

ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)



ISRG PUBLISHERS

Abbreviated Key Title: ISRG J Arts Humanit Soc Sci

ISSN: 2583-7672 (Online)

Journal homepage: <https://isrgpublishers.com/isrgjahss>

Volume – IV Issue - V (September-October) 2026

Frequency: Bimonthly



Learning Needs for Psychology-Based Product Development in Malaysian Teacher Education: Evidence from EDUP3113

Khasturi a/p Ramalingam^{1*}, Aisyah Salwa binti Khirul Anuar², Marcellina Arlene anak Bonniface³, Nur Amalia Natasha binti Asaari⁴, and Thiviya A/P Rames⁵

^{1, 2, 3, 4, 5} Institut Pendidikan Guru Kampus Pendidikan Teknik, Malaysia

| Received: 24.08.2026 | Accepted: 29.08.2026 | Published: 08.09.2026

*Corresponding author: Khasturi a/p Ramalingam

Abstract

Educational psychology can be used to help pre-service teachers understand how learners think, feel, act and grow, but because of the theoretical density of the subject, it may be hard to implement in the classroom. This study aimed to explore learning needs to be addressed in the development of a product for the Psychology of Learning (EDUP3113) in a Malaysian Institute of Teacher Education (ITE) based on psychology. The study used a descriptive needs analysis survey, which was voluntarily answered by 33 students of Program Ijazah Sarjana Muda Perguruan (PISMP) who had taken or were taking the course. The questionnaire included a perceived level of difficulty of the topic (using a 5-point scale), 11 choices of activities, four of which were preferred, and open-ended suggestions. Responses were described using frequencies and percentages. The learning theories got the highest and most focused ratings at the difficult end of the scale, with motivation, learning styles, guidance and classroom management being more often rated at the middle of the scale. Games were selected by 26 respondents (78.8%), hands-on activities by 23 (69.7%), songs and singing by 20 (60.6%), and visual aids by 19 (57.6%). The written suggestions by students also highlighted the need for interaction, practical examples, the use of multimedia and a decrease in lectures. The results are not necessarily proof of the effectiveness of any specific product, but rather are statements of design priorities for a later development/evaluation process. A good product should include some game-like activities, real-world examples, visual supports, and collaborative discussion. The study provides an evidence base for context-specific learner-informed instructional design in the context of teacher education in Malaysia, but with the limitation of a small, self-selected sample.

Keywords: active learning; educational psychology; instructional product development; needs analysis; pre-service teachers; teacher education.

1. Introduction

Educational psychology plays a pivotal role in teacher preparation as it provides future teachers with a vocabulary for understanding how learners think, grow, act, and react to teaching. EDUP3113: Psychology of Learning is a course for PISMP students to be introduced to learning theories, motivation, cognition, classroom behaviour and related pedagogical applications in the context of the Malaysian Institute of Teacher Education. Mastery is not, therefore, simply memorizing terminology. Students must compare theoretical positions, interpret learner behaviour, and use psychological principles when making classroom decisions.

This movement from concept to application can be demanding. Abstract constructs, overlapping terminology, and multiple theoretical frameworks place a substantial cognitive burden on learners, particularly when teaching is dominated by exposition. Active and learner-centred designs may offer a useful response because they create opportunities to test an idea, discuss competing interpretations, and connect theory to a recognisable teaching situation (Gu et al., 2022; Hsbollah & Hassan, 2022). Experiential learning similarly foregrounds the movement between concrete experience, reflection, conceptualisation, and experimentation (Kolb, 1984).

The existence of promising pedagogical approaches, however, does not establish which activities a particular group of learners needs or prefers. Instructional products developed without a prior needs analysis may be attractive yet poorly aligned with the topics students find difficult or the ways in which they wish to engage with those topics. This distinction is important in teacher education: an instructional product serves both as a learning resource and as a model of pedagogy that pre-service teachers may later adapt in their classrooms.

