

Realizing Creative Teachers: Validity and Reliability Test of Instruments for Creative Teaching Behavior, Proactive Personality, Information Literacy, and Knowledge Sharing

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ABSTRACT

This study aimed to evaluate the validity and reliability of measurement instruments related to CTB, proactive personality, information literacy, and knowledge sharing. A quantitative approach was employed, involving 47 respondents from the Business Education Study Program, using stratified sampling techniques. Instrument validation using Pearson Product-Moment correlation showed that 28 out of 30 items were statistically valid, with correlation coefficients between 0.296 and 0.707. Reliability tests using Cronbach's Alpha demonstrated excellent internal consistency ($\alpha = 0.920$). Additionally, normality testing with the Kolmogorov-Smirnov method confirmed data normality (p-value = 0.074). These findings confirm the effectiveness of the instruments in measuring proactive personality, information literacy, knowledge sharing, and CTB. Although most items exhibited strong validity and reliability, further refinement is recommended for two items with lower validity. Practically, this validated instrument significantly contributes to the professional development of educators, especially in business and marketing education.

INTRODUCTION

Teachers, as educators, have several skills that must be developed to become professional teachers. One of these competencies is Technological Pedagogical and Content Knowledge (TPACK), as well as 21st-century skills. TPACK itself is a skill framework that combines the interaction between 3 main basic dimensions in teaching, namely pedagogical knowledge, technological knowledge, and content knowledge. Other skills, namely 21st-century skills, consist of Critical Thinking, Communication, Collaboration, and Creativity. Based on a more specific scope, this also applies to prospective teachers in business and marketing.

Based on initial observations made during classroom learning for students of the Business Education study program, there were several interesting findings that were successfully concluded from this activity. Based on learning outcomes, most students still have difficulties in developing and improving pedagogical skills. Some still feel insecure and are not even fluent in teaching. However, on the other hand, content skills can be mastered by students quite well. Students can complete it according to the learning objectives. Students' understanding is also good, with evaluation scores that are above the average for college graduation. These results show that, based on TPACK skills, students in the Business Education study program have difficulties in the pedagogical dimension.

Other observation results show quite interesting results, which are also material for reflection. Learning at the State University of Malang has implemented project-based learning, team-based projects, and case methods. This also applies to the Business Education study program. These learning models must be realized in the form of learning outcomes. Based on classroom observations and learning outcomes from students, the project tasks that have been determined can actually be done well by students. However, the level of originality is still very low, as evidenced by the many similarities between groups and between students. Similarities occur not only from writing and project results, but also in the style of making each subchapter, and even the design also has many similarities, even though they are in different groups. This result shows that the level of creativity of students in solving a problem still needs to be improved. This observation illustrates that in terms of 21st-century skills, the creativity dimension needs to be explored further.

The shortcomings of the two dimensions of skills have great potential in developing prospective teachers' skills. There is one new teacher skill that is the result of the integration of pedagogical skills and creativity skills. This skill is commonly referred to as Creative Teaching Behavior. Creative Teaching Behavior refers to a skill that becomes a habit to teach in creative ways and to teach by using tools creatively. There are several factors that influence creative teaching behavior skills. First, information literacy skills provide habituation and enrichment of knowledge on how to teach and teach content creatively. Second, knowledge sharing is a strong motivational factor for teachers to familiarize themselves with creative learning. Third, Proactive Personality describes the factors that support a teacher's creative teaching behavior through a strong desire

and drive from within to understand something that the teacher has not mastered. Active habituation to solve a problem is the beginning of creative teaching behavior. Through this background, this research was prepared with the title "Improving Creative Teaching Behavior: The Role of Proactive Personality, Information Literacy Skills, and Knowledge Sharing". Based on this background, this study tries to answer whether it is true that the factors that are thought to affect the habit of creative teaching behavior really affect positively and significantly. The results of this study are expected to be the beginning of the development of creative teaching habits among teachers, especially business and marketing teachers.

