46*(5), 972–976. https://doi.org/10.1111/bjet.12310

Finneran, C. M., & **Zhang, P.** (2003). A person–artefact–task (PAT) model of flow antecedents in computer-mediated environments. *International Journal of Human-Computer Studies*, *59*(4), 475–496. https://doi.org/10.1016/S1071-5819(03)00112-5

Finneran, C. M., & **Zhang, P.** (2005). Flow in computer-mediated environments: Promises and challenges. *Communications of the Association for Information Systems*, *15*(1), 82–101. https://doi.org/10.17705/1CAIS.01504

Gál, É., & **Szamosközi, I.** (2021). Fixed intelligence mindset prospectively predicts students' self-esteem. *Journal of Individual Differences, 42*(4), 175–182. https://doi.org/10.1027/1614-0001/a000344

Geith, C., & **Vignare, K.** (2008). Access to education with online learning and Open Educational Resources: Can they close the gap? *Journal of Asynchronous Learning Networks*, *12*(1), 105–126. https://doi.org/10.24059/olj.v12i1.1710

Ghaderi, S. (2023). Designing OER with equity: An example of situating equity in a community college statistics course redesign. *Open Praxis*, *15*(3), 235–243. https://doi.org/10.55982/openpraxis.15.3.572

Ghani, J. A., & **Deshpande, S. P.** (1994). Task characteristics and the experience of optimal flow in human-computer interaction. *The Journal of Psychology*, *128*(4), 381–391. https://doi.org/10.1080/00223980.1994.9712742

Gisip, J., Ibrahim, N., Ratim, S., & **Abdul Ghani, F. S.** (2024). Open educational resources (OER) in e-learning for higher education. *International Journal of e-Learning and Higher Education (IJELHE)*, *19*(2), 449–463. https://doi.org/10.24191/ijelhe.v19n2.19227

Gopalan, M., & **Yeager, D. S.** (2020, August 8). How does adopting a growth mindset improve academic performance? Probing the Underlying Mechanisms in a Nationally- Representative Sample. https://doi.org/10.31219/osf.io/h2bzs

Hilton, J. (2016). Open educational resources and college textbook choices: A review of research on efficacy and perceptions. *Educational Technology Research and Development*, *64*, 573–590. https://doi.org/10.1007/s11423-016-9434-9

Hoffman, D. L., & **Novak, T. P.** (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing, 60*, 50–68. https://doi.org/10.1177/002224299606000304

Hsieh, Y. H., Lin, Y. C., & **Hou, H. T.** (2016). Exploring the role of flow experience, learning performance and potential behavior clusters in elementary students' game-based learning. *Interactive Learning Environments, 24*(1), 178–193. https://doi.org/10.1080/10494820.2013.834827

Hwang, W.-Y., Chen, N.-S., Dung, J.-J., & **Yang, Y.-L.** (2007). Multiple representation skills and creativity effects on Mathematical problem solving using a multimedia whiteboard system. *Educational Technology & Society, 10*(2), 191–212.

Karwowski, M. (2014). Creative mindsets: Measurement, correlates, consequences. *Psychology of Aesthetics, Creativity, and the Arts, 8*, 62–70. https://doi.org/10.1037/a0034898

Kashdan, T. B., & **Silvia, P. J.** (2009). Curiosity and interest: The benefits of thriving on novelty and challenge. In S. J. Lopez & C. R. Snyder (Eds.), *Oxford handbook of positive psychology* (2nd ed., pp. 367–374). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780195187243.013.0034

King, R. B., & **Trinidad, J. E.** (2021). Growth mindset predicts achievement only among rich students: examining the interplay between mindset and socioeconomic status. *Social Psychology of Education, 24*, 635–652. https://doi.org/10.1007/s11218-021-09616-z

Mathew, S., & **Kashyap, U.** (2019). Impact of OER materials on students' academic performance in undergraduate astronomy course. *Journal of STEM Education: Innovations and Research*, *20*(1), 46–49.