Evidence on active learning is extensive, but less is known about how PISMP students at IPG Kampus Pendidikan Teknik perceive the specific demands of EDUP3113 and which forms of participation they regard as useful. The present study addresses that local design problem. It does not test a finished product. Instead, it establishes a learner-informed basis for deciding what a subsequent psychology-based product should prioritise and what claims will later require empirical evaluation.

2. Literature Review and Conceptual Positioning

2.1 Educational psychology in teacher education

Educational psychology supports pedagogical reasoning by linking accounts of learning, development, motivation, and behaviour to instructional decisions. For pre-service teachers, the value of the field lies in using theory to explain a classroom event and to select an appropriate response. The subject can nevertheless appear fragmented when concepts are presented as isolated definitions. Zheng (2024) argues for student-centred psychology curricula, while Hsbollah and Hassan (2022) show how active, enjoyable, and technology-supported elements can contribute to meaningful learning in problem-based environments. All of these points to the design challenge being not just to make content entertaining, but to make structured participation that takes conceptual reasoning forward.

2.2 Constructivist and experiential foundations

Constructivist approaches view learners as meaning makers. Both Bruner's discovery-oriented stance and Vygotsky's social approach highlight inquiry and dialogue, guidance and participation with others. These ideas can be used in instructional tasks where students categorize examples, justify an interpretation, and/or update an explanation based on the feedback of others. Experiential learning also involves a time sequence: Learners experience a concrete task, reflect on it, relate it to an abstract concept, and then test the new understanding (Kolb, 1984). A game or simulation is educationally useful only if it makes this conceptual movement visible when applied to EDUP3113.

2.3 Active and multimodal learning

Active learning includes techniques which involve students engaging in cognitive activities as opposed to just receiving information. Gu et al. (2022) discovered that active and passive strategies combined with the students' cognitive style in online creativity training, which means that active learning should not be used as a single strategy. In a language-learning context, the use of multimedia has been reported to increase the interest and learning outcomes of students when learning a language through songs (Luo et al., 2022), while active learning methods have also been reported to have a positive impact on knowledge retention in higher education (Maceiras et al., 2025). The use of games, visual supports, songs and hands-on tasks is justified in these studies, but it has to be tested and not assumed in transfer to the field of teacher education in Malaysia and educational psychology.

2.4 Needs analysis for instructional product development

Needs analysis links an instructional design to an identified discrepancy, difficulty, or preference. In this study, the relevant inputs are students' perceptions of topic difficulty, their selected activity preferences, and their suggestions for improving comprehension and retention. These inputs are interpreted as design signals rather than causal evidence. The proposed logic is that perceived difficulties and preferences inform active-learning features, which then guide product development. Whether the product improves learning remains a question for a later pilot or quasi-experimental study.

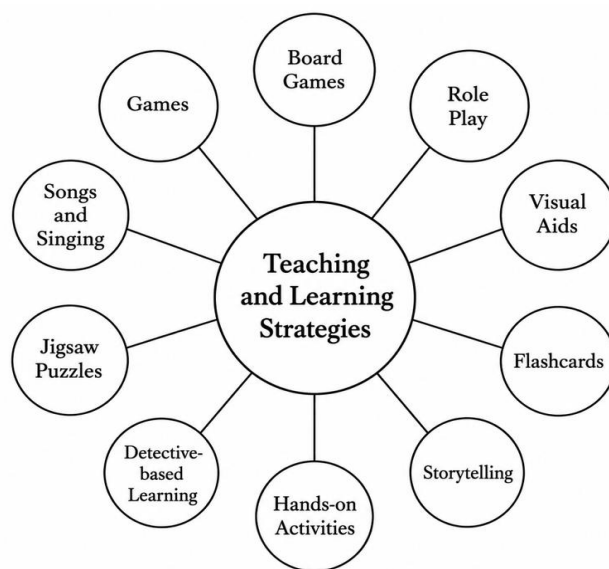


Figure 1. Conceptual pathway from learner needs to psychology-based product development.