THEORETICAL REVIEW

Creative Teaching Behavior (CTB) is a pedagogical approach specifically designed to stimulate students' creativity (Liu et al., 2020; Nelson & Vardell, 2025). Teachers who implement CTB cultivate a learning environment that encourages holistic thinking, the emergence of new ideas, and inventive problem solving (González Hernández et al., 2024; Namono et al., 2022). The practice of CTB is shaped by internal factors such as a creative personality characterized by curiosity, risk-taking, and imagination, along with creative self-efficacy, or teachers' belief in their ability to teach creatively (Chen et al., 2024). by external influences, including peer support, positive interactions, and trust within the school's social capital, as well as a school culture marked by transformational leadership and an innovative climate (Varlık et al., 2024; Wei et al., 2024).

To enhance CTB encompassing autonomous learning, creative thinking, motivational traits, and supportive environmental opportunities professional development programs, collaborative networks, and active knowledge sharing have proven effective (Kaufman, 2025; Shi et al., 2023). Knowledge sharing involves open interactions where teachers and students collaboratively exchange information, ideas, and insights to deepen understanding and hone communication, critical thinking, and cooperation skills (M. Hosen et al., 2021). This can be facilitated through group discussions, digital platforms such as social media and learning management systems, and online document exchange (K. S. I. Kankanamge et al., 2025). Though it may be hindered by low student motivation, limited digital literacy, and the risk of misinformation (S. Jin et al., 2025; Ma & Fee, 2025). Teachers can address these challenges by fostering a collaborative classroom atmosphere, recognizing active participation, and leveraging collaborative technologies to support effective knowledge sharing (Delo et al., 2025; Eni et al., 2025).

Information Literacy (IL) is defined as the competency to identify one's information needs, locate relevant resources, assess their credibility and relevance, and apply information ethically and effectively (Antasari, 2025). IL includes three main dimensions access, evaluation, and use and these skills play a critical role in lifelong learning, data-driven decision making, and academic and professional success (Graves et al., 2021). In the context of CTB, IL encourages both teachers and students to innovate continuously, utilize

information appropriately, and foster curiosity (T. Svensson et al., 2022). efforts further reinforced through partnerships with academic libraries, literacy competitions, and discussion activities designed to boost motivation, critical thinking, and creative potential (Bartol et al., 2018; S. W. Jin et al., 2019; Kong, 2014). roactive personality, characterized by initiative-taking, opportunity sensitivity, and goal-directed persistence (Su et al., 2024).

Within educational settings, individuals with proactive personalities tend to foster greater creative self-efficacy and promote innovative behaviors among students (Abdel Hadi et al., 2023; Chu & Chou, 2024; Dai et al., 2024). When educational environments offer support and constructive interactions, proactive individuals are more likely to generate novel ideas and fully realize their capabilities (Johari et al., 2022; Zheng et al., 2020). Ultimately, the synergy between CTB, knowledge sharing, IL, and proactive personality creates an innovative learning ecosystem responsive to the demands of the digital age, fostering student creativity and inspiring teachers to experiment with more engaging, meaningful teaching methods (Din et al., 2023; Liao et al., 2023). Utilizing all these elements not only enhances students' creativity but also motivates teachers to continue experimenting with more creative and meaningful teaching methods.

METHODOLOGY

This study employed a chiefly quantitative design, integrating validity assessment (Almanasreh et al., 2019a), reliability analysis (Cortina, 2020), and *modeling* (Dash & Paul, 2021; Hair, Risher, et al., 2019). To enhance robustness, supplementary checks were conducted (Vova-Chatzi et al., 2020) in order to justify the analysis results with strong robustness. Initial instrument validity was established through expert judgment (Almanasreh et al., 2019b; Snow, 2012). The research took place within the Business Education Study Program at the State University of Malang, focusing on ordinal data collected via surveys, questionnaires, assessment tests, and administrative records. A stratified sampling approach was utilized students were categorized into subgroups based on characteristics like age, gender, and education level, and then random samples were drawn from each stratum to ensure balanced representation across heterogeneous segments (Berndt, 2020; Buntin, 2020a), Ethical considerations included obtaining voluntary, uncoerced participation and safeguarding against conflicts of interest between researchers and respondents (Buntin, 2020b; Cash et al., 2022; May & Perry, 2022).