Montano, R. L. (2023). Psychometric validity of the implicit theories of intelligence scale among Filipino university students: growth mindset is linked to higher self-reported academic achievement via academic engagement. *International Journal of Educational Psychology, 12*(1), 118–124. https://doi.org/10.1080/20590776.2023.2262678

Murphy, L., & **Thomas, L.** (2008, June). Dangers of a fixed mindset: implications of self-theories research for computer science education. In *Proceedings of the 13th annual conference on Innovation and technology in computer science education* (pp. 271–275). https://doi.org/10.1145/1384271.1384344

Natthaphatwirata, R. (2018). AOT-Using Open Educational Resources with Connectivism Enhance Creative Thinking in THAI Students. In *AECT Proceedings* (pp. 342–349).

Open Education Consortium. (n.d.). About the Open Education Consortium. Retrieved from http://www.oeconsortium.org/about-oec/

Organisation for Economic Cooperation and Development. (2021). Sky's the limit: Growth mindset, students, and schools in PISA. OECD Publishing. https://www.oecd.org/pisa/growth-mindset.pdf

Pacauskas, D., Pacauskas, D., Rajala, R., & **Rajala, R.** (2017). Information system users' creativity: A meta-analysis of the link between IT use and creative performance. *Information Technology & People, 30*(1), 81–116. https://doi.org/10.1108/ITP-04-2015-0090

Park, J., Parsons, D., & **Ryu, H.** (2010). To flow and not to freeze: Applying flow experience to mobile learning. *IEEE Transactions on Learning Technologies*, *3*(1), 56–67. https://doi.org/10.1109/TLT.2010.1

Puente-Díaz, R., & **Cavazos-Arroyo, J.** (2017). The influence of creative mindsets on achievement goals, enjoyment, creative self-efficacy and performance among business students. *Thinking Skills and Creativity, 24*, 1–11. https://doi.org/10.1016/j.tsc.2017.02.007

Redmond, P., Abawi, L., Brown, A., Henderson, R., & **Heffernan, A.** (2018). An online engagement framework for higher education. *Online Learning Journal*, *22*(1), 183–204. https://doi.org/10.24059/olj.v22i1.1175

Ro, Y. K., Guo, Y. M., & **Klein, B. D.** (2018). The case of flow and learning revisited. *Journal of Education for Business, 93*(3), 128–141. https://doi.org/10.1080/08832323.2017.1417229

Royston, R., & **Reiter-Palmon, R.** (2019). Creative self-efficacy as mediator between creative mindsets and creative problem-solving. *The Journal of Creative Behavior, 53*(4), 472–481. https://doi.org/10.1002/jocb.226

Sbaih, A. D. (2023). Creative thinking in students of mathematics in universities and its relationship with some variables. *Perspectives of Science and Education, 64*(4), 108–124. https://doi.org/10.32744/pse.2023.4.7

Schutte, N. S., & **Malouff, J. M.** (2020). Connections between curiosity, flow and creativity. *Personality and Individual Differences*, *152*, 109555. https://doi.org/10.1016/j.paid.2019.109555

Tamir, M., John, O. P., Srivastava, S., & **Gross, J. J.** (2007). Implicit theories of emotion: Affective and social outcomes across a major life transition. *Journal of Personality and Social Psychology, 92*(4), 731–744. https://doi.org/10.1037/0022-3514.92.4.731

Tang, Y., & **Tseng, H.** (2023). Exploring academic librarians' perception of OER through the lens of technology acceptance model. *The Journal of Academic Librarianship, 49*(5), 102769. https://doi.org/10.1016/j.acalib.2023.102769

Tariq, S. R., Batool, I., & **Khan, T. S.** (2013). Curiosity, self-regulation and academic achievement among undergraduate students. *Pakistan Journal of Social and Clinical Psychology, 11*(2), 28–35.