3. Research Questions

- Which EDUP3113 topics do participating PISMP students perceive as difficult?
- Which learning activities do participating students prefer for engaging with educational psychology content?
- What changes do students suggest to support their understanding and retention of EDUP3113 content?
- What product-design priorities can be inferred from the combined responses?

4. Method

4.1 Design and setting

The study used a cross-sectional, descriptive survey as the needs-analysis phase of an instructional product-development project. The setting was IPG Kampus Pendidikan Teknik, and the focal course was EDUP3113: Psychology of Learning. This design was selected to describe the participating students' perceptions and preferences at one point in time; it was not intended to test relationships, differences, or causal effects.

4.2 Participants and recruitment

Thirty-three PISMP students who had taken or were currently taking EDUP3113 completed the survey. The link was distributed through online communication channels to an estimated 250 eligible or potentially eligible students, producing an approximate response rate of 13.2%. All participants were anonymous, and participation was voluntary. The respondents were self-selected as they chose to participate in the study and were from one campus only and therefore should not be considered representative of all PISMP students.

4.3 Instrument

The Google Forms questionnaire contained three sections. Section A asked respondents to rate selected EDUP3113 topics from 1 (very easy) to 5 (very difficult). Section B required each respondent to choose four activities from 11 options: board games, role play, games, visual aids, flashcards, storytelling, hands-on activities, detective-based learning, jigsaw puzzles, case studies, and songs and singing. Section C invited open-ended suggestions for improving understanding and retention. Items were reviewed

for relevance and clarity and were aligned with the study objectives and literature on active learning. The manuscript does not presently report the number or expertise of reviewers, a content-validity index, pilot-testing procedures, or an internal-consistency coefficient; these details should be added if they were documented.

4.4 Procedure and ethical considerations

The survey information explained the purpose of the study and the voluntary nature of participation. No identifying information was reported in the dataset used for analysis, and responses were treated confidentially. The authors should insert the approving institution or ethics committee, approval or reference number, and approval date if formal ethical review was obtained. If the study was exempted or subjected to an institutional educational-evaluation procedure, this should be clearly indicated.

4.5 Analysis

For closed-ended responses, frequencies and percentages were used to summarise responses. The distribution of responses across the five response categories was used to interpret the topic-difficulty results, instead of the unsupported claims of achievement. The multiple response activity selections were reported both in number and percentage of the 33 respondents who selected each option, which means that percentages do not add up to 100%. Open-ended responses were categorised descriptively, based on similar suggestions. There were no inferential statistics used.

5. Results

5.1 Perceived topic difficulty

There was no consistent level of difficulty for the response pattern; it was topic dependent. The highest level of concentration was found in learning theories, with 14 respondents choosing level 3, 6 choosing level 4, and 6 choosing level 5. The topics of motivation, learning styles, guidance and classroom management received more ratings at level 3, whereas the topics of foundational concepts and learning process received more ratings at levels 1 and 2. Thus, the most robust design need is theoretical comparison and application, and other topics seem to need reinforcement, not remediation in their entirety.