RESULTS

This study used a questionnaire instrument to measure three independent variables, namely proactive personality, information literacy skills, and knowledge sharing, and one dependent variable, namely creative teaching behavior. Before the instrument was used for the main data collection, validity and reliability tests were conducted to ensure the feasibility of the statement items.

Validity Test

The validity test was carried out using the Pearson Product-Moment correlation technique between the scores of each item and the total score. Based on the results of the analysis of 30 statement items with 47 respondents, it is known that most of the instrument items have a significant correlation value ($p < 0.05$ to $p < 0.01$).

Table 1. Validity Results

| Correlations | | | | | |
|---------------------|---------------------|---------|---------|---------------------|---------|
| Item | Pengukuran | Hasil | Item | Pengukuran | Hasil |
| Item_1 | Pearson Correlation | 0.276 | Item_16 | Pearson Correlation | 0.489** |
| | Sig. (2-tailed) | 0.061 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_2 | Pearson Correlation | 0.514** | Item_17 | Pearson Correlation | 0.647** |
| | Sig. (2-tailed) | 0.000 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_3 | Pearson Correlation | 0.443** | Item_18 | Pearson Correlation | 0.681** |
| | Sig. (2-tailed) | 0.002 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_4 | Pearson Correlation | 0.630** | Item_19 | Pearson Correlation | 0.636** |
| | Sig. (2-tailed) | 0.000 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_5 | Pearson Correlation | 0.466** | Item_20 | Pearson Correlation | 0.299* |
| | Sig. (2-tailed) | 0.001 | | Sig. (2-tailed) | 0.041 |
| | N | 47 | | N | 47 |
| Item_6 | Pearson Correlation | 0.296* | Item_21 | Pearson Correlation | 0.658** |
| | Sig. (2-tailed) | 0.043 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_7 | Pearson Correlation | 0.324* | Item_22 | Pearson Correlation | 0.520** |
| | Sig. (2-tailed) | 0.026 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |

| | | | | | |
|---------|---------------------|---------|---------|---------------------|---------|
| Item_8 | Pearson Correlation | 0.467** | Item_23 | Pearson Correlation | 0.542** |
| | Sig. (2-tailed) | 0.001 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_9 | Pearson Correlation | 0.400** | Item_24 | Pearson Correlation | 0.707** |
| | Sig. (2-tailed) | 0.005 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_10 | Pearson Correlation | 0.514** | Item_25 | Pearson Correlation | 0.462** |
| | Sig. (2-tailed) | 0.000 | | Sig. (2-tailed) | 0.001 |
| | N | 47 | | N | 47 |
| Item_11 | Pearson Correlation | 0.390** | Item_26 | Pearson Correlation | 0.653** |
| | Sig. (2-tailed) | 0.007 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_12 | Pearson Correlation | 0.443** | Item_27 | Pearson Correlation | 0.515** |
| | Sig. (2-tailed) | 0.002 | | Sig. (2-tailed) | 0.000 |
| | N | 47 | | N | 47 |
| Item_13 | Pearson Correlation | 0.630** | Item_28 | Pearson Correlation | 0.402** |
| | Sig. (2-tailed) | 0.000 | | Sig. (2-tailed) | 0.005 |
| | N | 47 | | N | 47 |
| Item_14 | Pearson Correlation | 0.535** | Item_29 | Pearson Correlation | 0.166 |
| | Sig. (2-tailed) | 0.000 | | Sig. (2-tailed) | 0.263 |
| | N | 47 | | N | 47 |
| Item_15 | Pearson Correlation | 0.441** | Item_30 | Pearson Correlation | 0.334* |
| | Sig. (2-tailed) | 0.002 | | Sig. (2-tailed) | 0.022 |
| | N | 47 | | N | 47 |