Tosato, P., & **Bodi, G.** (2011). Collaborative environments to foster creativity, reuse and sharing of OER. *European Journal of Open, Distance and E-learning*, *14*(2). Retrieved from https://old.eurodl.org/materials/special/2011/Tosato_Bodi.pdf

Tseng, H. (2020). An exploratory study of students' perceptions of learning management system utilisation and learning community. *Research in Learning Technology*, *28*. https://doi.org/10.25304/rlt.v28.2423

UNESCO. (2002). Forum on the impact of open courseware for higher education in developing countries: Final report. Retrieved from www.unesco.org/iiep/eng/focus/opensrc/PDF/OERForumFinalReport.pdf

UNESCO. (2012). Open educational resources. Retrieved from http://www.unesco.org/new/en/communication-and-information/access-to-knowledge/open-educational-resources/

Varma, S. G., & **Ren, X.** (2023). An initiative to develop OER-based general education courses in higher education. *Open Praxis*, *15*(2), 124–133. https://doi.org/10.55982/openpraxis.15.2.520

Versantvoort, M., & **Schuwer, R.** (2023). Towards sustainable OER practices: The case of Bachelor Nursing in the Netherlands. *Open Praxis*, *15*(2), 113–123. https://doi.org/10.55982/openpraxis.15.2.542

Von Stumm, S., Hell, B., & **Chamorro-Premuzic, T.** (2011). The hungry mind: Intellectual curiosity is the third pillar of academic performance. *Perspectives on Psychological Science, 6*(6), 574–588. https://doi.org/10.1177/1745691611421204

Webster, J., Trevino, L. K., & **Ryan, L.** (1993). The dimensionality and correlates of flow in human-computer interactions. *Computers in Human Behavior*, *9*(4), 411–426. https://doi.org/10.1016/0747-5632(93)90032-N

Weller, M. (2013). The battle for open – a perspective. *Journal of Interactive Media in Education, 2013*(3), 1–14. https://doi.org/10.5334/2013-15

Word, K., & **Dennen, V. P.** (2021). Sharing microlearning materials as open educational resources (OER). In *Microlearning in the Digital Age* (pp. 200–213). Routledge. https://doi.org/10.4324/9780367821623-17

Yeager, D. S., Johnson, R., Spitzer, B. J., Trzesniewski, K. H., Powers, J., & **Dweck, C. S.** (2014). The far-reaching effects of believing people can change: Implicit theories of personality shape stress, health, and achievement during adolescence. *Journal of Personality and Social Psychology, 106*(6), 867–884. https://doi.org/10.1037/a0036335

Zarrinabadi, N., Rezazadeh, M., Karimi, M., & **Lou, N. M.** (2021). Why do growth mindsets make you feel better about learning and your selves? The mediating role of adaptability. *Innovation in Language Learning and Teaching, 16*(3), 249–264. https://doi.org/10.1080/17501229.2021.1962888

Zawacki-Richter, O., & **Naidu, S.** (2016). Mapping research trends from 35 years of publications in Distance Education. *Distance Education*, *37*(3), 245–269. https://doi.org/10.1080/01587919.2016.1185079

Zubair, A., & **Kamal, A.** (2015). Work related flow, psychological capital, and creativity among employees of software houses. *Psychological Studies, 60*, 321–331. https://doi.org/10.1007/s12646-015-0330-x

TO CITE THIS ARTICLE:
Tseng, H., Sciuchetti, M., & Tang, Y. (2024). Exploratory Study of Students' Creative Mindset, Perceived Values of Open Educational Resources, and Flow. *Open Praxis*, *16*(4), pp. 595–609. DOI: https://doi.org/10.55982/openpraxis.16.4.747

Submitted: 28 August 2024
Accepted: 09 October 2024
Published: 29 November 2024

Open Praxis is a peer-reviewed open access journal published by International Council for Open and Distance Education.

INTERNATIONAL COUNCIL FOR OPEN AND DISTANCE EDUCATION