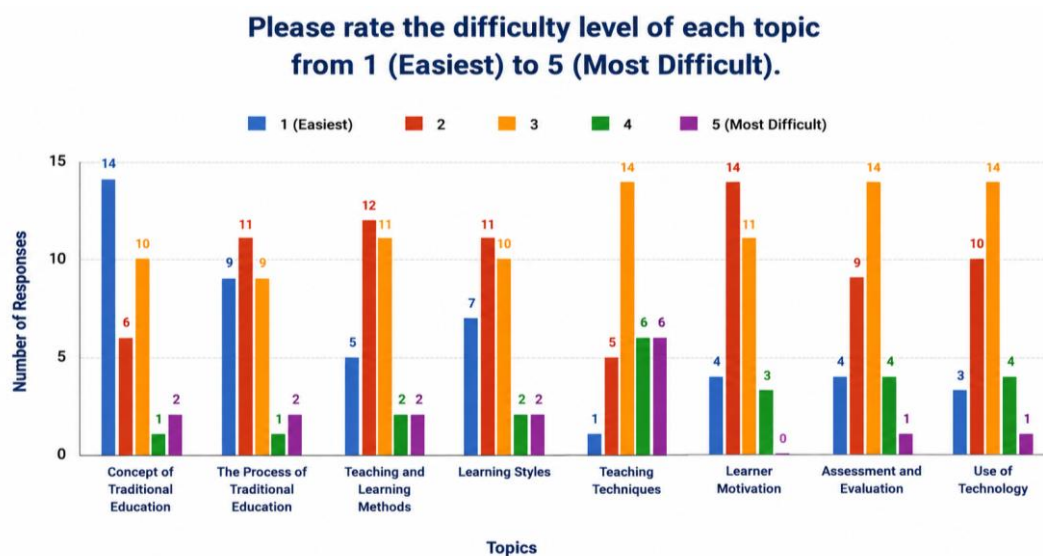


Figure 2. Distribution of perceived difficulty ratings across EDUP3113 topics ($n = 33$). Note. Scale: 1 = very easy; 5 = very difficult.

5.2 Preferred learning activities

The most popular activity was games (26 students, 78.8%), followed by hands-on activities (23, 69.7%), songs and singing (20, 60.6%) and visual aids (19, 57.6%). Note that 15 students (45.5%) chose board games. Twelve students (36.4%) chose role

play, and 12 students (36.4%) chose detective-based learning. Lower selection frequencies were recorded for jigsaw puzzles and case studies (six each, 18.2%), storytelling (five, 15.2%), and flashcards (four, 12.1%). These results are statements of preference, rather than comparative effectiveness.