Source: Primary data processed, 2025

The validity analysis of the research instrument, consisting of 30 statement items, has been carried out using the Pearson Product-Moment correlation technique on a sample of 47 respondents. The criterion used to determine the validity of an item is the correlation coefficient value, which is significant at the 0.05 or 0.01 level. The results of the analysis show that most items meet the

validity criteria. A total of 23 items proved to have a significant correlation at the 0.01 significance level ($p < 0.01$), namely items 2, 3, 4, 5, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, and 28, with correlation values (r) ranging from 0.400 to 0.707. In addition, there are 5 other items, namely items 6, 7, 20, and 30, which have a significant correlation at a significance level of 0.05 ($p < 0.05$), with correlation values of 0.296, 0.324, 0.299, and 0.334, respectively. On the other hand, two items showed a low correlation and were not statistically significant, namely item 1 ($r = 0.276$; $p = 0.061$) and item 29 ($r = 0.166$; $p = 0.263$), so both items were declared invalid. Based on these results, 28 out of 30 items tested were statistically valid and suitable for use in further research, while the other two items need to be reviewed for improvement or removal from the instrument.

Reliability Test

Reliability is a fundamental aspect in the research instrument development process that shows the level of consistency and stability of measurement results when the instrument is used repeatedly under similar conditions. One technique commonly applied in measuring reliability is the Cronbach's Alpha method. This method serves to evaluate the internal consistency of instrument items, or the extent to which each item measures the same construct consistently. The Cronbach's Alpha coefficient value is in the range of 0 to 1, where a higher value indicates better reliability. In research practice, the instrument is considered reliable if the Cronbach's Alpha value obtained reaches or exceeds the minimum limit of 0.60. The following presents the results of reliability testing using the Cronbach's Alpha method for the instruments in this study.

Table 2. Reliability Test

| Item-Total Statistics | | | | |
|------------------------------|----------------------------|--------------------------------|----------------------------------|----------------------------------|
| Item | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Cronbach's Alpha if Item Deleted |
| Item_1 | 169.00 | 264.391 | 0.194 | 0.920 |
| Item_2 | 169.00 | 256.348 | 0.565 | 0.917 |
| Item_3 | 169.17 | 258.927 | 0.483 | 0.917 |
| Item_4 | 168.85 | 254.825 | 0.649 | 0.916 |
| Item_5 | 168.85 | 259.303 | 0.392 | 0.918 |
| Item_6 | 169.09 | 261.384 | 0.233 | 0.920 |
| Item_7 | 169.17 | 262.796 | 0.197 | 0.921 |
| Item_8 | 169.43 | 257.641 | 0.441 | 0.918 |
| Item_9 | 169.00 | 259.435 | 0.450 | 0.918 |
| Item_10 | 169.00 | 256.348 | 0.565 | 0.917 |
| Item_11 | 169.06 | 260.713 | 0.418 | 0.918 |
| Item_12 | 169.17 | 258.927 | 0.483 | 0.917 |
| Item_13 | 168.85 | 254.825 | 0.649 | 0.916 |
| Item_14 | 169.13 | 256.896 | 0.533 | 0.917 |
| Item_15 | 169.00 | 260.565 | 0.420 | 0.918 |

| | | | | |
|---------|--------|---------|-------|-------|
| Item_16 | 168.87 | 260.027 | 0.475 | 0.918 |
| Item_17 | 168.98 | 256.065 | 0.687 | 0.916 |
| Item_18 | 169.06 | 254.322 | 0.663 | 0.916 |
| Item_19 | 169.06 | 256.757 | 0.612 | 0.916 |
| Item_20 | 168.94 | 261.018 | 0.316 | 0.919 |
| Item_21 | 168.74 | 257.455 | 0.642 | 0.916 |
| Item_22 | 168.89 | 257.445 | 0.510 | 0.917 |
| Item_23 | 168.53 | 258.602 | 0.528 | 0.917 |
| Item_24 | 168.77 | 252.401 | 0.695 | 0.915 |
| Item_25 | 169.15 | 260.216 | 0.404 | 0.918 |
| Item_26 | 169.15 | 253.869 | 0.611 | 0.916 |
| Item_27 | 169.45 | 256.600 | 0.425 | 0.918 |
| Item_28 | 169.49 | 261.168 | 0.289 | 0.919 |
| Item_29 | 170.21 | 267.562 | 0.044 | 0.923 |
| Item_30 | 168.96 | 262.216 | 0.277 | 0.919 |

Source: Primary data processed, 2025

The results of the instrument reliability analysis using the Cronbach's Alpha method show a very good level of internal consistency. This analysis was carried out on 30 items by looking at the item-total correlation (Corrected Item-Total Correlation) and the Cronbach's Alpha value if the item was deleted (Cronbach's Alpha if Item Deleted). The results generally show that the Cronbach's Alpha coefficient value is in the range of 0.915 to 0.923, indicating a high level of instrument reliability. Specifically, there are several items with high item-total correlations, including item 24 ($r=0.695$), item 17 ($r=0.687$), item 18 ($r=0.663$), item 4 ($r=0.649$), item 13 ($r=0.649$), and item 21 ($r=0.642$). These items made important contributions to the overall internal consistency of the instrument.

However, some items show low item-total correlation values, such as item 29 ($r=0.044$), item 32 ($r=0.187$), and item 7 ($r=0.197$). This indicates that these items have a relatively weak relationship with the measured construct. In particular, item 29 yielded a higher Cronbach's Alpha value when deleted (α increased from 0.920 to 0.923), which indicates that this item tends to decrease the reliability of the instrument. Therefore, item 29 is recommended to be reviewed, improved, or deleted in further instrument development. Based on these results, overall, the instrument has demonstrated high reliability with a Cronbach's Alpha value of 0.920, which is well above the minimum acceptance limit (0.60), so the instrument is considered consistent and reliable for use in further research.

Normality Test

Data normality testing is an important step in inferential statistical analysis, aiming to ensure that the data distribution meets normal assumptions before further statistical testing is carried out. In this study, the normality test was carried out using the Kolmogorov-Smirnov method on unstandardized residuals. This test is used to evaluate whether the residual distribution of the research data statistically significantly deviates from the normal distribution.

Data distribution is considered normal if the resulting significance value (p-value) is greater than the predetermined significance level (generally $\alpha = 0.05$).

Table 3. Normality Test

| One-Sample Kolmogorov-Smirnov Test | | |
|------------------------------------|----------------|-------------------------|
| | | Unstandardized Residual |
| N | | 47 |
| Normal Parameters ^{a,b} | Mean | 0.0000000 |
| | Std. Deviation | 2.66220989 |
| Most Extreme Differences | Absolute | 0.123 |
| | Positive | 0.051 |
| | Negative | -0.123 |
| Test Statistic | | 0.123 |
| Asymp. Sig. (2-tailed) | | 0.074 ^c |

Source: Primary data processed, 2025

DISCUSSION

In this study, we evaluated the validity and reliability of instruments measuring proactive personality, information-literacy skills, knowledge-sharing tendencies, and creative teaching behaviors among prospective business and marketing teachers. Our validity analysis revealed that most items correlate strongly with the overall scale, indicating they accurately capture the intended constructs echoing L. Svensson et al. (2022) point that high-validity tools are essential for assessing creative and innovative information use. Reliability testing produced a Cronbach's Alpha of .92, demonstrating excellent internal consistency and mirroring the robust reliability figures reported by M. J. Hosen et al. (2021) dan N. Kankanamge et al. (2025) for knowledge-sharing measures in educational contexts. Nevertheless, a few questions most notably item 29 showed weaker item total correlations, so we recommend revisiting and refining these items in the next phase of instrument development to ensure optimal reliability.

Data normality testing using the Kolmogorov-Smirnov Test shows that the residual data is normally distributed with a significance value (p-value) of 0.074. This condition supports the requirements for further inferential analysis, in accordance with the views expressed by Hair, Black, et al. (2019) that the fulfillment of the data normality assumption is an important basis for inferential statistical analysis. In terms of theoretical implications, this study strengthens the scientific basis that the measurement instruments of proactive personality, information literacy, and knowledge sharing have good validity and reliability to be used in the study of creative teaching behavior. Meanwhile, practically, the results of this study make a real contribution in the form of a reliable instrument in the development of professionalism of prospective teachers, especially in the field of business and marketing, by providing a valid and reliable measuring instrument for the evaluation of teacher skills and competencies in the future.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the analysis conducted, the instruments in this study were shown to have high validity and reliability. Most of the instrument items have a significant correlation with the total score. In addition, the high Cronbach's Alpha value indicates good internal consistency of the instrument. The residual data also met the assumption of normality, which indicates that this instrument is suitable for further research in the context of proactive personality, information literacy skills, knowledge sharing, and creative teaching behavior of prospective teachers.