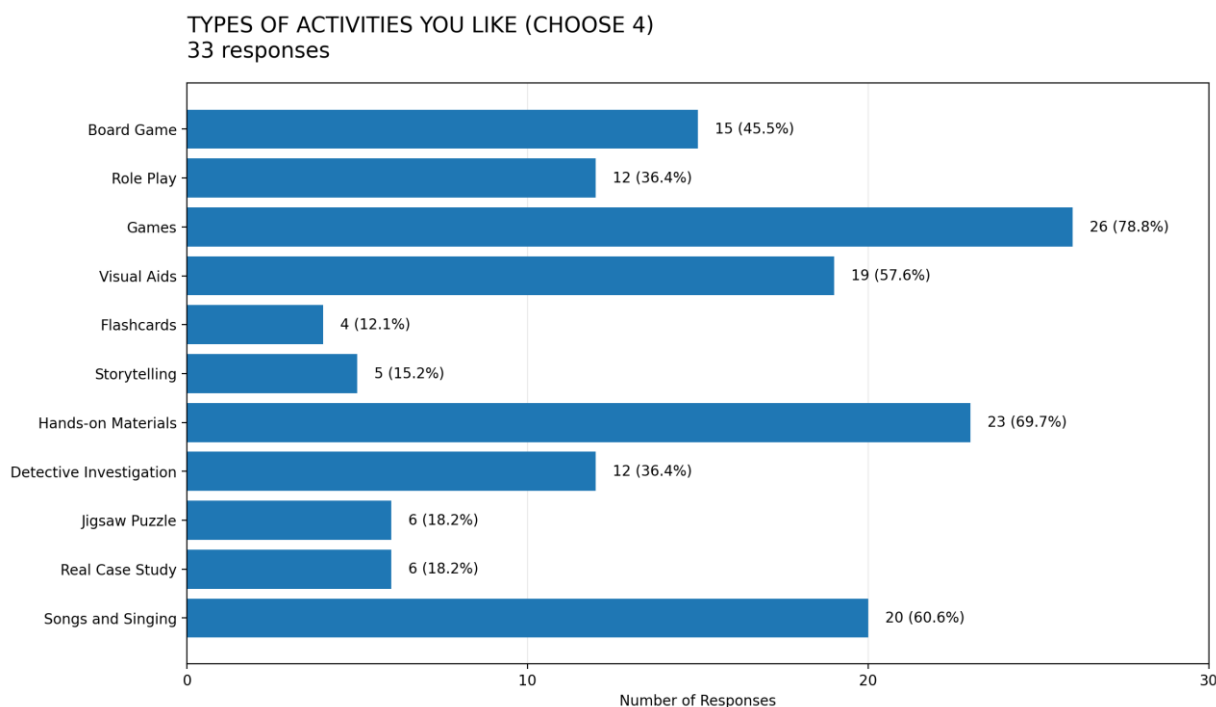


Figure 3. Preferred learning activities selected by PISMP students ($n = 33$; four selections permitted per respondent).

5.3 Open-ended suggestions

Students' comments all pointed to four practical requests: more interactive tasks, less reliance on lecture delivery, more games and collaborating with others, and more connections with theory and real classroom situations. Respondents also suggested the need for visual and multimedia materials, which could make the complex ideas easy to understand. As the original manuscript does not show the number of comments in each category, and examples of anonymised comments, these should be considered as descriptive themes. If they have the original responses, it would be better to include the frequencies of reporting categories and short representative examples of the responses.

6. Discussion

The needs analysis leads to a specific instructional-design problem: students seem to require more help in making the transition from theoretical labels to distinctions in practice. Learning theories received the highest number of ratings on the difficult end of the range, while some other topics were grouped around the middle. A product for EDUP3113 should thus not simply repeat the definitions. It should involve students in making a distinction between theories, interpreting a classroom vignette, providing justification for a theory fit, and rethinking the theory fit in light of feedback.

The preference outcomes help to explain how students would like to do this work. The choice was weighted towards games, hands-on activities and songs, with visual aids also being quite popular. These preferences are indicative of a constructivist/experiential view of reading, which involves participation, material or social

interaction, and multiple opportunities to use concepts. They do not mean that learning will be enhanced by any game, song or visual. Activity should be related to the desired concept, and reflection should be done to make the psychological principle explicit.

This qualification is important because preference and effectiveness are distinct. The choice of activity may be familiar and/or pleasurable to the student, and, sometimes, a less preferred activity may be more effective for a specific learning outcome. Therefore, the current evidence should be used to inform the prototyping and not be used to set the design. A next step to be defensible would be to compare students' conceptual performance before and after using a prototype, as well as gather evidence of the usability of the various components of the prototype that could either facilitate or hinder students' learning.

The results align in general with research on active participation and meaningful learning (Gu et al., 2022; Hsibollah & Hassan, 2022), and the focus on experience, reflection and application are consistent with Kolb's (1984) framework. The contribution of this study is more specific and situational: it is to convert the general pedagogical principles into design specifications based on one set of pre-service teachers in Malaysia. This local contribution should be presented, but not in a way that suggests the results are for all IPG campuses or that an untested product is already effective.

7. Implications for Product Design and Teacher Education

The results of the combined evidence lead to four design priorities. Firstly, the product should be focused on application and not recall. Short cases, sorting tasks and theory-comparison challenges might

lead students to verbalize the reasons for a concept to fit a situation. Second, the game mechanics should be used to provide feedback, explanation and replay of the game, not just to reward speed. Thirdly, visual supports and short verbal and/or musical prompts can help with organisation and retrieval. However, contentious ideas should not be dumbed down. Fourth, there should be structured reflection in each concrete activity to make the experience into a psychological explanation.

The proposed product can also serve as a model for teacher educators in designing their teaching. In addition to the content of the course, pre-service teachers would be exposed to an example of how a resource could be developed through the use of learner evidence, theoretical alignment and iterative evaluation. The product should be durable, available, flexible in size and have directions which explain the pedagogical intent. These features should be tested throughout the prototyping process, and not assumed when doing the needs analysis.