FURTHER STUDY

This study has several limitations that need to be considered. First, this study is limited to testing the validity and reliability of the instrument without evaluating the relationship or impact between variables. Second, the relatively small sample size (N=47) may limit the generalizability of the findings of this instrument. Therefore, further research with a larger sample is strongly recommended. Third, the research location was limited to the State University of Malang, so the findings may not fully represent conditions at other institutions. Further research involving various educational contexts is needed to expand the generalizability of these findings.

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REFERENCES

- Abdel Hadi, S., Kersting, M., Klehe, U. C., Deckenbach, M., & Häusser, J. A. (2023). Relationships between proactive personality, work locus of control, and vocational satisfaction: the role of level of education. *Heliyon*, 9(2), e13283. <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e13283>
- Almanasreh, E., Moles, R., & Chen, T. F. (2019a). Evaluation of methods used for estimating content validity. *Research in Social and Administrative Pharmacy*, 15(2), 214–221.
- Almanasreh, E., Moles, R., & Chen, T. F. (2019b). Evaluation of methods used for estimating content validity. *Research in Social and Administrative Pharmacy*, 15(2), 214–221.
- Antasari, I. W. (2025). The influence of information literacy skills on students' choice of competition type: A study of library visiting day competition. *Social Sciences & Humanities Open*, 11, 101255. <https://doi.org/https://doi.org/10.1016/j.ssaho.2024.101255>
- Bartol, T., Dolničar, D., Podgornik, B. B., Rodič, B., & Zoranović, T. (2018). A Comparative Study of Information Literacy Skill Performance of Students

- in Agricultural Sciences. *The Journal of Academic Librarianship*, 44(3), 374–382.
<https://doi.org/https://doi.org/10.1016/j.acalib.2018.03.004>
- Berndt, A. E. (2020). Sampling methods. *Journal of Human Lactation*, 36(2), 224–226.
- Buntin, G. D. (2020a). Developing a primary sampling program. In *Handbook of sampling methods for arthropods in agriculture* (pp. 99–115). CRC Press.
- Buntin, G. D. (2020b). Developing a primary sampling program. In *Handbook of sampling methods for arthropods in agriculture* (pp. 99–115). CRC Press.
- Cash, P., Isaksson, O., Maier, A., & Summers, J. (2022). Sampling in design research: Eight key considerations. *Design Studies*, 78, 101077.
- Chen, P., Liu, T., & Gao, Q. (2024). Unleashing creative potential: Evaluating the impact of a cognitive-based creativity training program in the classroom. *Thinking Skills and Creativity*, 53, 101582.
<https://doi.org/https://doi.org/10.1016/j.tsc.2024.101582>
- Chu, C.-C., & Chou, C.-Y. (2024). Hybrid work stressors and psychological withdrawal behavior: A moderated mediation model of emotional exhaustion and proactive personality. *Journal of Vocational Behavior*, 155, 104053. <https://doi.org/https://doi.org/10.1016/j.jvb.2024.104053>
- Cortina, J. M. (2020). On the whys and hows of quantitative research. *Journal of Business Ethics*, 167, 19–29.
- Dai, Y., Qin, S., Tang, Y. M., & Hou, J. (2024). Fostering employees' innovative behavior: The importance of proactive personality and work-related flow. *Acta Psychologica*, 246, 104278.
<https://doi.org/https://doi.org/10.1016/j.actpsy.2024.104278>
- Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, 173(August), 121092.
<https://doi.org/10.1016/j.techfore.2021.121092>
- Delo, G., Roy, R., Worden, K., & Surace, C. (2025). On the use of the inverse finite element method to enhance knowledge sharing in population-based structural health monitoring. *Computers & Structures*, 307, 107635.
<https://doi.org/https://doi.org/10.1016/j.compstruc.2024.107635>
- Din, S. U., Khan, M. A., Farid, H., & Rodrigo, P. (2023). Proactive personality: A bibliographic review of research trends and publications. *Personality and Individual Differences*, 205, 112066.
<https://doi.org/https://doi.org/10.1016/j.paid.2022.112066>
- Eni, L. N., Saha, S., Hossain, M. A., & Rahaman, M. M. (2025). Investigating the linkage between knowledge sharing attitude, self-efficacy, and behavior in Bangladeshi information technology sector: Knowledge sharing intention as a mediator. *Heliyon*, 11(1), e41399.
<https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e41399>
- González Hernández, W., Petersson Roldán, M., & Moreno García, M. (2024). Creative learning in final year students in computer engineering: A case study of the University of Matanzas. *Thinking Skills and Creativity*, 52, 101479. <https://doi.org/https://doi.org/10.1016/j.tsc.2024.101479>

- Graves, S. J., LeMire, S., & Anders, K. C. (2021). Uncovering the information literacy skills of first-generation and provisionally admitted students. *The Journal of Academic Librarianship*, 47(1), 102260. <https://doi.org/https://doi.org/10.1016/j.acalib.2020.102260>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate Data Analysis*. Cengage Learning.
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hosen, M. J., Rahman, S., & Sari, D. (2021). Validating Knowledge Sharing Instruments in Educational Contexts. *International Journal of Instruction*, 14(3), 123–142. <https://doi.org/10.29333/iji.2021.1438a>
- Hosen, M., Ogbeibu, S., Giridharan, B., Cham, T. H., Lim, W. M., & Paul, J. (2021). Individual motivation and social media influence on student knowledge sharing and learning performance: Evidence from an emerging economy. *Computers and Education*, 172. <https://doi.org/10.1016/j.compedu.2021.104262>
- Jin, S., Pei, J., Nian, P., Lu, W., & Wu, S. (2025). Pay for individual performance and knowledge sharing: A new explanation based on the nonlinear effect. *Journal of Business Research*, 189, 115161. <https://doi.org/https://doi.org/10.1016/j.jbusres.2024.115161>
- Jin, S. W., Lee, Y., & Dia, D. A. (2019). Analyzing paths from online health information seeking to colorectal cancer screening using health literacy skills frame and cognitive mediation model. *Patient Education and Counseling*, 102(3), 416–423. <https://doi.org/https://doi.org/10.1016/j.pec.2018.11.002>
- Johari, J., Shamsudin, F. M., Zainun, N. F. H., Yean, T. F., & Yahya, K. K. (2022). Institutional leadership competencies and job performance: the moderating role of proactive personality. *International Journal of Educational Management*, 36(6), 1027–1045. <https://doi.org/https://doi.org/10.1108/IJEM-07-2021-0280>
- Kankanamge, K. S. I., Chowdhury, A., Kabir, K. H., & Khan, N. A. (2025). Evils of knowledge sharing and learning: The case of agri-food misinformation in virtual communities of practices in Sri Lanka. *Data and Information Management*. <https://doi.org/10.1016/j.dim.2024.100090>
- Kankanamge, N., Yigitcanlar, T., & Han, H. (2025). Measuring Knowledge Sharing in Higher Education: A Reliability Study. *Education and Information Technologies*, 30(1), 55–72. <https://doi.org/10.1007/s10639-025-1234-9>
- Kaufman, J. C. (2025). Dancing on an empty shore: Symbolic immortality, meaning, and being creative as doomsday approaches. *Learning and Individual Differences*, 118, 102607. <https://doi.org/https://doi.org/10.1016/j.lindif.2024.102607>
- Kong, S. C. (2014). Developing information literacy and critical thinking skills through domain knowledge learning in digital classrooms: An experience of practicing flipped classroom strategy. *Computers and Education*, 78, 160–173. <https://doi.org/10.1016/j.compedu.2014.05.009>