8. Limitations and Future Research

There are four main limitations to the study. The number of respondents was small, self-selected, and from one campus. There is an increased risk of non-response bias with the approximate 13.2% response rate. The measures were not a reflection of knowledge or learning gains, but rather a reflection of perceived difficulty and preference. There is limited reporting of evidence of instrument development, expert review, pilot testing, and reliability. Finally, there is no indication of the frequency of categories, the coding procedures or illustrative quotations. These limitations prevent generalisation and the claims of the design.

Future research needs to first be strengthened and documented with the instrument, and then needs analysis should be repeated with a larger, multi-campus sample. Interviews or focus groups could be used to explore the reasons for difficulties with some of the theories and what students would like to gain from the activities they like. A prototype should then be tested for usability, and later a pilot or quasi-experimental evaluation should be conducted with conceptual understanding, motivation, engagement and delayed retention measures. This would enable the project to shift from a design based on preference to evidence of educational value.

9. Conclusion

The development of a learning product for EDUP3113 is based on bounded evidence from this study. The learning theories had the highest number of higher difficulty ratings and games, hands-on activities, songs and visual aids were the most commonly selected learning formats among the 33 respondents. The students' suggestions confirmed the necessity for interaction, practical examples in the classroom, the use of multimedia and a reduction of the lecture dependency. The right conclusion is not that these approaches have already enhanced learning, but that they provide defensible priorities for prototype development. The next academic step would be to take those priorities and make an explicit product that would be used to assess if there is an improvement in conceptual understanding and retention.

Declarations

Ethics approval: The study was carried out based on ethical principles in educational research. The approval has been received from IPG Kampus Pendidikan Teknik.

Informed consent: The purpose, procedures, voluntary nature, anonymity and confidentiality of the study were explained to all participants. Prior to completing the online questionnaire, electronic informed consent was obtained.

Funding: This research was not specifically funded by any particular funding agency, public, commercial or not-for-profit.

Conflict of interest: The authors have no competing interests or conflicts of interest with this study.

Data availability: Anonymised data underlying the results presented in this study will be available from the corresponding author on reasonable request, provided that it meets institutional requirements and confidentiality of the participants.

References

1. Bruner, J. S. (1960). The act of discovery. Harvard Educational Review.
2. Gu, X., Tan, Y., Wu, X., Cai, Z., Lai, Q., Cheng, M., & Zhao, Q. (2022). Active versus passive strategy in online creativity training: How to best promote creativity of students with different cognitive styles? *Thinking Skills and Creativity*, 44, 101021. <https://doi.org/10.1016/j.tsc.2022.101021>
3. Hsbollah, H. M., & Hassan, H. (2022). Creating meaningful learning experiences with active, fun, and technology elements in the problem-based learning approach and its implications. *Malaysian Journal of Learning and Instruction*, 19(1), 145–173. <https://doi.org/10.32890/mjli2022.19.1.6>
4. Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.
5. Kooloos, J. G., Bergman, E. M., Scheffers, M. A., Schepens-Franke, A. N., & Vorstenbosch, M. A. (2020). The effect of passive and active education methods applied in repetition activities on the retention of anatomical knowledge. *Anatomical Sciences Education*, 13(4), 458–466. <https://doi.org/10.1002/ase.1924>
6. Luo, Y., Kong, X., & Ma, Y. (2022). Effects of multimedia assisted song integrated teaching on college students' English learning interests and learning outcomes. *Frontiers in Psychology*, 13, 912789. <https://doi.org/10.3389/fpsyg.2022.912789>
7. Maceiras, R., Feijoo, J., Alfonsin, V., & Perez-Rial, L. (2025). Effectiveness of active learning techniques in knowledge retention among engineering students. *Education for Chemical Engineers*, 51, 1–8. <https://doi.org/10.1016/j.ece.2025.01.003>
8. Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
9. Zheng, M. (2024). Psychology curriculum and teaching based on the student-centered approach. *Advances in Educational Technology and Psychology*, 8(3), 22–28. <https://doi.org/10.23977/aetp.2024.080305>