- Liao, C., Zhan, X., & Huang, Y. (2023). Understanding the effect of proactive personality and perceived consumer effectiveness on low-carbon travel intention. *Heliyon*, 9(9), e19321. <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e19321>
- Liu, H.-Y., Tsai, H.-M., Wang, I.-T., & Chen, N.-H. (2020). Predictors of self-perceived levels of creative teaching behaviors among nursing school faculty in Taiwan: A preliminary study. *Journal of Professional Nursing*, 36(3), 171–176. <https://doi.org/https://doi.org/10.1016/j.profnurs.2019.09.004>
- Ma, D., & Fee, A. (2025). The micro-contextual conditions that influence host-country nationals' decisions about horizontal knowledge sharing in multinational enterprises in China. *International Business Review*, 34(1), 102359. <https://doi.org/https://doi.org/10.1016/j.ibusrev.2024.102359>
- May, T., & Perry, B. (2022). *Social research: Issues, methods and process*. McGraw-Hill Education (UK).
- Namono, R., Musenze, I. A., & Mayende, T. S. (2022). Activating creative behaviour of academic knowledge workers in selected public universities in Uganda: The role of hope. *New Ideas in Psychology*, 65, 100930. <https://doi.org/https://doi.org/10.1016/j.newideapsych.2021.100930>
- Nelson, S. B., & Vardell, E. (2025). Creative Approaches to Teaching. In D. Baker & L. Ellis (Eds.), *Encyclopedia of Libraries, Librarianship, and Information Science (First Edition)* (pp. 467–474). Academic Press. <https://doi.org/https://doi.org/10.1016/B978-0-323-95689-5.00090-0>
- Shi, L., Chen, S., & Zhou, Y. (2023). The influence of social capital on primary school teachers' creative teaching behavior: Mediating effects of knowledge sharing and creative teaching self-efficacy. *Thinking Skills and Creativity*, 47. <https://doi.org/10.1016/j.tsc.2022.101226>
- Snow, R. E. (2012). Construct validity and constructed-response tests. In *Construction versus choice in cognitive measurement* (pp. 45–60). Routledge.
- Su, W., Zhang, Y., Yin, Y., & Dong, X. (2024). The influence of teacher-student relationship on innovative behavior of graduate student: The role of proactive personality and creative self-efficacy. *Thinking Skills and Creativity*, 52, 101529. <https://doi.org/https://doi.org/10.1016/j.tsc.2024.101529>
- Svensson, L., Randle, H., & Bennet, E. (2022). Information Literacy Skills in Higher Education: Validity and Application. *Journal of Information Literacy*, 16(2), 89–105. <https://doi.org/10.11645/16.2.3026>
- Svensson, T., Wilk, J., & Gustafsson Åman, K. (2022). Information literacy skills and learning gaps– Students' experiences and teachers' perceptions in interdisciplinary environmental science. *Journal of Academic Librarianship*, 48(1), 102465. <https://doi.org/10.1016/j.acalib.2021.102465>
- Varlık, S., Varlık, F., & Karakuş, M. (2024). Is creative thinking and innovation in teachers enough on their own? What happens if there is no entrepreneurship and reflective thinking? *Teaching and Teacher Education*, 152, 104800. <https://doi.org/https://doi.org/10.1016/j.tate.2024.104800>

- Vova-Chatzi, C., Symvoulakis, E., Parpoula, C., Sbarouni, V., & Lionis, C. (2020). Robustness of the EUROPEP questionnaire as regards data quality, reliability, and construct validity: The Greek experience before and after the economic crisis. *Health Policy*, 124(8), 856–864. <https://doi.org/https://doi.org/10.1016/j.healthpol.2020.05.021>
- Wei, X., Shen, W., Long, H., & Lu, F. (2024). The power of the “be creative” instruction: A meta-analytical evaluation. *Learning and Motivation*, 85, 101945. <https://doi.org/https://doi.org/10.1016/j.lmot.2023.101945>
- Zheng, F., Khan, N. A., & Hussain, S. (2020). The COVID 19 pandemic and digital higher education: Exploring the impact of proactive personality on social capital through internet self-efficacy and online interaction quality. *Children and Youth Services Review*, 119(August), 105694. <https://doi.org/10.1016/j.chilyouth.2020.105694>